Minnesota Pollution Control Agency

Notice of Intent to Adopt Rules Without a Public Hearing

Proposed Amendment to Rules Governing Hazardous Waste, *Minnesota Rules*, Chapters 7001 and 7045. The MPCA is proposing to amend its existing hazardous waste rules in *Minnesota Rules* chapters 7001 and 7045. In conjunction with these amendments, the following rules are being repealed: *Minnesota Rules* parts 7045.0020, subpart 45a; 7045.0075, subparts 8 and 10; 7045.0135, subparts 1, 2, 2a, 3, and 4; 7045.0139, subpart 2; 7045.0141, subparts 2-23; 7045.0143, subparts 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14, 15, 17, 20, 21, 23, 25, and 27; 7045.0544, subparts 2 and 3; 7045.1300; 7045.1305; 7045.1309; 7045.1310; 7045.1315; 7045.1320; 7045.1325; 7045.1330; 7045.1333; 7045.1334; 7045.1335; 7045.1339; 7045.1350; 7045.1355; 7045.1358; 7045.1360; and 7045.1380.

Introduction. The Minnesota Pollution Control Agency (MPCA or Agency) intends to adopt rules without a public hearing following the procedures in the rules of the Office of Administrative Hearings, *Minnesota Rules* 1400.2300 to 1400.2310, and the Administrative Procedure Act, *Minnesota Statutes* §§ 14.22 to 14.28. You may submit written comments on the proposed rules and may also submit a written request that a hearing be held on the rules until 4:30 p.m. on Thursday, August 14, 2008.

Agency Contact Person. You must submit comments or questions on the rules and written requests for a public hearing to the designated Agency contact. The Agency contact for this rule is: Nathan Cooley, email: nathan.cooley@pca.state.mn.us, phone 651-297-7544. You may also mail comments to the contact's attention at the Minnesota Pollution Control Agency, 520 Lafayette Road North, Saint Paul, Minnesota 55155, or fax to the contact's attention at 651-297-8676. TTY users may call the MPCA at 651-282-5332 or 800-657-3864.

Subject of Rules and Statutory Authority. The Agency proposes to amend its hazardous waste rules in *Minnesota Rules* chapters 7001 and 7045. The statutory authority to adopt the rules is contained in Minnesota Statutes § 116.07, subdivision 4. The proposed amendments fall into three general categories of change.

First, the Agency is proposing changes to its hazardous waste rules that are required to maintain Minnesota's hazardous waste program authorization from the U.S. Environmental Protection Agency (EPA). EPA program authorization allows the MPCA to operate its state hazardous waste program in lieu of the EPA enforcing federal hazardous waste requirements. The federal Resource Conservation and Recovery Act (RCRA) requires states with federally authorized hazardous waste programs to adopt those federal program amendments that increase stringency in order to maintain their program equivalence and authorization.

Some of the proposed rule changes have been in effect federally for at least several years. Those federal regulations that the EPA promulgated under its Hazardous and Solid Waste Amendments (HSWA) authority applied in all states on their federal effective date. In this rulemaking, the MPCA is adopting provisions from about 67 federal amendments. The EPA promulgated about 51 of these using its HSWA authority. Thus, most of these provisions already apply in Minnesota under the authority of the EPA. However, the EPA, rather than the MPCA, enforces these requirements until the MPCA adopts the changes into its rules. Some of the

remaining EPA amendments, while also required to maintain state authorization, do not apply in Minnesota until they are adopted into *Minnesota Rules*.

Second, the Agency is adopting certain other federal EPA amendments that are not required to maintain program authorization but which the MPCA believes will reduce unnecessary regulatory burdens while remaining protective of human health and the environment.

In adopting some of the federal changes, the MPCA has continued its existing practice of incorporating certain portions of the federal regulations by reference as amended. In this proposed rulemaking, examples of incorporation by reference as amended include incorporation of hazardous waste lists, land disposal restrictions, air emission standards, and testing methodologies and technical standards.

Finally, the MPCA is proposing a number of changes to correct errors or omissions in the existing rules and to improve or clarify existing rule language.

A copy of the proposed rules is published in the *State Register*, Web site: www.comm.media.state.mn.us/bookstore/state_register.asp, and is also available via the Agency Web site: www.pca.state.mn.us/waste/hazwaste-rulechanges.html, or from the Agency contact person listed above.

Comments. You have until 4:30 p.m. on Thursday, August 14, 2008, to submit written comment in support of or in opposition to the proposed rules and any part or subpart of the rules. Your comment must be in writing and the Agency contact person must receive it by the due date. The Agency is providing a 45-day comment period instead of the required 30-day comment period as part of the Agency's plan to provide additional public notice. The Agency encourages comment. Your comment should identify the portion of the proposed rules addressed and the reason for the comment. You are encouraged to propose any change desired. You must also make any comments about the legality of the proposed rules during this comment period.

Request for a Hearing. In addition to submitting comments, you may also request that the Agency hold a hearing on the rules. Your request must be in writing and the Agency contact person must receive it by 4:30 p.m. on Thursday, August 14, 2008. Your written request for a public hearing must include your name and address. You must identify the portion of the proposed rules that you object to or state that you oppose the entire set of rules. Any request that does not comply with these requirements is not valid and the Agency cannot count it when determining whether it must hold a public hearing. You are also encouraged to state the reason for the request and any changes you want made to the proposed rules.

Withdrawal of Requests. If 25 or more persons submit a valid written request for a hearing, the Agency will hold a public hearing unless a sufficient number withdraw their requests in writing. If enough requests for hearing are withdrawn to reduce the number below 25, the Agency must give written notice of this to all persons who requested a hearing, explain the actions the Agency took to effect the withdrawal, and ask for written comments on this action. If a public hearing is required, the Agency will follow the procedures in *Minnesota Statutes* §§ 14.131 to 14.20.

Alternative Format. Upon request, the Agency can make this Notice available in an alternative format, such as large print, Braille, or cassette tape. To make such a request, please contact the Agency contact person at the address or telephone number listed above.

Modifications. The Agency may modify the proposed rules as a result of public comment. The modifications must be supported by comments and information submitted to the Agency, and the adopted rules may not be substantially different than these proposed rules, unless the Agency follows the procedure under *Minnesota Rules* part 1400.2110. If the proposed rules affect you in any way, the Agency encourages you to participate in the rulemaking process.

Statement of Need and Reasonableness. The statement of need and reasonableness contains a summary of the justification for the proposed rules, including a description of who will be affected by the proposed rules and an estimate of the probable cost of the proposed rules. It is now available from the Agency contact person. As part of the Agency's plan to enhance public notice, the Agency is also making the statement of need and reasonableness and supporting documents available on compact disc and on the Agency's Web site: www.pca.state.mn.us/waste/hazwaste-rulechanges.html.

Request to Have the MPCA Citizens' Board (Board) Make a Decision on the Rule if No Hearing is Required. If a hearing is required, the Board will make the final decision on whether to adopt the proposed rules. However, even if no hearing is required, you may submit a request to the Commissioner or a Board member to have the Board make the decision on whether to adopt the proposed rules. Your request must be in writing; must state to whom it is directed and must be received by the Agency contact person by 4:30 p.m. on Thursday, August 14, 2008. Under *Minnesota Statutes* § 116.02, where a hearing is not required, the Board will only make the decision on the rule if the MPCA Commissioner grants your request or if a Board member makes a timely request that the decision be made by the Board. If you have questions regarding the process to have the Board make a decision on a final rule adoption if no hearing is required, or need Board member information, you should contact the Agency contact person identified in this Notice.

Lobbyist Registration. *Minnesota Statutes*, chapter 10A, requires each lobbyist to register with the State Campaign Finance and Public Disclosure Board. You should direct questions about this requirement to the Campaign Finance and Public Disclosure Board at: Suite 190, Centennial Building, 658 Cedar Street, St. Paul, Minnesota 55155, telephone 651-296-5148 or 1-800-657-3889.

Adoption and Review of Rules. If no hearing is required, the Agency may adopt the rules after the end of the comment period. The Agency will then submit the rules and supporting documents to the Office of Administrative Hearings (Office) for review for legality. You may ask to be notified of the date the Agency submits the rules to the Office. If you want to be so notified, or want to receive a copy of the adopted rules, or want to register with the Agency to receive notice of future rule proceedings, submit your request to the Agency contact person listed above.

_____ _____

Date

Brad Moore
Commissioner

Minnesota Pollution Control Agency
General Statement of Need and Reasonableness for
Proposed Amendment to Rules Governing Hazardous Waste
Minnesota Rules, Chapters 7001 and 7045

Table of Contents

I. Introduction and Background

The Minnesota Pollution Control Agency (MPCA) is amending *Minnesota Rules* (Minn. R.) chapters 7001 and 7045 governing permitting, generating, transporting and managing hazardous wastes. The main reason for these amendments is to adopt changes that the U.S. Environmental Protection Agency (EPA) has made to federal hazardous waste regulations in order to maintain Minnesota's (State) hazardous waste program authorization from the EPA. EPA program authorization allows the MPCA to operate its state hazardous waste regulatory program in Minnesota in lieu of the EPA enforcing the federal hazardous waste regulations. In this rulemaking, the MPCA is also adopting some optional federal amendments that the MPCA supports as beneficial for Minnesota. Finally, the MPCA is also making a number of corrections to the existing rules and improving existing rule language.

Congress authorized the EPA to adopt hazardous waste regulations under the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA or non-RCRA). Both of these acts allow a state to operate a state hazardous waste program in lieu of the EPA implementing the federal hazardous waste regulations in that state if the EPA determines that the state's hazardous program is equivalent to and at least as stringent as the federal hazardous waste regulations. When a state applies for EPA program authorization, the EPA must determine whether the state's program is equivalent. If the EPA finds equivalence, the EPA then publishes notice of its authorization determination in the *Federal Register* and incorporates the state's hazardous waste rules by reference into the Code of Federal Regulations (CFR). The EPA has codified Minnesota's equivalent program at Title 40, CFR, Section 272.1201 (40 CFR § 272.1201). However, as the federal regulations are amended, states must reapply for and be granted updated authorization from EPA.

Any amendments to the federal regulations that the EPA promulgates under the authority of RCRA do not go into effect in authorized states until the state adopts the requirement into state rules. Required amendments adopted under the authority of HSWA go into effect in authorized states on the federal effective date, regardless of whether or not the state has adopted them. The result of this is that the majority of the amendments being adopted in this rulemaking have already been in effect in Minnesota (see attachment 6 for list of HSWA amendments). In the case of these types of federal amendments, the only consequences of this rulemaking to the regulated community will be to streamline the hazardous waste facility permitting process by allowing the MPCA to include those requirements in its permit and (currently, the EPA issues a federal permit containing the permit components for which the state does not have authority), and to allow the MPCA to enforce these requirements instead of the EPA.

The EPA frequently amends the federal regulations to enhance environmental protection, to correct errors, or to reduce undue burdens. As the EPA amends its regulations, the MPCA must adopt those changes that increase stringency in order to maintain program equivalence. If the MPCA does not adopt the regulations required to maintain program equivalence, the EPA could withdraw program approval and apply its regulations in Minnesota.

To maintain program equivalence, Minnesota must adopt those federal amendments that increase stringency; however, RCRA allows state programs to be more stringent than the federal program. Therefore, adopting those federal hazardous waste regulations that reduce stringency is optional for states with authorized programs.

Most of the hazardous waste amendments that the MPCA is adopting in this rulemaking increase the level of regulation and, therefore, are required to maintain the EPA's program authorization. For these more stringent new requirements, the MPCA is generally adopting rule language that is identical in substance to the federal amendments, or is incorporating federal rule language by reference.

Some of the hazardous waste amendments that the MPCA is adopting are considered optional by the EPA. Optional means that the regulations are not required to maintain program authorization. The MPCA has determined that certain optional provisions do not provide adequate protection for Minnesota or for other reasons are not appropriate for adoption by Minnesota. In those cases, the MPCA has chosen either not to adopt the optional federal provision, or has proposed revised language that modifies federal provisions in a way that MPCA believes is more protective to human health and the environment. In Attachment 1 (the detailed discussion of each proposed amendment), the MPCA identifies these optional amendments.

Rule Development: The MPCA published advance notice of its intent to amend its hazardous waste rules in the *State Register* on November 12, 2002. The MPCA received no substantive comments in response to that notice, but did add several respondents to its interested parties list. The MPCA did not establish a rule development work group because many of the amendments that the MPCA is adopting in this rulemaking are already in effect federally because the federal regulations were adopted under the authority of HSWA. The MPCA anticipates overall support for this effort to increase consistency between the state and federal programs and to update its hazardous waste rules.

Alternative Format: The MPCA can make this document available in alternative formats such as large print, Braille, or cassette tape. To make a request, please contact Nathan Cooley (651-297-7544) or Carol Nankivel (651-297-8371) at the MPCA, Municipal Division, 520 Lafayette Road North, St. Paul, MN 55155. You may also fax a request to 651-297-8676, or e-mail to nathan.cooley@pca.state.mn.us or carol.nankivel@pca.state.mn.us. TTY users may call the MPCA at 651-282-5332 or 800-657-3864.

II. Statutory Authority

The MPCA's authority to adopt these rules is found in Minn. Stat. § 116.07, the relevant language from which follows:

> ***Subdivision 4. Rules and standards.***
> *[…]*
> *Pursuant to chapter 14, the pollution control agency may adopt, amend, and rescind rules and standards having the force of law relating to any purpose within the provisions of this chapter for generators of hazardous waste, the management, identification, labeling, classification, storage, collection, treatment,*

transportation, processing, and disposal of hazardous waste and the location of hazardous waste facilities. A rule or standard may be of general application throughout the state or may be limited as to time, places, circumstances, or conditions.
[…]

Subdivision 4b. Permits; hazardous waste facilities.
[…]
(b) The agency shall promulgate rules pursuant to chapter 14 for all hazardous waste facilities. The rules shall require:
(1) contingency plans for all hazardous waste facilities which provide for effective containment and control in any emergency condition;
(2) the establishment of a mechanism to assure that money to cover the costs of closure and postclosure monitoring and maintenance of hazardous waste facilities will be available;
(3) the maintenance of liability insurance by the owner or operator of hazardous waste facilities during the operating life of the facility.

Under these statutes, the MPCA has the necessary authority to adopt the proposed rules. Minn. Stat. § 14.125 requires agencies to publish a notice of intent to adopt a rule within 18 months from the effective date of the law authorizing the rulemaking. The statute also provides that if rules are adopted within the deadline, the agency may subsequently amend or repeal the rules without additional legislative authorization. The MPCA's original authority to adopt these rules, and the MPCA's original promulgation of its hazardous waste rules, preceded the requirements of Minn. Stat. § 14.125. Since this rulemaking involves amending existing rules, the deadline in Minn. Stat. § 14.125 does not apply.

III. Need for the Amendments

Minn. Stat. chapter 14 requires the MPCA to make an affirmative presentation of facts establishing the need for and reasonableness of the rules as proposed. In general terms, this means that the MPCA must set forth the reasons for its proposal, and the reasons must not be arbitrary and capricious. However, to the extent that need and reasonableness are separate, need has come to mean that a problem exists which requires administrative attention, and reasonableness means that the proposed solution to that problem is appropriate. The MPCA discusses the general need for the proposed rules below and provides a more detailed discussion in the attachments.

There are two fundamental needs that prompt the amendment of the hazardous waste rules. The first need is to provide clear rules that protect public health and the environment while not unduly burdening the regulated community. The second need for these amendments is to keep Minnesota's hazardous waste rules consistent with the federal hazardous waste regulations in order to maintain the EPA's authorization for Minnesota's hazardous waste program.

With regard to the first need, the need for protective yet reasonable standards, most of the amendments being proposed increase the stringency of Minnesota's hazardous waste rules and

are needed to provide an acceptable level of environmental protection. However, in some cases, the amendments being proposed are based on federal amendments that EPA has promulgated to reduce regulatory burdens while remaining protective of human health and the environment. Since such provisions reduce program stringency, the EPA does not require Minnesota to adopt these to maintain its EPA program authorization. Although the MPCA is not required to adopt these less stringent amendments, the MPCA believes that there is still a valid reason to do so to keep the hazardous waste program as responsive as possible to the concerns of the regulated community while maintaining protection of human health and the environment. The MPCA plans to adopt many of the optional federal regulations because the MPCA has determined that these provisions will still provide adequate protection for human health and the environment while reducing regulatory burdens. For example, one optional federal amendment allows a generator to dispose of certain waste management records after three years instead of five. Although the MPCA has reviewed and considered all of the subject federal amendments, it has determined that in some cases, for economic, legal, policy or administrative reasons, Minnesota's rules need to remain more stringent than the federal regulations, and thus the MPCA will not be adopting all of the optional amendments to the federal regulations. An example of this is the MPCA's decision not to adopt a federal exclusion for hazardous debris in part because of Minnesota's concern that the exclusion may allow mercury containing waste to go to solid waste landfills.

With regard to the second need, the MPCA has received EPA hazardous waste program authorization for Minnesota. This assures a higher degree of consistency with federal regulations, provides access to some additional federal resources, and reduces the need for regulated parties to understand both the federal and the state hazardous waste programs since both the state hazardous waste program and the federal hazardous waste program would apply if Minnesota did not have EPA program authorization. In granting authorization to Minnesota, the EPA has determined that Minnesota's hazardous waste program is equivalent to the federal program. However, because the EPA amends its regulations over time, the EPA must periodically reassess the equivalence of Minnesota's program. In order for Minnesota to maintain the EPA's program authorization, the MPCA must amend its rules to insure that its hazardous waste program is equivalent to and at least as stringent as the federal hazardous waste program. Most of the proposed amendments relating to land disposal restriction listings and standards are examples of federal regulations that must be adopted by the State to maintain program authorization.

The EPA can promulgate its regulatory amendments using either RCRA or HSWA authorities. Regulations that the EPA promulgates using its HSWA authority take effect in all states and territories on their federal effective dates. When the EPA promulgates regulations using its RCRA authority, those RCRA regulations only take effect in states with EPA program authorization (such as Minnesota) when the state adopts them. In order for RCRA amendments to apply in Minnesota, the MPCA needs to adopt them into the State rules.

In this rulemaking the MPCA is adopting a large number of federal provisions that the EPA promulgated under either of its RCRA or HSWA authorities (or in the case of some amendments, both federal authorities). The need for adopting the HSWA-based provisions is not to make them effective in Minnesota, (they already are) but to establish the MPCA's authority to enforce

these provisions by putting the requirements into MPCA rules. Attachment 6 identifies the authority (RCRA or HSWA) under which each of the federal amendments being adopted in this rulemaking were promulgated.

There is a third need for some of the amendments. Minnesota originally adopted the main body of its hazardous waste rules in their current structure in 1984. The MPCA has revised these rules several times since then to incorporate various federal and State amendments. The MPCA has decided that it needs to make extensive changes in this rulemaking to correct errors, clarify existing requirements and in some instances to adopt federal regulations by reference. The regulated community, as well as the MPCA, needs to have rules that are clear, consistent and accurate.

IV. Reasonableness of the Amendments

Minn. Stat. chapter 14 requires the MPCA to make an affirmative presentation of facts establishing the need for and reasonableness of the rules as proposed. In general terms, this means that the MPCA must set forth the reasons for its proposal, and the reasons must not be arbitrary and capricious. However, to the extent that need and reasonableness are separate, need has come to mean that a problem exists which requires administrative attention, and reasonableness means that the solution proposed by the MPCA is appropriate. The MPCA discusses the general reasonableness of the proposed rules below and provides a more detailed discussion of the specific reasonableness of each amendment as it is identified in the rule text in Attachment 1.

The MPCA describes the adopted federal amendments in detail in Attachments 3 and 4. Very briefly, the most significant of the federal amendments being adopted in this rulemaking are amendments to the land disposal restrictions, the organic air emission standards for tanks, surface impoundments and containers at treatment, storage and disposal facilities (TSD's), and changes to the financial assurance standards for TSD facilities.

These major areas of amendment affect many different rule parts, although in most cases, the effect on supporting rule parts is only a correction to cross references or an adjustment of a range of cited rule parts. A number of additional changes are being made to the rules to address State-only concerns regarding the clarity and usefulness of the existing rules. The MPCA is also amending existing rules governing mixtures of hazardous waste (part 7045.0102) and the regulation of PCB wastes (part 7045.0135, subpart 5). In some instances, although it may appear that portions of the existing rules have been deleted, the MPCA is in fact simply replacing most of the deleted provisions by incorporating the corresponding federal regulations by reference. The amendments addressing the lists of hazardous wastes (part 7045.0131 to 7045.0135), and the land disposal restrictions in part 7045.1390, are examples of this type of change.

The MPCA is adopting a number of federal amendments that increase program stringency. It is reasonable for the MPCA to adopt minimum national standards in order to protect human health and the environment, to increase regulatory consistency with the EPA, and to increase rule clarity. These increased program stringency rules are also required for the MPCA to maintain hazardous waste program authorization from EPA. As described more fully in Part III on Need

for the Amendments, the MPCA is committed to maintaining its RCRA-equivalent hazardous waste program. It is reasonable to adopt amendments to the MPCA's rules in order to maintain an equivalent, authorized hazardous waste program from EPA.

Some of the federal amendments being adopted in this rulemaking are a reduction in the current level of regulation. The EPA intends these amendments to reduce regulatory burdens while still remaining protective of human health and the environment. The adoption of these reduced requirements is optional in authorized states such as Minnesota. The MPCA proposes to adopt most of these optional federal provisions. A primary goal of the MPCA's hazardous waste rules is to protect human health and the environment. Although most rules impose some level of burden on the regulated community, the MPCA believes that it is reasonable to reduce regulatory burdens when the remaining provisions adequately protect human health and the environment. In some cases, however, the MPCA has determined that certain optional federal regulations are not adequately protective for Minnesota and has decided not to adopt them into the state rules. Because the MPCA decided not to adopt these optional federal amendments, the MPCA does not discuss in Attachment 1 (the detailed SONAR) the reasonableness of its decision not to amend State rules to include these optional provisions. However, the MPCA has, for informational purposes, made references in Attachment 1 to the MPCA's decision to not adopt a particular optional provision. The reader may find more information regarding the disposition of optional provisions in an amendment in Attachment 4 (Proposed Revision Checklists).

In some cases the MPCA finds it reasonable to regulate more stringently than the EPA in order to protect Minnesota resources or to provide higher protection to human health or the environment. For example, Minnesota has numerous laws designed to protect its rich water resources. In this rule making, the MPCA has added an amendment to the rules to clarify that, while federal hazardous waste regulations reference the possibility of permitting the underground injection of hazardous wastes, existing Minnesota laws prohibit this practice.

The MPCA's rules and the EPA's regulations are different in some areas because the MPCA began promulgating its rules prior to the EPA and evolved a slightly different structure. Where the programs are congruent and when the MPCA intends to follow portions of the federal regulations most closely, the MPCA has successfully incorporated selected federal regulations by reference into existing Minnesota rules.

In this rulemaking, the MPCA continues its use of incorporation by reference. As the MPCA has done in the past, when it incorporates federal regulations by reference, it does this 'as amended.' Incorporation as amended means that any future amendments to the incorporated regulations will become part of Minnesota Rules when the EPA adopts changes. The MPCA has most frequently used this approach in situations where the MPCA agrees with the EPA's approach to the regulation and does not anticipate that future changes would raise concerns for the MPCA. For example, the MPCA has used this approach in the past to incorporate federal regulations related to universal waste, hazardous waste manifests, corrective action management units, temporary units, testing and sampling methodologies, drip pads, and references to the State fire codes or standards of the U.S. Department of Transportation. In this rulemaking, some examples of where the MPCA is incorporating federal regulations as amended are the federal regulations

related to land disposal restrictions, general lists of hazardous wastes and organic air emission standards for tanks, surface impoundments and containers.

When the EPA proposes federal regulations, it follows an open public process that invites national discussion. The MPCA believes that this national-level process will provide adequate and timely notice of any future changes to federal regulations that the MPCA incorporates by reference as amended. If the MPCA disagrees with any of the EPA's proposed future amendments, the MPCA (and the public) can comment on the proposal during the national comment period. Finally, if the MPCA disagrees with any provision of a regulation that the EPA ultimately adopts, the MPCA can amend its rules to provide an exception to that provision and to provide an equivalent or more stringent provision. Further, when MPCA incorporates federal regulations by reference as amended, the MPCA identifies specific exceptions to the incorporation that provides additional protections and reflects State-specific concerns. These exceptions show how the adopted federal regulations fit within Minnesota's regulatory structure in addition to helping the reader understand how Minnesota's rules differ from the federal regulations.

Incorporation by reference is especially appropriate when the State is required to adopt a federal regulation to maintain program authorization as discussed in Part III. When the EPA amends these provisions, RCRA requires the MPCA to amend its rules in order to maintain program equivalence. The MPCA believes that incorporation by reference as amended is a reasonable approach to maintaining its equivalent program, because the alternative would be to incorporate the regulations as of a specific year (e.g., 2007) which would require regulated parties to work from regulations of a specific year (requiring them to keep an older volume of the federal regulations) and would lock the State into rules that may become obsolete as the EPA makes changes to its regulations. The other alternative is for the MPCA to include the federal regulation language into MPCA rules and to amend those rules as often as the EPA makes changes that the MPCA is required to adopt to maintain program authorization. The MPCA does not believe that this is a reasonable alternative given the frequency of changes to the federal regulations and the complexity of Minnesota's rulemaking process. A simple amendment to the State rules takes an average of 18 months from start to finish. Amending the State rules to adopt every change to the federal regulation would mean that the rules were in a nearly constant need of revision. Even with a significant commitment of State resources solely to rulemaking, the rules would still always lag behind the federal counterparts.

The use of incorporation by reference as amended is not limited to incorporating EPA regulations. This practice also helps, for example, to maintain consistency with current versions of referenced fire codes, test methods or transportation requirements. The MPCA believes that it is reasonable to automatically follow the most recently adopted fire codes, test methods or transportation requirements referenced within the hazardous waste rules. Incorporating these types of codes and requirements "as amended" reduces delays in alerting the regulated party of what is required by other regulatory entities. The alternative is to incorporate the standard as of a certain date, or to remain silent on the intended version of the standard. Incorporating these as amended makes it clear that the most recent standard applies.

In this rulemaking the MPCA is also making a number of miscellaneous changes to clarify existing rules and to correct errors and omissions. It is inherently reasonable to correct and clarify rules whenever possible, and it is most reasonable to do this type of rule maintenance as part of a more substantive amendment.

V. Innovative Approaches in this SONAR

Many of the rule changes that the MPCA is making in this rulemaking are equivalent to those that the EPA has already adopted as part of its rulemaking process. The EPA follows a public process to promulgate federal hazardous waste regulations not unlike the process that the MPCA uses to promulgate rules. The EPA publishes proposed regulations in the *Federal Register* for public comment and provides its rationale for adopting or revising proposed regulations. The discussion provided in the *Federal Register*, along with the background documents cited by the EPA, are similar to Minnesota's Administrative Procedure Act requirements to establish the need for and reasonableness of the regulations that the EPA promulgates.

In the past, when the MPCA adopted federal hazardous waste regulations into State rules (whether required or optional to maintain program equivalence), the MPCA drafted a stand alone SONAR document to support the need for and reasonableness of the proposed rules. As a part of the SONAR, the MPCA usually included the relevant *Federal Register* as an exhibit to the rulemaking or summarized in the SONAR some of the information in the relevant *Federal Register*, intending that the technical basis and explanation of reasoning be part of the SONAR of the State amendment. The MPCA recognized and continues to recognize that when adopting rules that are also contained in federal regulations, the *Federal Register* provides the primary basis for the need for and reasonableness of these federal regulatory based amendments. In this rulemaking, the MPCA continues to rely on the discussion provided in the *Federal Register* to establish the reasonableness of the specific rule amendments; however, in this SONAR, the MPCA has greatly reduced the extent to which the MPCA repeats or summarizes the EPA's discussion. When the State either adopts language identical in substance to the federal language or incorporates federal language by reference, this SONAR will reference the EPA's discussion as a substantial part of the State's demonstration of the need for and reasonableness of those amendments. An example and explanation of this method of referencing the federal background follows:

"**36 7001.0635 SPECIFIC PART B INFORMATION REQUIREMENTS FOR**
37 **AIR EMISSION CONTROLS FOR TANKS, SURFACE IMPOUNDMENTS,**
38 **AND CONTAINERS.**
39 Except as otherwise provided in part 7045.0450, owners and operators of tanks, surface impoundments,
40 or containers that use air emission controls in accordance with the requirements of part 7045.0540 must
41 provide the additional information described in items A to G.
42 [In this part, the MPCA adopts a requirement that a permit applicant must submit specific information
43 regarding air emission controls. This requirement corresponds to federal language and is based on
44 required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for

1 Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a); this is justified at 59 FR 62896-
2 62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996. The MPCA chooses
3 to reject the federal use of "shall" in favor of the term "must" which is a convention of Minnesota
4 rulemaking.]//"

As shown in the above extract, the MPCA provides line numbers in the left margin to assist in locating and communicating about particular rule changes. Also, within the body of an extract of rule text, the MPCA inserts a discussion its rationale in bracketed, boldfaced and highlighted text (e.g., **[Example of discussion format.]**). This discussion typically appears immediately following the amended rule language. In these discussions, the MPCA summarizes the changes being made, describes the rationale for State-initiated changes, and identifies language based on specified federal amendments. For changes based on a federal amendment, the discussion also provides a reference to the EPA's "revision checklist number" (herein also called the RCRA Amendment number) that the EPA uses to identify particular amendments to the federal regulations. The MPCA adds a decimal number to some of the RCRA Amendment numbers based on a paragraph number found in the *Federal Register* adopting that provision.

The revision checklists are provided as Attachment 4 to this SONAR and are a useful tool for understanding and tracking the federal amendments. The reader can use the amendment number to search for related documents in this SONAR that provide detailed information regarding the federal authority for a particular provision, whether it is optional or required to maintain authorization, a line-by-line description of where the federal language can be found in both the CFR and the proposed State rules, and information about related amendments. The EPA also uses the revision checklist number to track the status of State authorization for a particular federal provision. The discussion in this SONAR also provides a reference to one or more *Federal Registers* in which the EPA described why the federal amendment was being adopted. The MPCA, by citing to the discussion provided in the appropriate *Federal Registers*, is relying on the EPA's discussion to also support the need for and the reasonableness of the amendment that the MPCA is adopting into the State rules. The MPCA believes that this is a reasonable and efficient way to incorporate existing information without needless duplication of effort.

When the MPCA chooses to significantly diverge from parent federal amendment language (to be more stringent or to improve clarity), the MPCA provides further explanation in addition to the references to the relevant checklists and *Federal Registers*. In other cases, where a rule amendment is not based on a federal amendment, the SONAR will provide the MPCA's justification without reference to a federal amendment number or *Federal Register* citation.

Federal Registers and various other background documents referred to in this SONAR are available in electronic formats from various sources including libraries and online. The decision to rely on the EPA's rationale is supported by the availability of the federal documents and by the similarities between the State and federal processes for promulgating regulations. The MPCA is providing a variety of ways to find and access related federal documents—including posting primary background documents on the MPCA's Web site in order to support the ability of the public to review those documents.

In another innovative approach, the MPCA has structured the SONAR so that the discussion of each individual amendment (including references to the EPA's rationale when appropriate) is provided immediately following the proposed rule language. This sequence of rule language followed by explanation, provided in Attachment 1, shows new language underlined, deleted material ~~stricken~~, and the MPCA discussion **[bracketed, bolded, highlighted]** following each rule change.

One benefit of providing the discussion of reasonableness within an extract of the proposed rule is that it clearly ties the rationale to the proposed change—no small feat in a lengthy rulemaking with hundreds of changes. While the line numbers in the left margin of the extract do not relate directly to the certified (official) rule, they do help readers to identify and communicate about the location of language of interest. Finally, the MPCA is making electronic documents for this rule available that readers with basic skills can search for text of interest. This should prove invaluable due to the amount of text in the rule and associated documents.

Disclaimer: The Office of the Revisor of Statutes provides the electronic rule language extracts used in Attachment 1 (HTML) and Attachment 2 (PDF) to this SONAR in an electronic form that may differ in format and possibly content from the certified printed rule. In addition, the MPCA has modified the extract used for Attachment 1 to improve format and to imbed its discussion of rationale. Although content of these extracts is substantially identical to the official rules, certain special characters, tables or formats may have been changed or lost in converting to the electronic format. A Revisor certified printed version of Minnesota Rules remains the only official version. A certified version is published in the State Register as part of the public notice. This same possibility of errors or emissions applies to any other electronic documents that the MPCA is supplying or referencing to support this rulemaking.

VI. About the Documents Related to the EPA Amendments

The detailed SONAR (Attachment 1) is the key document that addresses the need for and reasonableness of each of the proposed amendments. This Part VI explains the other supporting documents that the reader may find helpful as it reviews the proposed rules and the detailed SONAR.

Each time the EPA significantly amends its rules, it assigns it a "revision checklist number" (herein also called RCRA Amendment number). This number is used throughout this SONAR to direct the reader to information and to associated documents. The MPCA has attached to this SONAR a certified copy of the proposed rule language (Attachment 2), extracts of the EPA revision checklist summaries (Attachment 3), completed draft revision checklists (Attachment 4) (subject to the EPA's review when the MPCA seeks an equivalence determination), the adopting *Federal Registers* for each adopted federal amendment (Attachment 5) and a list of the addressed federal amendments (Attachment 6). The MPCA is placing copies of these key documents on its Web site to support the public notice for this rule: www.pca.state.mn.us.

Readers can access both the CFR (see Title 40, Parts 260-268, 270 and 273, cites provided in Attachment 1 for rule changes based on a federal amendment), and the related *Federal Registers* (cited in Attachment 1), in which the EPA promulgated the subject amendments, through a variety of sources including the Federal Depository Libraries (often larger libraries or university libraries; see www.gpoaccess.gov/libraries.html). The following are links to federal Web sites for the *Federal Registers* (beginning in 1994), for the CFR, and for an EPA hazardous waste authorization Web site respectively: http://www.gpoaccess.gov/fr/index.html, http://www.gpoaccess.gov/cfr/index.html or http://www.epa.gov/epaoswer/hazwaste/state/revision/program.htm. The *Federal Register* also describes where each provision in an amendment would appear in the CFR. After the EPA promulgates its hazardous waste amendments, it places (codifies) the changes into the CFR (the

subject amendments mostly appear in 40 CFR parts 260 to 270). Once codified into the CFR, the changes related to a particular amendment are not readily distinguishable from surrounding text but can be viewed in their final context. The MPCA is also posting copies of key *Federal Registers* and supporting documents on its Web site: http://www.pca.state.mn.us/.

VII. Required SONAR Considerations (Minn. Stat. § 14.131)

Minn. Stat. § 14.131, entitled Statement of Need and Reasonableness, is supported by Minn. Stat. § 14.23, and Minn. R. 1400.2070, and requires the following considerations in a SONAR:

> *By the date of the section 14.14, subdivision 1a, notice, the agency must prepare, review, and make available for public review a statement of the need for and reasonableness of the rule. The statement of need and reasonableness must be prepared under rules adopted by the chief administrative law judge and must include the following to the extent the agency, through reasonable effort, can ascertain this information:*
> *(1) a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;*
> *(2) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;*
> *(3) a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule;*
> *(4) a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule;*
> *(5) the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals;*
> *(6) the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals; and*
> *(7) an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference. Also,*
> *(8) The statement must describe how the agency, in developing the rules, considered and implemented the legislative policy supporting performance-based regulatory systems set forth in section 14.002.*
> *(9) The statement must also describe the agency's efforts to provide additional notification under section 14.14, subdivision 1a, to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made.*
> *(10) The agency must consult with the commissioner of finance to help evaluate the fiscal impact and fiscal benefits of the proposed rule on units of local government.*

(11) The agency must send a copy of the statement of need and reasonableness to the Legislative reference Library when the notice of hearing is mailed under section 14.14, subdivision 1a.

These considerations are addressed below.

1. A description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.

Who is affected? These amendments to existing MPCA rules will affect parties already regulated by the MPCA's hazardous waste rules for generating, storing, transporting, treating, or disposing of hazardous waste and parties who would generate, transport, treat or dispose of hazardous waste in the future. The MPCA estimates that there are approximately 9,400 entities that are currently regulated by Minnesota's hazardous waste rules. The MPCA does not believe that the amendments will cause any change to the existing regulated community.

Who bears the cost? Any added costs to comply with the proposed rule changes will primarily be borne by those persons and entities already subject to regulation by the hazardous waste rules. No new categories of persons subject to the rules are being added by these amendments. For example, a presently regulated party may incur added costs for managing hazardous waste if a rule becomes more stringent. Parties will also bear some administrative costs of learning about and complying with any rule changes. Any increased requirements incrementally change existing rules, so any increase in associated costs should also be incremental. When the EPA promulgated the amendments that the MPCA is adopting, it conducted an economic impact analysis of the costs associated with each amendment. The EPA's determination that any associated costs were not significant is provided in the background discussion in the applicable *Federal Register*. The MPCA believes that the cost to regulated parties of the MPCA adopting the more stringent (and thus required) federal regulations will be minimal.

Thus, the MPCA believes that the adoption of amendments that are: (1) either already in effect through the application of the federal regulations (those adopted under authority of HSWA), (2) that reduce stringency, or (3) that clarify existing rules, and should impose no significant additional costs to the regulated community or may in some instances reduce costs by eliminating duplication and confusion.

Who benefits? If hazardous waste is improperly managed, it can contaminate air, land and water resources, and can result in significant costs to Minnesotans to investigate and remediate the contamination. Since these rules are designed to protect human health and the environment from the improper management of hazardous wastes, the citizens of Minnesota benefit from these rules. Generators, transporters, and owners and operators of hazardous waste facilities also benefit from rules that are clearer and more consistent with federal hazardous waste regulations.

One significant benefit of this rulemaking to the regulated community will be to streamline the hazardous waste facility permitting process by allowing the MPCA to issue and enforce entire

permits. Currently, the EPA issues a federal permit containing the components for which the State does not have authority.

2. The probable costs to the MPCA and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.

What are the costs to the MPCA? The MPCA anticipates that the additional cost of implementing and enforcing the proposed rule changes will be relatively minor. The MPCA will spend some administrative effort to update agency fact sheets to reflect the changes, and to communicate the changes to the regulated community. The number of regulated parties affected by the hazardous waste rules will remain the same, so the MPCA anticipates continuing its compliance and enforcement efforts at the same level using existing staff resources.

What are the costs to other agencies? The MPCA does not anticipate that the rule changes will cause any additional costs to be incurred by other agencies. The rules will have an effect on some agencies to the extent that those agencies are regulated as generators, transporters, or owners or operators of hazardous waste facilities.

What is the effect on State revenue? The MPCA believes that these amendments are revenue neutral (e.g., no positive or negative impact on State revenues).

3. A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule.

Since a primary need for these amendments is to keep Minnesota's rules consistent with a complex and highly-evolved federal hazardous waste program, the MPCA's ability to provide alternatives to these proposed amendments is limited. In addition, the MPCA is incorporating certain federal regulations by reference as an efficient means of keeping its rules current. Certain of the proposed amendments will reduce burdens for some regulated parties. Finally, adopting rules that are clear and consistent with the federal program should ultimately make compliance less costly and less intrusive for regulated parties.

4. A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the MPCA and the reasons why they were rejected in favor of the proposed rule.

Since a primary purpose for the proposed amendments is to keep Minnesota's rules consistent with the federal hazardous waste program, the MPCA's ability to achieve this purpose by alternative methods is highly limited. The MPCA must adopt certain federal amendments in order to maintain its EPA program authorization.

Minnesota could abandon its effort to maintain an equivalent program and its EPA program authorization. In that case, federal amendments would apply in Minnesota in addition to the MPCA's rules. The MPCA believes that providing a single, Minnesota-specific program is better for the regulated community than having to understand two separate programs. To provide a single program that is clear and consistent with the EPA, the MPCA has chosen to

maintain a RCRA-equivalent program—as have the vast majority of U.S. states and territories. The MPCA believes that there is no reasonable alternative to the process prescribed in Title 40, CFR, Part 271, for maintaining its hazardous waste program authorization.

5. The probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals.

The MPCA believes that the cost of complying with hazardous waste rules will not increase substantially as a result of implementing the changes proposed in this rulemaking. The MPCA is primarily adopting EPA amendments to existing federal regulations and making corrections to improve rule clarity. The primary effect of this rulemaking is to keep the rules consistent with the federal regulations and to reduce uncertainty regarding the applicability of the rules.

Regulated parties are already complying with the federal provisions that the EPA promulgated under its HSWA authority because HSWA provisions apply in all states on their federal effective dates.

6. The probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals.

Adopting the proposed rules will keep Minnesota's hazardous waste rules consistent with the EPA's regulations and will reduce duplication of effort and confusion about the rules. If the MPCA failed to adopt the federal amendments and therefore failed to maintain a hazardous waste program equivalent to EPA, the EPA would eventually withdraw its authorization and would enforce the federal hazardous waste regulations in Minnesota. The regulated community would then have to comply with both the MPCA's hazardous waste rules (which would still be in effect) and the EPA's hazardous waste regulations. This could result in increased confusion and regulatory burden for the regulated community.

In addition, there would be no cost saving to the regulated community if the MPCA did not maintain EPA program authorization because federal hazardous waste regulations that were promulgated under authority of RCRA would also be in effect in Minnesota.

7. An assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference.

The proposed rules adopt requirements in federal regulations in order to keep Minnesota's hazardous waste rules consistent with the federal regulations. For most of the amendments, the MPCA is either adopting rule language that is identical in substance to the federal regulations or is incorporating the federal regulations by reference. The MPCA has, in some cases, slightly modified the federal language for consistency with standards or preferences used in Minnesota Rules, while still adhering to the intended federal meaning. Examples of this range from using terms that are unique to Minnesota to regulating Minnesota specific wastes. The MPCA describes these types of changes in its detailed SONAR discussion.

In some cases, the MPCA finds it necessary to intentionally diverge from the federal regulations to provide more stringent protections for Minnesota than offered by the federal program. This type of difference may be the result of the MPCA declining not to amend an existing rule to make it less stringent than the amended federal counterpart or it may be that the MPCA is adding conditions to a federal amendment being adopted in order to increase the level of stringency. In the former case, the MPCA is not required to justify previous rulemaking actions or explain why a less stringent federal amendment is not being adopted. In the later case, the MPCA discusses why it is reasonable to diverge from the federal requirements in the attached detailed SONAR discussion.

The MPCA's hazardous waste program slightly preceded the EPA's. As a result, existing early provisions have equivalent effect but have a different structure than federal program elements that evolved later. The two programs have increasingly converged over time since the MPCA has sought the EPA's program delegation. As a result, adopting the EPA's amendments to more recent provisions generally produces fewer differences.

8. Describe how the MPCA, in developing the rules, considered and implemented the legislative policy supporting performance-based regulatory systems set forth in section 14.002.

Minn. Stat. § 14.002, titled State Regulatory Policy, reads as follows:

> *The legislature recognizes the important and sensitive role for administrative rules in implementing policies and programs created by the legislature. However, the legislature finds that some regulatory rules and programs have become overly prescriptive and inflexible, thereby increasing costs to the state, local governments, and the regulated community and decreasing the effectiveness of the regulatory program. Therefore, whenever feasible, state agencies must develop rules and regulatory programs that emphasize superior achievement in meeting the agency's regulatory objectives and maximum flexibility for the regulated party and the agency in meeting those goals.*

The MPCA's options for considering performance-based standards are limited by the fact that in this rulemaking the MPCA is primarily adopting existing federal regulations necessary to maintain the federal hazardous waste program authorization—which is based on rule equivalence. The MPCA's rules must be least as stringent as the EPA's federal regulations. Equivalence could be lost if the MPCA does not amend its rules in a way that is at least as stringent as federal rules.

The MPCA has demonstrated regulatory flexibility by adopting EPA optional changes that reduce regulatory burdens.

9. Describe the MPCA's efforts to provide additional notification under Minn. Stat. § 14.14, subdivision 1a, to persons or classes of persons who may be affected by the proposed rule or must explain why these efforts were not made.

The MPCA is amending its current hazardous waste rules to maintain consistency with the federal hazardous waste regulations. These amendments do not significantly change the scope and effect of the MPCA's hazardous waste rules. Because the MPCA believes that these amendments are not controversial and are mostly of interest to the existing regulated community, the MPCA believes that regular means of notice, as required by Minn. Stat. § 14.22, will have provided adequate notice to those persons regulated by these proposed rules.

The MPCA plans to publish notice of its intent to adopt these rules in the *State Register* and to mail notices in accordance with Minn. Stat. § 14.22, to people on the MPCA's rulemaking mailing list as described by Minn. Stat. § 14.14, subdivision 1a.

The MPCA published advance notice of its intent to amend its rules in the *State Register* on November 12, 2002. The MPCA received three responses to this notice and placed the respondents on an interested parties mailing list. The MPCA has six other parties on this list from other discussions with outside parties during development of this rulemaking (for a total of nine interested parties). One additional party provided an email address and sought general notice of rulemaking activity but did not provide a standard mailing address. The MPCA will attempt to advise this party by email of the notice.

The MPCA will send a copy of the Notice of Intent to Adopt rules to the following people and organizations:

- All parties who have registered with the MPCA for the purpose of receiving notice of rulemaking proceedings as require by Minn. Stat. § 14.14, subdivision 1a;
- All interested parties who have contacted the MPCA with an interest in this specific rulemaking;
- The interested public. Advice about the notice, proposed rules and SONAR will be posted on the MPCA's Public Notice Web site at (www.pca.state.mn.us). The Web site will link to the Notice as published in the *State Register*, which includes information relevant to the comment period and the identification of a contact person;
- The EPA's Region 5 office in Chicago, IL;
- The environmental departments of the seven counties in the Twin Cities metropolitan area;
- The Minnesota Governor's Office; and
- Minnesota legislators as required by Minn. Stat. § 14.116.

The MPCA plans to provide a comment period of 45 days instead of the minimum 30 days. The proposed amendments are largely based on existing federal regulations, and the MPCA believes that adopting these will not significantly change the scope or effect of Minnesota's hazardous waste rules. However, there are a significant number of amendments, so the MPCA believes that it is reasonable to provide additional time for public review by extending this comment period by five days.

10. Consult with the commissioner of finance to help evaluate the fiscal impact and fiscal benefits of the proposed rule on units of local government.

In accordance with the interim process established by the Department of Finance on June 21, 2004, the MPCA will provide the Department of Finance with a copy of the proposed rule and SONAR at the same time as it sends these to the Governor's Office. This timing allows the fiscal impacts and fiscal benefits of a proposed rule to be reviewed by the Department of Finance concurrent with the Governor's Office review (up to 21 days).

The MPCA does not anticipate that amending its existing hazardous waste rules would substantively impact local units of government. These amendments will not significantly change the universe of those already regulated by this rule or the level of regulation.

11. The MPCA must send a copy of the statement of need and reasonableness to the Legislative Reference Library when the notice of hearing is mailed under Minn. Stat. § 14.14, subdivision 1a.

The MPCA plans to submit all required documentation.

VIII. Other Statutory Considerations

Minnesota Statutes contain several requirements to be addressed by agencies when proposing rules in addition to the required SONAR considerations in Minn. Stat. § 14.131:

1. Impact on Farming Operations per Minn. Stat. § 14.111
2. Legislative Notification per Minn. Stat. § 14.116
3. Consideration of Economic Impacts per Minn. Stat. § 116.07, subdivision 6, and identical provisions in Minn. Stat. § 115.43, subdivision 1
4. Notifying the Commissioner of Transportation per Minn. Stat. § 174.05
5. Cost Thresholds per Minn. Stat. § 14.127, subdivision 1

The MPCA addresses these below:

1. Minn. Stat. § 14.111, titled Farming Operations, requires the following:

> *Before an agency adopts or repeals rules that affect farming operations, the agency must provide a copy of the proposed rule change to the commissioner of agriculture, no later than 30 days prior to publication of the proposed rule in the State Register. A rule may not be invalidated for failure to comply with this section if an agency has made a good faith effort to comply.*

The MPCA believes that adopting rule amendments in order to maintain program equivalence with EPA hazardous waste regulations and to clarify existing rules will have no new impact on agricultural land or farming operations. The MPCA believes that the proposed rules will not negatively impact any farming operations that are required to manage hazardous waste under existing regulations.

2. Minn. Stat. § 14.116, titled Notice to Legislature, requires the following:

> *When an agency mails notice of intent to adopt rules under section 14.14 or 14.22, the agency must send a copy of the same notice and a copy of the statement of need and reasonableness to the chairs and ranking minority party members of the legislative policy and budget committees with jurisdiction over the subject matter of the proposed rules. In addition, if the mailing of the notice is within two years of the effective date of the law granting the agency authority to adopt the proposed rules, the agency shall make reasonable efforts to send a copy of the notice and the statement to all sitting legislators who were chief house and senate authors of the bill granting the rulemaking authority. If the bill was amended to include this rulemaking authority, the agency shall make reasonable efforts to send the notice and the statement to the chief house and senate authors of the amendment granting rulemaking authority, rather than to the chief authors of the bill.*

The MPCA plans to send copies of the notice, the proposed rule, and the SONAR to the chairs and ranking minority members of the Senate Environmental and Natural Resources Committee and the Senate Environment, Agriculture and Economic Budget Division. The MPCA will also copy the chairs and ranking minority members of the House Environment and Natural Resources Policy Committee, and the House Environment and Natural Resources Finance Committee.

This statute provides additional requirements but they do not apply since the MPCA's authority to adopt these rules is found in Minn. Stat. § 116.07, subdivision 4, and is not a new grant of rulemaking authority as addressed by Minn. Stat. § 14.116.

3. Minn. Stat. § 116.07, subdivision 6, and identical provisions in Minn. Stat. § 115.43, subdivision 1, state the following regarding the consideration of economic impacts:

> *In exercising all its powers the pollution control agency shall give due consideration to the establishment, maintenance, operation and expansion of business, commerce, trade, industry, traffic, and other economic factors and other material matters affecting the feasibility and practicability of any proposed action, including, but not limited to, the burden on a municipality of any tax which may result therefrom, and shall take or provide for such action as may be reasonable, feasible, and practical under the circumstances.*

The MPCA sees no substantive economic impacts from adopting the proposed rules. These rules will result in neither substantial cost savings nor substantial additional expenses to the regulated community or to any regulatory agencies. Most of the amendments to the federal regulations that the MPCA is adopting have been in effect in Minnesota and in other states that have already adopted those amendments, often for many years with no significant economic impact. Some minor, indirect cost savings may be realized by regulated parties that benefit from either the

MPCA adopting reduced requirements, or from the improved clarity provided by making corrections or by incorporating certain federal regulations by reference.

4. Minn. Stat. § 174.05, titled Pollution Control Agency; Rules and Standards, provides the following requirements regarding notifying the Commissioner of Transportation:

> *Subdivision 1.* ***Notification by Pollution Control Agency.*** *The commissioner of the Pollution Control Agency shall inform the commissioner of transportation of all activities of the Pollution Control Agency which relate to the adoption, revision, or repeal of any standard or rule concerning transportation established pursuant to section 116.07. Upon notification the commissioner shall participate in those activities. Participation may include, but is not limited to, access to all pertinent information collected or compiled by the Pollution Control Agency and transmittal to the commissioner of the Pollution Control Agency of information and expert opinions concerning the ability of affected modes of transportation to accomplish the desired objectives and the impact that alternative methods of attaining those objectives would have on present or planned transportation systems in the state.*
>
> *Subd. 2.* ***Commissioner to submit review of proposed rules.*** *Prior to public hearings on any rule concerning transportation proposed by the Pollution Control Agency, the commissioner of transportation shall submit a written review of those rules, including an analysis of their impact upon the state's transportation system, and may propose alternative rules or standards. This report shall be made part of the record of the hearing and shall be made available to any person prior to the hearing.*
>
> *Subd. 3.* ***Report by Pollution Control Agency.*** *Upon the adoption, revision or repeal of a rule concerning transportation, the commissioner of the Pollution Control Agency shall publish a written report of the manner in which the adopted rule reflects consideration of the factors specified in section 116.07, subdivision 6, and the specific issues raised in the commissioner of transportation's report.*

The MPCA believes that this rulemaking will present no special concern regarding transportation. However, the MPCA will provide the Commissioner of Transportation notice of the proposed rule amendments. The MPCA has incorporated Minnesota Department of Transportation staff suggestions to update certain outdated references to Department of Transportation regulations.

5. Minn. Stat. § 14.127, titled Legislative Approval Required, subd. 1, Cost thresholds, provides the following requirement:

> *An agency must determine if the cost of complying with a proposed rule in the first year after the rule takes effect will exceed $25,000 for: (1) any one business that has less than 50 full-time employees; or (2) any one statutory or home rule charter city that has less than ten full-time employees. For purposes of this section, "business" means a business entity organized for profit or as a nonprofit, and*

includes an individual, partnership, corporation, joint venture, association, or cooperative.

The MPCA believes that the cost of complying with the proposed amendments in the first year will not exceed the statutory $25,000 cost threshold for any one business with less than 50 full-time employees, or for any one statutory or home rule charter city with fewer than ten full-time employees. The proposed changes mostly amend existing rules incrementally for an existing regulated community. Also, most of the proposed changes already took effect on their federal effective date (those that the EPA promulgated under its HWSA authority). Many of the remaining changes are to improve/clarify existing rule language without changing the effect. Any increased costs should be incremental and minimal. If this cost threshold had been exceeded, the statute provides other requirements for the agency, and potential remedies for affected parties; however, the MPCA does not expect those to apply for this rulemaking.

IX. List of Authors, Witnesses, and Attachments

The following MPCA staff participated in the development of this rulemaking and SONAR:

a. Nathan Cooley, Municipal Division, Land Policy Unit
b. Carol Nankivel, Municipal Division, Land Policy Unit

In support of the need for and reasonableness of the proposed rules, the MPCA anticipates that it will enter the following exhibits into the hearing record:

Attachments:

1. Detailed Discussion of Need for and Reasonableness of Rule Changes.
This is an extract of the proposed rule language with a discussion of the reasonableness of each proposed change.

2. Certified Copy of Rule Language.
This is a certified copy of the proposed rule language.

3. Revision Checklist Summaries of Federal Amendments.
This is a compilation of the EPA summaries that briefly describe the intent and scope of each federal amendment and provide citations to related background documents for amendments addressed in this rulemaking.

4. Proposed Revision Checklists Linking Federal Amendments to Minnesota Rules.
This is a compilation of the numbered EPA checklists for each amendment that tie each adopted federal provision with the corresponding Minnesota rule provision in this rulemaking.

5. Federal Registers Adopting Federal Amendments.
This is a compilation of the *Federal Registers* addressing the amendments where the MPCA is relying on the EPA's explanation for the reasonableness of corresponding federal hazardous waste regulations adopted in this rule.

6. List of Federal Amendments Proposed for Adoption.
This is a table of the federal amendments arranged by revision checklist number showing the federal authority (RCRA or HSWA) and whether the amendment is optional or mandatory to maintain EPA authorization.

X. CONCLUSION

Based on the foregoing, the proposed rules are both needed and reasonable.

_____	_____
Date	Brad Moore Commissioner

Attachment #1—Minnesota Pollution Control Agency
Detailed Statement of Need and Reasonableness

Proposed Amendments to Minnesota Rules Governing Hazardous Waste, Chapters 7001 and 7045

Table of Contents for Attachment #1

Pollution Control Agency Proposed Permanent Rules Relating to Hazardous Waste, Chapters 7001 and 7045

The **[bracketed, bolded, shaded]** discussion following each proposed rule change in the following extract describes the rationale for the proposed changes. This extract of the certified rule may contain errors associated with translation/editing. The certified rule is the official form of the proposed rule.

7001.0150 TERMS AND CONDITIONS OF PERMITS.

[For text of subpart 1, see M.R.]

Subp. 2. **Special conditions.** Each draft and final permit must contain conditions necessary for the permittee to achieve compliance with applicable Minnesota or federal statutes or rules, including each of the applicable requirements in parts 7045.0450 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390, and any conditions that the agency determines to be necessary to protect human health and the environment. If applicable to the circumstances, the conditions must include:

[In subpart 2, the MPCA corrects a citation to a range of rules that changed as parts were added. The MPCA also provides the replacement citation for a repealed range of rules.]//

[For text of items A to D, see M.R.]

Subp. 3. **General conditions.** Unless specifically exempted by statute or rule, each draft and final permit must include the following general conditions and the agency shall incorporate these conditions into all permits either expressly or by specific reference to this part:

[For text of items A to O, see M.R.]

P. Compliance with ~~an~~ a RCRA permit during its term constitutes compliance, for purposes of enforcement, with subtitle C of RCRA except for those requirements not included in the permit which:

[In item P, the MPCA corrects grammar.]//

(1) become effective by statute;

(2) are adopted under ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, restricting the placement of hazardous wastes in or on the land; ~~or~~

[In subitem (2), the MPCA provides the replacement citation for a repealed range of rules.]//

(3) are adopted under parts 7045.0450 to 7045.0551 regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units. The leak detection system requirements include double liners, construction quality assurance programs, monitoring, action leakage rates, and response action plans, and will be implemented through the procedures of part 7001.0730, minor permit modifications; or

[In subitem (3), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

(4) are adopted under parts 7045.0645, 7045.0647, and 7045.0648, limiting air emissions.

[In subitem (4), the MPCA adopts a reference to amendments being adopted in this rulemaking that correspond to the federally required amendments to RCRA regulations titled, "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers," with the EPA assigned RCRA Revision Checklist #154-1, item 34 (abbreviated hereafter in the following format: [required/optional] RCRA Amendment 154-1.34). Adopting this amendment makes this rule provision equivalent to Title 40, Code of Federal Regulations, section 270.4(a)(4) (abbreviated hereafter in the following format: = 40 CFR 270.4(a)(4)). Hereafter, where the MPCA relies on the EPA's amendment rationale to establish the reasonableness of an amendment, the MPCA cites the supporting background discussion in the Federal Register (FR). The reasonableness of this specific amendment is supported at Volume 59, FR, pages 62896-62953 (abbreviated as 59 FR 62896), on December 6, 1994.]//

7001.0501 UNDERGROUND INJECTION.

References to underground injection of waste throughout this chapter are subject to Minnesota statutes and rules prohibiting the discharge of waste or pollutants to the saturated or unsaturated zones.

[In new part 7001.0501, the MPCA clarifies that, despite references to underground injection of waste found in chapter 7045 or incorporated federal regulations, underground injection is also subject to other Minnesota Statutes and Rules that prohibit underground injection of waste or pollutants. For example, part 7060.0100 prohibits the discharge of sewage, industrial waste, or other waste to the saturated zone (groundwater) or unsaturated zone (soil above the water table). The purpose of such a restriction, as stated in part 7060.0100, is to preserve and protect underground waters by preventing pollution. Thus, it is reasonable to include in the hazardous waste rules a clarification that reference to underground injection in chapter 7045 is not only subject to hazardous waste rules but also to other statutes and rules governing underground discharges of waste or pollutants.]//

7001.0520 PERMIT REQUIREMENTS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Termination of eligibility for permit by rule.** The eligibility of an owner or operator of an elementary neutralization unit, a pretreatment unit, a wastewater treatment unit, or a combustion waste facility to be permitted under this part is subject to termination by the agency after notice and opportunity for a contested case hearing or a public informational meeting if the agency makes any of the findings set forth in items A to D. An owner or operator whose eligibility to be permitted under this part has been terminated shall apply for and obtain an individual permit under these parts. The following findings constitute justification for the commissioner to commence proceedings to terminate eligibility:

[For text of items A to C, see M.R.]

D. that under the circumstances, in order to protect human health or the environment, the permitted facility should be subject to the requirements of parts ~~7045.0452 to 7045.0544~~ 7045.0450 to 7045.0551.

[In item D, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

Subp. 5. **Closure by removal.** Owners or operators of surface impoundments, land treatment units, and waste piles closing by removal or decontamination under parts 7045.0552 to ~~7045.0642~~ 7045.0651 must obtain a postclosure permit unless they can demonstrate to the agency that the closure met the requirements for closure by removal or decontamination in part 7045.0532, subpart 7; 7045.0534, subpart 7; or 7045.0536, subpart 8. The demonstration may be made in the following ways:

[In subp. 5, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items A and B, see M.R.]

[For text of subps 6 and 7, see M.R.]

7001.0550 CONTENTS OF PART A OF APPLICATION.

Part A of the application must contain the following information:

[For text of items A to D, see M.R.]

E. a list of the waste designated under parts 7045.0102 to ~~7045.0143~~ 7045.0155 as hazardous to be treated, stored, or disposed of by the applicant and an estimate of the quantity of each hazardous waste to be treated, stored, or disposed of annually by the applicant;

[In item E, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items F to J, see M.R.]

7001.0560 GENERAL INFORMATION REQUIREMENTS FOR PART B OF APPLICATION.

Part B of the application must contain the following information:

[For text of item A, see M.R.]

B. Chemical and physical analyses of the hazardous wastes to be handled at the facility. At a minimum, these analyses must contain all the information that ~~is necessary~~ must be known to treat, store, or dispose of the wastes properly in accordance with parts 7045.0450 to 7045.0551.

[In item B, the MPCA revises language slightly to improve clarity and corrects a citation to a range of rules that changed as parts were added.]//

[For text of items C and D, see M.R.]

E. A copy of the general inspection schedule required by part 7045.0452, subpart 5, item B, including, if applicable, the information in parts 7045.0526, subpart 5; 7045.0528, subpart 7; 7045.0532, subpart 5; 7045.0534, subparts 5 and 6; 7045.0536, subpart 4; 7045.0538, subpart 5; 7045.0539, subpart 3; and 7045.0542, subpart 7; and the process vent and equipment leak standards in Code of Federal Regulations, title 40, sections 264.1033, 264.1052, 264.1053, ~~and~~ 264.1058, as amended, and sections 264.1084, 264.1085, 264.1086, and 264.1088, as incorporated in part 7045.0540.

[In item E, the MPCA adopts cross references to federal regulations relating to Organic Air Emissions that are being adopted in part 7045.0540 and which are based on required RCRA Amendments 154.51 and 154-1.35: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.14(b)(5), and justified at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996; and required RCRA Amendment 163.40: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment" = 40 CFR 270.14(b)(5), and justified at 62 FR 64636-64671, December 8, 1997.]//

[For text of items F to U, see M.R.]

V. For land disposal facilities, if a case-by-case extension has been approved ~~under part 7045.0075, subpart 8~~ by the United States Environmental Protection Agency, under Code of Federal Regulations, title 40, section 268.5, or a petition has been granted under part 7045.0075, subpart 9, a copy of the notice of approval for the extension or petition is required.

[In item V, the MPCA revises language to clarify an existing requirement relating to the granting of case-by-case extensions for land disposal facilities. Only EPA has the authority to issue case-by-case extensions for land disposal facilities because this aspect of the RCRA program is not delegable to the states. In this rulemaking, the MPCA has removed specific references to part 7045.0075, subpart 8, (which formerly directed the reader to the federal requirements) and replaced them with direct citations to the appropriate federal citation. This is a clarifying change that does not alter the effect of the existing rules.]//

7001.0570 PART B INFORMATION REQUIREMENTS FOR FACILITIES THAT STORE CONTAINERS OF HAZARDOUS WASTE.

Except as otherwise provided in part 7045.0526, subpart 1, if the applicant proposes to store containers of hazardous waste, the applicant shall furnish the following information in addition to the information required by part 7001.0560:

[For text of items A to F, see M.R.]

G. Information on air emission controls as required in part 7001.0635.

[In item G, the MPCA adopts cross references to federal regulations relating to organic air emissions that are being adopted in this rulemaking in part 7045.0540 and which are based on required RCRA Amendment 154-1.36: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.15(e); as supported by 59 FR 62896-62953, December 6, 1994. In this rulemaking the MPCA is also revising the adopted federal phrase "emission control equipment" to read "emission controls" because this phrase is already used in existing part 7001.0635, and because this phrase is more descriptive of the content of the rule because the rule also applies to non-equipment types of air emission controls.]//

7001.0580 PART B INFORMATION REQUIREMENTS FOR STORAGE OR TREATMENT TANKS.

Except as otherwise provided in part 7045.0528, subpart 1, if the applicant proposes to use tanks to store or treat hazardous waste, the applicant shall furnish the following information, in writing, in addition to the information required by part 7001.0560:

[For text of items A to H, see M.R.]

I. description of controls and practices to prevent spills and overflows, as required under part 7045.0528, subpart 6, item B; ~~and~~

J. for tank systems in which ignitable, reactive, or incompatible wastes are to be stored or treated, a description of how operating procedures and tank system and facility design will achieve compliance with the requirements of part 7045.0528, subparts 10 and 11 ; and

K. information on air emission controls as required in part 7001.0635.

[The reasonableness of this change is discussed in part 7001.0570, item G above.]//

7001.0590 PART B INFORMATION REQUIREMENTS FOR SURFACE IMPOUNDMENTS.

Except as otherwise provided in part 7045.0532, subpart 1, if the applicant proposes to store, treat, or dispose of hazardous waste in surface impoundment facilities, the applicant shall submit detailed plans and specifications accompanied by an engineering report which collectively includes the following information in addition to the information required by part 7001.0560:

[For text of items A to J, see M.R.]

K. A waste management plan for hazardous waste F028 and treatment residues and soil contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how the surface impoundment is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0532, subpart 10. This plan must address the following items as specified in part 7045.0532, subpart 10:

[In item K, the MPCA replaces a citation to a repealed subpart with the correct, revised citation.]//

[For text of subitems (1) to (4), see M.R.]

[For text of items L and M, see M.R.]

N. Information on air emission controls as required in part 7001.0635.

[The reasonableness of this change is discussed in part 7001.0570, item G above.]//

7001.0600 PART B INFORMATION REQUIREMENTS FOR WASTE PILES.

Except as otherwise provided by part 7045.0534, subpart 1, if the applicant proposes to store or treat hazardous waste in waste piles, the applicant shall furnish the information required by items A to M in addition to the information required by part 7001.0560:

[For text of items A to K, see M.R.]

L. A waste management plan for hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how a waste pile that is not enclosed is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0534, subpart 10. This submission must address the following items as specified in part 7045.0534, subpart 10:

[In item L, the MPCA replaces a citation to a repealed subpart with the correct citation.]//

[For text of subitems (1) to (4), see M.R.]

[For text of item M, see M.R.]

7001.0610 PART B INFORMATION REQUIREMENTS FOR LAND TREATMENT.

Except as otherwise provided by part 7045.0536, subpart 1, if the applicant proposes to use land treatment to dispose of hazardous waste, the applicant shall furnish the information designated in items A to I in addition to the information required by part 7001.0560:

[For text of items A to H, see M.R.]

I. A waste management plan for hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how a land treatment facility is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0536, subpart 11. This plan must address the following items as specified in part 7045.0536, subpart 11:

[In item I, the MPCA replaces a citation to a repealed subpart with the correct revised citation.]//

[For text of subitems (1) to (4), see M.R.]

7001.0620 PART B INFORMATION REQUIREMENTS FOR LANDFILLS.

Except as otherwise provided by part 7045.0538, subpart 1, if the applicant proposes to dispose of hazardous waste in a landfill, the applicant shall furnish the information designated in items A to L in addition to the information required by part 7001.0560:

[For text of items A to I, see M.R.]

J. A waste management plan for hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how a landfill is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0538, subpart 13. This plan must address the following items as specified in part 7045.0538, subpart 13:

[In item J, the MPCA replaces a citation to a repealed subpart with the correct citation.]//

[For text of subitems (1) to (4), see M.R.]

[For text of items K and L, see M.R.]

7001.0630 PART B INFORMATION AND SPECIAL PROCEDURAL REQUIREMENTS FOR THERMAL TREATMENT FACILITIES.

Except as provided in part 7045.0542, subpart 1, if the applicant proposes to treat or dispose of hazardous waste by using thermal treatment, the applicant shall fulfill the requirements of item A, B, or C in addition to the information requirements of part 7001.0560, and the commissioner shall fulfill the requirements of item D:

[For text of items A and B, see M.R.]

C. The applicant shall perform an analysis of each waste or mixture of waste to be treated by using the analytical techniques set forth in the Environmental Protection Agency document SW-846, as ~~referenced~~ incorporated in part 7045.0065, or by using techniques found by the commissioner to be equivalent to them. The applicant shall submit all of the following information:

[In item C, the MPCA adopts language (a hyphen) to make the reference to SW-846 identical to the way the document is cited in the corresponding federal regulations. This change relates to required RCRA amendment 126: "Testing and Monitoring Activities" = 40 CFR 270.19(c)(1)(iii); the EPA's rationale appears in 58 FR 46040-46051, August 31, 1993. In addition, the MPCA changes the terminology from 'referenced' to 'incorporated' to reflect changes made to part 7045.0065. For an explanation of why the terminology has changed, see part 7045.0065.]//

(1) The results of each waste analysis performed, including:

[For text of units (a) to (d), see M.R.]

(e) an approximate quantification of the hazardous constituents identified in the waste, within the precision specified by Environmental Protection Agency document SW-846, as incorporated in part 7045.0065;

[In unit (e), the MPCA adopts language (a hyphen) to make the reference to SW-846 identical to the corresponding federal regulations. This change relates to required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 270.19(c)(1)(iv); as supported at 58 FR 46040-46051, August 31, 1993; as amended at 59 FR 47980-47982, September 19, 1994. The MPCA is also adding a reference to the rule that incorporates the reference documents.]//

[For text of units (f) and (g), see M.R.]

[For text of subitems (2) to (8), see M.R.]

[For text of item D, see M.R.]

7001.0635 SPECIFIC PART B INFORMATION REQUIREMENTS FOR AIR EMISSION CONTROLS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS.

Except as otherwise provided in part 7045.0450, owners and operators of tanks, surface impoundments, or containers that use air emission controls in accordance with the requirements of part 7045.0540 must provide the additional information described in items A to G.

[In this part, the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This requirement corresponds to

federal language and is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a); this is justified at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996. The MPCA chooses to reject the federal use of "shall" in favor of the term "must" which is a convention of Minnesota rulemaking.]//

A. Documentation for each floating roof cover installed on a tank subject to Code of Federal Regulations, title 40, section 264.1084(d)(1) or (d)(2), as incorporated in part 7045.0540, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the applicable design specifications under Code of Federal Regulations, title 40, section 264.1084(e)(1) or (f)(1), as incorporated in part 7045.0540.

[In item A, the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This language is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a); as supported at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996. In this rulemaking the MPCA is also adding a reference to the incorporated federal language and related conditions.]//

B. Identification of each container area subject to the requirements of part 7045.0540 and certification by the owner or operator that the requirements of this part are met.

[In item B , the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This language is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a); as supported at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

C. Documentation for each enclosure used to control air pollutant emissions from tanks or containers in accordance with the requirements of Code of Federal Regulations, title 40, section 264.1084(d)(5) or 264.1086(e)(1)(ii), as incorporated in part 7045.0540, that includes records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under Code of Federal Regulations, title 40, section 52.741, Appendix B, as amended.

[In item C, the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This language is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a); as supported at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996. In this rulemaking the MPCA is also adding a reference to the incorporated federal language and related conditions.]//

D. Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of Code of Federal Regulations, title

40, section 264.1085(c), as incorporated in part 7045.0540, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications under Code of Federal Regulations, title 40, section 264.1085(c)(1), as incorporated in part 7045.0540.

[In item D, the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This language is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a); as supported at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996. In this rulemaking the MPCA is also adding a reference to the incorporated federal language and related conditions.]//

E. Documentation for each closed-vent system and control device installed in accordance with the requirements of Code of Federal Regulations, title 40, section 264.1087, as incorporated in part 7045.0540, that includes design and performance information as specified in Code of Federal Regulations, title 40, section 270.24(c) and (d), as amended.

[In item E, the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This language is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a); as supported at 59 FR 62896-62953; December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996. In this rulemaking the MPCA is also adding a reference to the federal language being incorporated at part 7045.0540.]//

F. An emission monitoring plan for both Code of Federal Regulations, title 40, part 60, Appendix A, Method 21, as amended, and control device monitoring methods. This plan shall include the following information: monitoring points, monitoring methods for control devices, monitoring frequency, procedures for documenting exceedances, and procedures for mitigating noncompliances.

[In item F, the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This language is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a)(6); as supported at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

G. The schedule of implementation required under Code of Federal Regulations, title 40, section 265.1082, as incorporated in part 7045.0645, when an owner or operator of a facility subject to part 7045.0645 cannot comply with part 7045.0540 by the date of permit issuance.

[In item G, the MPCA adopts a requirement that a permit applicant must submit specific information regarding air emission controls. This language is based on required RCRA Amendments 154.52 and 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 270.27(a)(6); as supported at 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996. The MPCA also has added a reference to the federal language being adopted at part 7045.0645.]//

7001.0650 INTERIM STATUS.

Subpart 1. **Qualifying for interim status.** Except as provided in subpart 2, during the period after the submission of Part A of a hazardous waste facility permit application to the Environmental Protection Agency or to the commissioner and before a final determination by the agency on the permit application, the owner or operator of an existing hazardous waste facility or a facility in existence on the effective date of statutory or regulatory amendments under the Resource Conservation and Recovery Act that render the facility subject to the requirement to have a hazardous waste facility permit shall be considered to be in compliance with the requirement to obtain a permit if the commissioner finds that the Environmental Protection Agency has granted the owner or operator interim status or if the commissioner finds:

[For text of item A, see M.R.]

B. that the owner or operator is in compliance with parts 7045.0552 to ~~7045.0642~~ 7045.0651;

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items C and D, see M.R.]

[For text of subps 2 and 3, see M.R.]

Subp. 4. **Prohibitions.** During the interim status period, an owner or operator shall not:

[For text of items A to C, see M.R.]

D. alter a hazardous waste facility in a manner that amounts to a reconstruction of the facility. For the purpose of this part, reconstruction occurs when the capital investment in the modification of the facility exceeds 50 percent of the capital cost of a comparable new hazardous waste facility. Reconstruction does not include changes made solely for the purpose of complying with the requirements of part 7045.0628, subpart 4, for tanks and ancillary equipment, or to treat or store in containers ~~or~~, tanks, or containment buildings hazardous wastes subject to the land disposal restrictions under ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004, if the changes are made solely to comply with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004.

[Subpart 4 prohibits certain activities at unpermitted facilities regulated under interim status. In item D, the MPCA prohibits reconstruction of a facility without obtaining a permit and then identifies certain activities that do not constitute reconstruction. The amendments being made to item D establish the fact that reconstruction does not include changes made to comply with two of the rules being added in this rulemaking. The first reference being added is to the containment building requirements that are being adopted in this rulemaking in part 7045.0650. This change is based on a change identified in required RCRA Amendment 109: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 270.42(e)(3)(ii)(B); as supported at 57 FR 37194-37282, August 18, 1992. Because of organizational differences between the State and federal permit regulations, there is no direct federal counterpart to this subpart of the State rules. The federal counterpart to subpart 4 is found at 270.72(b)(6). Although the MPCA

believes that the addition of this reference to the containment building standards is a reasonable way to address the concerns regarding reconstruction, the reference does not directly correlate to that specific federal regulation. The second amendment to item D provides the replacement citation for a range of rules governing land disposal that is being repealed and amended in this rulemaking.]//

Subp. 5. **Changes during interim status.** Except as provided in item F, an owner or operator who has interim status may conduct the activities prescribed in items A to F.

[For text of items A and B, see M.R.]

C. The owner or operator may add new processes or change the processes for the treatment, storage, or disposal of hazardous waste if, before implementation of the addition or change, the owner or operator submits a revised Part A of the permit application and an explanation of the need for the addition, and if the commissioner approves the addition or change in writing. The commissioner shall approve the addition or change if the commissioner finds that:

[For text of subitem (1), see M.R.]

(2) the addition or change is necessary for the owner or operator to comply with federal, Minnesota, or local requirements, including the interim status standards in parts 7045.0552 to ~~7045.0642~~ 7045.0651.

[In subitem (2), the MPCA corrects a citation to a range of rules that changed as additional parts were added.]//

[For text of items D and E, see M.R.]

F. Except as specifically allowed under this item, changes listed under items A to E may not be made if they amount to reconstruction of the hazardous waste management facility. Reconstruction occurs when the capital investment in the changes to the facility exceeds 50 percent of the capital cost of a comparable entirely new hazardous waste management facility. If all other requirements are met, the following changes may be made even if they amount to reconstruction:

[For text of subitems (1) to (5), see M.R.]

(6) changes to treat or store, in tanks ~~or,~~ containers, or containment buildings, hazardous wastes subject to land disposal restrictions imposed by ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004, provided that ~~the~~ such changes are made solely for the purpose of complying with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004.

[In subitem (6), the MPCA is providing a reference to the containment building requirements that are being adopted in this rulemaking in part 7045.0650. This language is based on required RCRA Amendment 109: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 270.72(b)(6); as supported at 57 FR 37194-37282, August 18, 1992. The MPCA also provides the replacement citation for a repealed range of rules.]//

Subp. 6. **Compliance with interim status standards.** During the interim status period the owner or operator shall comply with the interim status standards in parts 7045.0552 to ~~7045.0642~~ 7045.0651.

[In subpart 6, the MPCA corrects a citation to a range of rules that changed as additional parts were added.]//

Subp. 7. **Termination of interim status.** Interim status terminates automatically when the agency has taken final administrative action on the permit application or when

terminated by Code of Federal Regulations, title 40, section 270.73(c) to (g), as amended. The following constitute justification for the commissioner to commence proceedings to terminate interim status:

[For text of item A, see M.R.]

B. the commissioner finds that the owner or operator is in violation of any of the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651.

[In item B, the MPCA corrects a citation to a range of rules that changed as additional parts were added.]//

7001.0690 EMERGENCY PERMITS.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Requirements.** The emergency permit must incorporate, to the extent possible under the circumstances, all applicable requirements of parts 7001.0500 to 7001.0730, ~~7045.0452 to 7045.0544~~ 7045.0450 to 7045.0551, 7045.0652, and 7045.0655.

[In subpart 6, the MPCA corrects a citation to a range of rules that changed as additional parts were added.]//

[For text of subps 7 and 8, see M.R.]

7001.0700 HAZARDOUS WASTE THERMAL TREATMENT FACILITY PERMITS.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Trial burn plan.** An applicant shall submit to the commissioner a trial burn plan with Part B of the permit application. The trial burn plan must include the following information:

A. the results of an analysis of each waste or mixture of wastes to be burned, that uses the analytical techniques set forth in the United States Environmental Protection Agency document SW-846 as ~~referenced~~ incorporated in part 7045.0065 or that uses analytical techniques found by the commissioner to be equivalent to them. This analysis must include:

[In item A, the MPCA adopts a clarification to more specifically identify the fact that the document SW-846 is incorporated as part of the rules and is not simply referenced. For an explanation for this terminology change, see part 7045.0065.]//

[For text of subitems (1) to (4), see M.R.]

(5) an approximate quantification of the hazardous constituents identified in the waste, within the precision specified by Environmental Protection Agency ~~document~~ publication SW-846, as incorporated in part 7045.0065;

[In subitem (5), the MPCA adopts language (a hyphen) to make the reference to SW-846 identical to the corresponding federal regulations. This change relates to required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 270.62(b)(2)(i)(D); as supported at 58 FR 46040-46051, August 31, 1993. The MPCA is also amending the existing language to more accurately reflect the nature of the document and where it is found in the rules.]//

[For text of items B to I, see M.R.]

[For text of subps 4 to 11, see M.R.]

7001.0710 LAND TREATMENT DEMONSTRATION PERMITS.

Subpart 1. **Letters of approval.** A person who desires to conduct controlled laboratory demonstrations of hazardous waste land treatment for the purpose of collecting preliminary data shall request a letter of approval from the agency.

The agency shall issue a letter of approval if the demonstration will be conducted under supervised conditions in a closed system capable of providing adequate protection to human health and the environment, and if the data obtained will not be used as the only basis for the issuance of a facility permit. The letter of approval must specify the general conditions for conducting demonstrations, the duration of approval, and the specific waste types.

The letter of approval may only provide approval for controlled laboratory demonstrations of hazardous waste treatment and does not provide exemptions from the hazardous waste management and disposal requirements of chapter 7045. Materials resulting from the demonstration that meet the criteria of parts 7045.0102 to ~~7045.0143~~ 7045.0155 must be managed as hazardous waste.

[In subpart 1, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subps 2 to 6, see M.R.]

7001.0730 MODIFICATION OF PERMITS; REVOCATION AND REISSUANCE OF PERMITS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Minor modifications of permits.** In addition to the corrections or allowances listed in part 7001.0190, subparts 2 and 3, if the permittee consents, the commissioner may modify a permit to make the corrections or allowances listed below without following the procedures in parts 7001.0100 to 7001.0130:

[For text of items A to K, see M.R.]

L. to allow treatment of hazardous wastes not previously specified in the permit if the following conditions are met:

(1) the hazardous waste has been prohibited from one or more methods of land disposal under ~~parts 7045.1320 to 7045.1330~~ Code of Federal Regulations, title 40, sections 268.30 to 268.39, as incorporated in part 7045.1390, or RCRA section 3004;

[In subitem (1), the MPCA replaces references to rules being repealed in this rulemaking with citations to the corresponding federal land disposal restrictions that are being incorporated in part 7045.1390.]//

(2) treatment is in accordance with ~~part 7045.1310~~ Code of Federal Regulations, title 40, section 268.4, as incorporated in part 7045.1390, if applicable, and ~~part 7045.1305~~ section 268.3, as incorporated in part 7045.1390, and applicable standards established under ~~parts 7045.1355 to 7045.1360 and part 7045.0075, subpart 10~~ Code of Federal Regulations, title 40, sections 268.41 to 268.49, and 268.5, as incorporated in part 7045.1390, or, where no treatment standards have been established, treatment renders the waste no longer subject to the applicable prohibitions of ~~part 7045.1330~~ Code of Federal

Regulations, title 40, section 268.32, as incorporated in part 7045.1390, or RCRA section 3004;

[In subitem (2), first, the MPCA replaces several cites to rules that are being repealed in this rulemaking with new cites to the corresponding federal land disposal restrictions being incorporated by reference in this rulemaking. Also, the MPCA deletes a reference to part 7045.0075, subpart 10 because the MPCA no longer has a cross reference to the EPA petition process for alternative treatment standards. The EPA petition process is contained in 40 CFR 268.44 which is added above.]//

[For text of subitems (3) and (4), see M.R.]

M. to allow permitted facilities to change their operations to treat or store hazardous wastes subject to land disposal restrictions imposed by ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004, provided the treatment or storage occurs in containers or tanks and the permittee:

[In item M, the MPCA provides the replacement citation for a repealed range of rules.]//

(1) requests a major permit modification under subparts 1 to 3;

(2) demonstrates in the request for a major permit modification that the treatment or storage is necessary to comply with the land disposal restrictions of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004; and

[In subitem (2), the MPCA provides the replacement citation for a repealed range of rules.]//

(3) ensures that the treatment or storage units comply with the applicable standards of parts 7045.0552 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390 pending final administrative disposition of the major modification request. The authorization to make the changes conferred in this item terminates upon final administrative disposition of the permittee's major modification request under subparts 1 to 3 or termination of the permit under part 7001.0180.

[In subitem (3), the MPCA corrects a citation to a range of rules that changed as parts were added. The MPCA also provides the replacement citation for a repealed range of rules.]//

[For text of subps 5 and 6, see M.R.]

7045.0020 DEFINITIONS.

[For text of subps 1 to 9a, see M.R.]

Subp. 9b. **Combustible liquid.** "Combustible liquid" has the meaning given in Code of Federal Regulations, title 49, section ~~173.115~~ 173.120, paragraph (b), as amended.

[In subpart 9b, following advice from the Minnesota Department of Transportation, the MPCA provides a corrected citation to a transportation related regulation.]//

[For text of subps 9c to 11, see M.R.]

Subp. 11a. **Containment building.** "Containment building" means a hazardous waste management unit that is used to store or treat hazardous waste under the provisions of parts 7045.0550 and 7045.0649.

[In subpart 11a, the MPCA adopts a definition of a containment building that is equivalent to the definition in 40 CFR 260.10. A definition is needed because the MPCA is amending its rules in parts 7045.0550 and 7045.0650 to incorporate federal

regulations on the storage of hazardous waste in containment buildings. It is reasonable to have the same definition that is in the federal regulations when the MPCA is adopting the same substantive standards as the EPA for containment buildings. This language is based on required RCRA Amendment 109.4: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 260.10; as supported at 57 FR 37194-37282, August 18, 1992.]//

[For text of subps 12 to 22a, see M.R.]

Subp. 22b. **Excluded scrap metal.** "Excluded scrap metal" means processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal.

[In subpart 22b, the MPCA adopts a definition of excluded scrap metal. This definition corresponds to a federal definition found at 40 CFR 261.1(c)(9). Adopting this definition is not required to maintain program authorization from EPA, but the MPCA believes it is reasonable to adopt into the State rules to provide clarification of the regulation of this type of scrap and also to maintain consistency between the State and federal regulations. This language is based on optional RCRA Amendment 157.4: "Land Disposal Restrictions Phase IV--Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions" = 40 CFR 261.1(c)(9); as supported at 62 FR 25998-26040, May 12, 1997.]//

Subp. 22c. **Existing drip pad.** "Existing drip pad" means a drip pad that:

A. is or was used to manage hazardous waste with the waste code of F032 and was constructed, or for which the owner or operator had a design and had entered into binding financial or other agreements for construction, before December 6, 1990; or

B. is used to manage hazardous waste with the waste code of F034 or F035 and was constructed, or for which the owner or operator had a design and had entered into binding financial or other agreements for construction, before July 25, 1994.

[In subpart 22c, the MPCA revises rule numbering to accept added subparts.]//

Subp. ~~22c.~~ 22d. **Existing hazardous waste management facility or existing facility.** "Existing hazardous waste management facility" or "existing facility" means a facility which was in operation or for which construction commenced on or before November 19, 1980. See subpart 10b for definition of "construction commenced."

[In subpart 22d, the MPCA revises rule numbering to accept added subparts.]//

[For text of subps 23 to 24a, see M.R.]

Subp. 24b. **Flammable liquid.** "Flammable liquid" has the meaning given in Code of Federal Regulations, title 49, section ~~173.115~~ 173.120, as amended.

[In subpart 24b, following advice from the Minnesota Department of Transportation, the MPCA provides a corrected citation to transportation related regulations.]//

[For text of subps 25 to 30, see M.R.]

Subp. 31. **Generator.** "Generator" means any person, by site, whose act or process produces hazardous waste identified or listed in parts 7045.0102 to ~~7045.0143~~ 7045.0155, or whose act first causes a hazardous waste to become subject to regulation. "Generator" means all size generators including large quantity generators, small quantity generators, and very small quantity generators, unless specifically stated otherwise.

[In subpart 31, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subps 32 to 37, see M.R.]

Subp. 37a. **Home scrap metal.** "Home scrap metal" means scrap metal as generated by steel mills, foundries, and refineries, such as turnings, cuttings, punchings, and borings.

[In subpart 37a, the MPCA adopts a federal definition of home scrap metal that corresponds to language found at 40 CFR 261.1(c)(11). Adopting this definition is not required in order to maintain program authorization from the EPA, but the MPCA believes that it is reasonable to adopt into the State rules to maintain consistency with these federal regulations. This language is based on optional RCRA Amendment 157.4: "Land Disposal Restrictions Phase IV--Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions" = 40 CFR 261.1(c)(11); as supported at 62 FR 25998-26040, May 12, 1997.]//

Subp. 37b. **Household.** "Household" has the meaning given in Minnesota Statutes, section 115A.96, subdivision 1, paragraph (a).

Subp. ~~37b.~~ 37c. **Household battery.** "Household battery" means a disposable or rechargeable dry cell, generated by a household and commonly used as a power source for household products. "Household battery" includes nickel-cadmium, alkaline, mercuric oxide, silver oxide, zinc oxide, zinc-air, lithium, and zinc-carbon batteries, but excludes lead-acid batteries.

Subp. ~~37c.~~ 37d. **Household hazardous waste.** "Household hazardous waste" has the meaning given in Minnesota Statutes, section 115A.96, subdivision 1, paragraph (b).

Subp. ~~37d.~~ 37e. **Household hazardous waste collection site or collection site.** "Household hazardous waste collection site" or "collection site" as used in part 7045.0310 has the meaning established under Minnesota Statutes, section 115A.96, subdivision 1, paragraph (c).

Subp. ~~37e.~~ 37f. **Household waste.** "Household waste" means any material including garbage, trash, and sanitary waste in septic tanks derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

[In subparts 37b to 37f, the MPCA revises rule numbering to accept added subparts.]//

[For text of subps 38 to 45, see M.R.]

Subp. 45a. [See repealer.]

[In subpart 45a, the MPCA is repealing the definition of "inorganic solid debris" because this term is no longer used in chapter 7045. This term may have been used in a rule that was previously repealed. Because this term is not used in the current rules, it is reasonable to remove it from the definitions. This change is consistent with required RCRA Amendment 109: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 268.2(h); as supported at 57 FR 37194-37282, August 18, 1992.]//

[For text of subps 45b to 64a, see M.R.]

Subp. 65. **Partial closure.** "Partial closure" means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of parts 7045.0450 to ~~7045.0642~~ 7045.0651 at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank,

including its associated piping and containment systems, a landfill cell, surface impoundment, waste pile, or other hazardous waste management unit, while other units of the same facility continue to operate.

[In subpart 65, the MPCA corrects citations to ranges of rules that changed as parts were added.]//

[For text of subps 66 to 69, see M.R.]

Subp. 70. **Pile.** "Pile" means any noncontainerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage and that is not a containment building.

[In subpart 70, the MPCA adds a reference to "containment buildings" to this existing definition in order to maintain equivalency with the corresponding federal regulation found at 40 CFR 260.10. This change is based on required RCRA Amendment 109.4: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 260.10; as supported at 57 FR 37194-37282, August 18, 1992.]//

[For text of subps 70a to 71, see M.R.]

Subp. 71a. **Polychlorinated biphenyls, PCB, or PCB's.** "Polychlorinated biphenyls," "PCB," or "PCB's" ~~are halogenated organic compounds defined~~ have the meaning given "PCB" in ~~accordance with Code of Federal Regulations, title 40, section 761.3, as amended~~ Minnesota Statutes, section 116.36, subdivision 4.

[In subpart 71a, the MPCA revises this definition to include the abbreviation "PCB" and to clarify that "PCB," "PCB's" and "Polychlorinated Biphenyls" mean "PCB" as defined in Minnesota Statutes section 116.36, subdivision 4, in lieu of the previously referenced definition from the federal Toxic Substance Control Act regulations. Since the term PCB is already defined in the Minnesota Statutes that govern the management of PCB's as hazardous wastes, it is reasonable to use the same Minnesota definition for purposes of Minnesota's hazardous waste rules that govern the management of PCB's. The MPCA removes the phrase, "halogenated organic compounds" as superfluous to the statutory definition. The style used by the Office of the Revisor of Statutes is that plurals of abbreviations or acronyms are made by adding an apostrophe followed by a lower case "s" (e.g., PCB's is plural of PCB in State rules).]//

Subp. 72. **Pretreatment unit.** "Pretreatment unit" means a device which:

[For text of item A, see M.R.]

B. receives and treats or stores an influent wastewater which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; and

[In item B, the MPCA corrects 3 citations to ranges of rules that changed as parts were added.]//

C. meets the definition of "tank" as defined in subpart 90.

[For text of subp 72a, see M.R.]

Subp. 72b. **Processed scrap metal.** "Processed scrap metal" means scrap metal that has been manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal

includes, but is not limited to, scrap metal that has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted) and fines, drosses, and related materials that have been agglomerated. Shredded circuit boards being sent for recycling are not processed scrap metal. When recycled, shredded circuit boards are governed by part 7045.0125, subpart 4, item P.

[In subpart 72b, the MPCA adopts a definition of processed scrap metal that corresponds to 40 CFR 261.1(c)(10). Adopting this definition is not required to maintain program authorization from EPA, but the MPCA believes that it is reasonable to adopt into the State rules to provide clarification of the regulation of this type of scrap metal and also to maintain consistency between the State and federal regulations. This change is based on optional RCRA Amendment 157.4: "Land Disposal Restrictions Phase IV--Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions" = 40 CFR 261.1(c)(10); as supported at 62 FR 25998-26040, May 12, 1997. The adopted definition is slightly modified from the equivalent federal regulation because the MPCA does not use the same approach as the federal regulations to define "solid waste." As a result, the MPCA does not adopt the portion of the federal definition that removes "processed scrap metal" from the definition of solid waste. In Minnesota, this material remains a hazardous waste that is excluded only if recycled.]//

Subp. 72c. **Prompt scrap metal.** "Prompt scrap metal" means scrap metal as generated by the metal working or fabrication industries and includes such scrap metal as turnings, cuttings, punchings, and borings. Prompt scrap metal is also known as industrial or new scrap metal.

[In subpart 72c, the MPCA adopts a definition of "prompt scrap metal that corresponds to the federal definition at 40 CFR 261.1(c)(12). The MPCA is not required to adopt this definition to maintain program equivalence, but the MPCA believes it is a reasonable addition to the State rules to more clearly address the regulation of this type of scrap and to maintain consistency with federal regulations. This change is based on optional RCRA Amendment 157.4: "Land Disposal Restrictions Phase IV--Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions" = 40 CFR 261.1(c)(12); 62 FR 25998-26040; May 12, 1997.]//

[For text of subps 73 to 84, see M.R.]

Subp. 84a. **Sorbent or sorb.** "Sorbent" means a material that is used to soak up free liquids by either adsorption or absorption, or both. "Sorb" means to either adsorb or absorb, or both.

[In subpart 84a, the MPCA adopts a definition of "sorbent or sorb" that is referred to in the requirements that apply to hazardous waste liquids. This definition is the same as the federal definition in 40 CFR 260.10. This change is based on required RCRA Amendment 118.2: "Liquids in Landfills II" = 40 CFR 260.10; as supported at 57 FR 54452-54461, November 18, 1992.]//

Subp. 84b. **Speculative accumulation.** "Speculative accumulation" means accumulation of a hazardous waste before it is recycled. Speculative accumulation does

not include accumulation of a waste if there is a feasible method of recycling for the waste and at least 75 percent by volume or weight of the waste is recycled during a calendar year. The 75 percent requirement applies to each waste of the same type that is recycled in the same way.

Subp. ~~84b.~~ 84c. **Spent material.** "Spent material" means a material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing.

[In subparts 84b and 84c, the MPCA revises rule numbering to accept added subparts.]//

[For text of subps 85 to 98a, see M.R.]

Subp. 98b. **Underlying hazardous constituent.** "Underlying hazardous constituent" means any constituent listed in Code of Federal Regulations, title 40, section 268.48, Table UTS - Universal Treatment Standards, as incorporated in part 7045.1390, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards.

[In subpart 98b, the MPCA adopts the federal definition of "underlying hazardous constituent" found at 40 CFR 268.2(i). The EPA requires the MPCA to adopt this definition in order to maintain program equivalence. The federal definition was the result of the following several amendments to the federal regulations:

- **required RCRA Amendment 124.2: "Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated" = 40 CFR 268.2(i); as supported at 58 FR 29860-29887, May 24, 1993;**
- **required RCRA Amendment 137.4: "Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes" = 40 CFR 268.2(i); as supported at 59 FR 47982-48110, September 19, 1994, as amended at 60 FR 242-302, January 3, 1995;**
- **required RCRA Amendment 151: "Land Disposal Restrictions Phase III-Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners" = 40 CFR 268.2(i); as supported at 61 FR 15566-15660, April 8, 1996; as amended at 61 FR 15660-15668, April 8, 1996; 61 FR 19117, April 30, 1996; 61 FR 33680-33690, June 28, 1996; 61 FR 36419-36421, July 10, 1996; 61 FR 43924-43931, August 26, 1996; and 62 FR 7502-7600, February 19, 1997; and**
- **required RCRA Amendment 167A: "Land Disposal Restrictions Phase IV–Treatment Standards for Metal Wastes and Mineral Processing Wastes" = 40 CFR 268.2(i); as supported at 63 FR 28556-28753, May 26, 1998.]//**

Subp. 98c. **Unfit for use tank system.** "Unfit for use tank system" means a tank system that has been determined through an integrity assessment or other inspection to be no longer capable of storing or treating hazardous waste without posing a threat of release of hazardous waste to the environment.

Subp. ~~98c.~~ 98d. **Universal waste.** "Universal waste" has the meaning given at Code of Federal Regulations, title 40, section 273.9.

Subp. ~~98d.~~ 98e. **Universal waste handler.** "Universal waste handler" has the meaning given at Code of Federal Regulations, title 40, section 273.9.

Subp. ~~98e.~~ 98f. **Universal waste transporter.** "Universal waste transporter" has the meaning given at Code of Federal Regulations, title 40, section 273.9.

[In subparts 98c to 98f, the MPCA revises rule numbering to accept added subparts.]//

[For text of subps 99 to 102b, see M.R.]

Subp. 102c. **Wastewater.** "Wastewater" means waste that contains less than one percent by weight total organic carbon (TOC) and less than one percent by weight total suspended solids (TSS), with the following exceptions:

A. F001, F002, F003, F004, or F005 wastewaters are solvent-water mixtures that contain less than one percent by weight total organic carbon or less than one percent by weight total F001, F002, F003, F004, or F005 solvent constituents listed in ~~part 7045.1355~~ Code of Federal Regulations, title 40, section 268.40, as incorporated in part 7045.1390;

[In item A, the MPCA is replacing a reference to a State rule repealed in this rulemaking with a citation to the equivalent federal regulation being incorporated by reference in this rulemaking. The MPCA also describes where it incorporates the federal language.]//

[For text of items B and C, see M.R.]

Subp. 103. **Wastewater treatment unit.** "Wastewater treatment unit" means a device which:

[For text of item A, see M.R.]

B. receives and treats or stores an influent wastewater which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; and

[In item B, the MPCA corrects 3 citations to ranges of rules that changed as parts were added.]//

[For text of item C, see M.R.]

[For text of subps 104 to 109, see M.R.]

7045.0065 INCORPORATION AND AVAILABILITY OF REFERENCES.

The documents referred to in this ~~chapter may be obtained by contacting the appropriate offices as listed in this part.~~ part are incorporated by reference. The documents are not subject to frequent change, unless otherwise noted, and are available online or through the Minitex interlibrary loan system, unless otherwise noted:

[The MPCA is revising part 7045.0065 "Availability of References," to incorporate by reference in item D below, the documents found in 40 CFR 260.11, (References to Standard Methods, as amended). Because this incorporation by reference is to a more comprehensive list of documents, the MPCA is also repealing existing items below that are either already addressed by the incorporated references listed in 40 CFR 260.11, or that are no longer referenced in the State rules. The MPCA is also revising the numbering to accept added items. Because certain of the referenced documents are not widely published, the MPCA has filed copies of those documents

with Minnesota's State Law Library, as required by Minnesota's Administrative Procedures Act, to assure their availability.]//

~~A. standards of the American Society for Testing and Materials, in the Annual Book of ASTM Standards, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, available at the Engineering Library of the University of Minnesota;~~

[The MPCA is removing this reference because references to the ASTM standards pertinent to this rule are now found in the newly incorporated federal references in 40 CFR 260.11.]//

~~B. Minnesota Uniform Fire Code, as incorporated by reference in part 7510.3510;~~

[The MPCA is removing this reference because it is not needed. Each reference to the Minnesota Uniform Fire Code found in these rules is accompanied by the statement, "as incorporated by reference in part 7511.0090," which references the current proper citation.]//

~~C.~~ A. the implicit price deflator for gross ~~national~~ domestic product ~~in~~ from the ~~Survey of Current Business,~~ Bureau of Economic Analysis, United States Department of Commerce~~, 110 4th Street South, Minneapolis, Minnesota 55401, available at the Saint Paul Public Library~~. This document is subject to frequent change and is readily available at the Bureau of Economic Analysis Web site: www.bea.gov;

[In former item C, now item A, the MPCA deletes an obsolete address for obtaining this document. The document is subject to frequent changes and a current version is readily available at the U.S. Department of Commerce's Bureau of Economic Analysis Web site: www.bea.gov**. Also, the MPCA is revising the term "gross national product" to the current federal replacement term, "gross domestic product."]//**

~~D. The Manual on Disposal of Refinery Wastes, volume 1, issued by the American Petroleum Institute, (Washington, D.C., 1969), available at the state of Minnesota Law Library;~~

[The MPCA repeals the language in former item D because it is no longer necessary to incorporate this reference in the State rules. This manual was formerly identified in conjunction with a waste listed in part 7045.0135, subpart 3, item G, subitem (4). In the amendments to part 7045.0135, the MPCA incorporates the federal lists of hazardous waste by reference. In the incorporated federal lists, there is no longer a reference to this manual.]//

~~E. Methods for Chemical Analysis of Water and Wastes, publication number 600/4-79-020, March 1979, issued by the Environmental Monitoring and Support Laboratory, 26 West St. Clair, Cincinnati, Ohio 45268, available at the state of Minnesota Law Library;~~

[The MPCA is removing the reference to Methods for Chemical Analysis of Water and Wastes, in old item E because this method is no longer found to be referenced in these rules.]//

~~F. Standard TM-01-69 of the National Association of Corrosion Engineers, P.O. Box 218340, Houston, Texas 77218, available at the state of Minnesota Law Library;~~

[The MPCA is removing the reference to Standard TM-01-69 in old item F because this method is included in the standardized "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication number SW-846, that the MPCA incorporates through item D of this part.]//

~~G. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, publication number SW-846 (Second Edition, 1982, as amended by Update I, April 1984, and Update II, April 1985) of the Office of Solid Waste, United States Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460. The Second Edition of SW-846 and Updates I and II available at the Minnesota Law Library and from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161, (703) 487-4600 as Document number PB 87-120-291;~~

[The MPCA is removing old item G because the MPCA now incorporates this reference, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication number SW-846, through item D of this part.]//

~~H.~~ B. the most recent edition of the Uniform Customs and Practice for Documentary Credits ~~(Publication 290), 1975:~~, published by the International Chamber of Commerce ~~Publishing Corporation, Incorporated, 156 5th Avenue, Suite 820, New York, New York 10017~~; ~~and~~

[The MPCA revises former item H, new item B, both to cite the most recent edition and to remove information about an address provided for obtaining the referenced material. Since physical addresses are subject to periodic change, the MPCA believes that it is reasonable to provide the document title and publisher information from which a reader may obtain the document. The reader can obtain the document through a library or by use of the internet. The MPCA corrects this reference to cite the most recent edition of the referenced material as this is what was intended by the existing rule language found in part 7045.0524.]//

~~I.~~ C. Standard Industrial Classification Manual issued by the Office of Management and Budget, Executive Office of the President of the United States~~, available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161~~ (1987); and

[The MPCA revises former item I, new item C, to remove information about an address provided for obtaining the referenced material. Since physical addresses are subject to periodic change, the MPCA believes that it is reasonable to provide the document title and publisher information from which a reader may obtain the document. The reader can obtain the document through a library or by use of the internet. The standard means for ordering this document is online via the publisher's Web site.]//

D. the documents found in Code of Federal Regulations, title 40, section 260.11, as amended.

[In added item D, the MPCA incorporates by reference the documents found in 40 CFR 260.11, "References to Standard Methods," as amended. Various State rules, many of which are based on federal regulations, refer to the federal standards or test methods. Since they can change over time, it is reasonable to make rules that incorporate the latest standards and test methods. The items incorporated by reference are either common and widely available, or the MPCA has filed copies with Minnesota's State Law Library to assure their availability. Item D includes language from the following RCRA amendments and results in equivalence to the language found in 40 CFR 260.11:

- **required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 260.11(a); as supported at 58 FR 46040-46051, August 31, 1993. This is**

related to former item G.;

- **required RCRA Amendment 128: "Wastes From the Use of Chlorophenolic Formulations in Wood Surface Protection" = 40 CFR 260.11(a); as supported at 59 FR 458-469, January 4, 1994;**
- **required RCRA Amendment 132: "Wood Surface Protection; Correction" = 40 CFR 260.11(a); as supported at 59 FR 28484, June 2, 1994; and**
- **required RCRA Amendment 154-1.6-7: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 260.11(a-b); as supported at 59 FR 62896-62953, December 6, 1994.]//**

7045.0071 UNDERGROUND INJECTION.

References to underground injection of waste throughout this chapter are subject to Minnesota statutes and rules prohibiting the discharge of waste or pollutants to the saturated or unsaturated zones.

[In new part 7045.0071, the MPCA clarifies that, despite references to underground injection of waste found in chapter 7045 or in incorporated federal regulations, underground injection is also subject to other Minnesota statutes and rules that prohibit underground injection of waste or pollutants. For example, part 7060.0100 prohibits the discharge of sewage, industrial waste, or other waste to the saturated zone (groundwater) or unsaturated zone (soil above the water table). The purpose of such a restriction, as stated in part 7060.0100, is to preserve and protect underground waters by preventing pollution. Thus, it is reasonable to include in the hazardous waste rules a clarification that reference to underground injection in chapter 7045 is not only subject to hazardous waste rules but also to other statutes and rules governing underground discharges of waste or pollutants.]//

7045.0075 PETITIONS.

Subpart 1. **Petitions for equivalent testing or analytical methods.** Any person seeking to use a testing or analytical method other than those described in parts 7045.0102 to ~~7045.0143,~~ 7045.0155 or 7045.0450 to ~~7045.0642~~ 7045.0651 may petition under these provisions. The person must demonstrate to the satisfaction of the commissioner that the proposed method is equal to or superior to the corresponding method prescribed in parts 7045.0102 to ~~7045.0143,~~ 7045.0155 or 7045.0450 to ~~7045.0642~~ 7045.0651 in terms of its sensitivity, accuracy, precision, and reproducibility. Each petition must include:

[In subpart 1, the MPCA corrects six citations to ranges of rules that changed as parts were added.]//

[For text of items A to D, see M.R.]

E. comparative results obtained from using the proposed method with those obtained from using the relevant or corresponding methods prescribed in parts ~~7045.0100~~ 7045.0102 to ~~7045.0143,~~ 7045.0155 or 7045.0450 to ~~7045.0642~~ 7045.0651;

[For text of items F and G, see M.R.]

After receiving a petition for an equivalent testing or analytical method, the commissioner may request any additional information on the proposed method which the commissioner may reasonably require to evaluate the method.

Subp. 2. **Petitions to exclude a waste produced at a particular facility.** Petitions to exclude a waste produced at a particular facility are as follows:

[For text of items A to D, see M.R.]

E. If the waste is listed with code "T" in part 7045.0135, subitems (1) to (4) apply.

(1) The petitioner must demonstrate that the waste:

(a) does not contain the constituent or constituents in part 7045.0141 that caused the agency to list the waste, using the appropriate test methods prescribed in ~~Code of Federal Regulations, title 40, part 261, appendix III, as amended~~ "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0065, item D; or

[In unit (a), the MPCA revises the rules to include a specific reference to part 7045.0141, where the hazardous constituent list is located, so that it can be easily found. The MPCA also provides the name and revised citation for the appropriate test method that was formerly located in repealed 40 CFR part 261, Appendix III, but which is now at 40 CFR 260.11, which the MPCA has incorporated by reference at part 7045.0065, item D. This change relates to required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 260.22(d)(1)(i); as supported at 58 FR 46040-46051, August 31, 1993.]//

[For text of unit (b), see M.R.]

[For text of subitems (2) to (4), see M.R.]

[For text of items F to H, see M.R.]

Subp. 3. **Petition for reduced regulation of hazardous waste being speculatively accumulated or reclaimed prior to use.** The agency may, upon presentation of a petition for those purposes, reduce any of the requirements of chapter 7045 applicable to reclamation, reuse, or recycling. The agency shall apply the standards and criteria set forth below in determining whether to grant a petition to reduce the regulatory requirements for the following recycled hazardous wastes.

[For text of item A, see M.R.]

B. Any person seeking a reduction in regulation of hazardous wastes that are reclaimed and then reused as feedstock within the original ~~primary~~ production process in which the hazardous wastes were generated if the reclamation is an essential part of the production process may petition under these provisions. The agency's decision regarding the petition shall be based on the following standards and criteria:

[In item B, the MPCA deletes the word "primary" from the discussion of feedstocks. Deleting the word "primary" is optional as the effect reduces regulatory stringency. The MPCA believes that adopting this federal change to allow a broader type of production process to qualify for feedstock reuse is reasonable and is adequately protective. This change relates to optional RCRA Amendment 137.5: "Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes" = 40 CFR 260.31(a-b); as supported at 59 FR 47982-48110, September 19, 1994; as amended at 60 FR 242-302, January 3, 1995.]//

[For text of subitems (1) to (8), see M.R.]

[For text of item C, see M.R.]

[For text of subp 4, see M.R.]

Subp. 5. **Petition for use of alternate manifest.** A person who meets the criteria in item A may submit a petition to the commissioner for approval of the use of an alternate

manifest system as described in item B. The criteria the commissioner shall use in determining whether to approve the use of the alternate manifest system are provided in item C.

[For text of item A, see M.R.]

B. Upon approval, an alternate manifest system may be used in lieu of the manifest system described in parts 7045.0261 ~~to~~ and 7045.0265. The commissioner shall only approve alternate manifest systems meeting the following criteria:

[In item B, the MPCA revises language to clarify that there are currently no parts between parts 7045.0261 and 7045.0265.]//

(1) The alternate manifest system must include a manifest form to be used by the generator to notify the commissioner each time waste is transported under this subpart. The manifest form must include: a space for the generator's name, mailing address, telephone number, and identification number; a space for the transporter's name and identification number; a space for the name, address, telephone number, and identification number of the recycling facility; a space for the United States Department of Transportation shipping name, hazard class, ~~and~~ identification number, and packing group of the waste as specified in the United States Department of Transportation Code, title 49, parts 171 to ~~179~~ 199; a space for the number and type of containers and total volume of the waste being shipped; a space for the waste identification number as specified in part 7045.0131, 7045.0135, or 7045.0137; a space for the signature of the generator or the generator's authorized representative affirming the correctness of the information; the mailing address of the commissioner; and a statement advising the generator to complete the form and submit it to the commissioner within five working days of transporting waste.

[In subitem (1), the MPCA corrects one of several citations to a range of regulations amended by the U.S. Department of Transportation. The MPCA also follows advice from Minnesota's Department of Transportation to revise language to conform with more recent changes to those federal regulations.]//

[For text of subitems (2) and (3), see M.R.]

[For text of item C, see M.R.]

[For text of subps 6 and 7, see M.R.]

Subp. 8. [See repealer.]

[The MPCA repeals subpart 8 because only the EPA may grant case-by-case extensions to an effective date for land disposal restrictions—the subject of this subpart. This repeal does not change the effect of the rule, which formerly referenced the EPA as the sole authority for granting this type of extension. The MPCA believes that it is reasonable to repeal this subpart since the State cannot accept the application or grant those types of extensions. The MPCA will refer anyone seeking this type of extension to the EPA.]//

Subp. 9. **Petitions to allow land disposal of a prohibited waste.** A person seeking an exemption from a prohibition for the disposal of a restricted hazardous waste in a particular unit or units must submit a petition to the agency and to the EPA demonstrating, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous. The demonstration to the EPA must include the provisions in Code of Federal Regulations, title 40, section 268.6. The demonstration to the agency must include an

identification of the specific waste and the specific unit for which the demonstration will be made, a waste analysis to describe fully the chemical and physical characteristics of the subject waste, and a comprehensive characterization of the disposal unit site including an analysis of background air, soil, and water quality. The demonstration must also include a monitoring plan that detects migration at the earliest practicable time, and sufficient information to assure the commissioner that the owner or operator of a land disposal unit receiving restricted wastes will comply with other applicable federal, state, and local laws. The person seeking the exemption must also comply with items A to L.

[For text of items A to C, see M.R.]

D. If the owner or operator determines that there is migration of hazardous constituents from the unit, the owner or operator must immediately suspend receipt of prohibited waste at the unit and notify the commissioner in writing within ten days of the determination that a release has occurred. Within 60 days of receiving the notification, the commissioner shall determine whether the owner or operator can continue to receive prohibited waste in the unit and whether the variance is to be revoked. The commissioner shall also determine whether further examination of any migration is warranted under applicable provisions of parts 7045.0450 to ~~7045.0642~~ 7045.0651.

[In item D, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items E to I, see M.R.]

J. Before the agency's decision, the applicant must comply with all restrictions on land disposal under ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 when the effective date for the waste has been reached.

[In item J, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of items K and L, see M.R.]

Subp. 10. [See repealer.]

[The MPCA repeals Subpart 10 because only the EPA may grant petitions for alternate treatment standards or alternative technology, which are the subjects of the repealed subpart. This repeal does not change the effect of the rule, which formerly referenced the EPA as the sole authority for granting this type of petition. The MPCA believes that it is reasonable to repeal this subpart since the State cannot accept the application or grant those types of petitions. The MPCA will refer anyone seeking this type of extension to the EPA.]//

[For text of subps 11 and 12, see M.R.]

7045.0090 ADOPTION AND INCORPORATION BY REFERENCE.

Subpart 1. **Applicability.** Except as specified in subparts 2 and 3, the terms and standards identified in subparts 1a to ~~1e~~ 1h apply whenever federal regulations are ~~adopted or~~ incorporated by reference in this chapter whether or not this part is specifically referenced. Terms used in incorporated Code of Federal Regulations, title 40, and defined in part 7045.0020 or in Minnesota Statutes have the meaning given in part 7045.0020 or in Minnesota Statutes.

[The MPCA recently promulgated part 7045.0090 to address general conditions governing materials incorporated by reference and to list State counterparts to cited

federal regulations. Additional conditions specific to the incorporated material may appear in these rules at the place where the material is incorporated. The MPCA is revising part 7045.0090 in two ways. The first is to organize existing requirements by their federal part/topic. For example, subpart 1d addresses incorporated federal regulations that relate to hazardous waste generators, and subpart 1e addresses incorporated federal regulations relating to hazardous waste transporters. Organizing these subparts by their federal topic makes it easier for the reader to find conditions related to incorporated material. This type of change is only meant to clarify this part. The reasonableness of the existing material in this part was originally justified in the Statement of Need and Reasonableness for the rulemaking in which the MPCA first adopted this part (part 7045.0090 was originally adopted in a rulemaking, "Rules Governing Adoption of Rules by Reference, Corrective Action and Remediation Waste Management, Minnesota Rules Parts 7045.0020, 7045.0090, 7045.0450, 7045.0478, 7045.0485, 7045.0545, 7045.0546, 7045.0547, 7045.0548 and 7045.0552," dated September 8, 2004). In that rulemaking, the MPCA determined that it was reasonable to provide guidance on how cites and cross references within federal regulations would apply in rules when incorporated by reference. While the MPCA is now significantly rearranging existing guidance, the MPCA already established its reasonableness. The second type of change to this part addresses an expanded list of incorporations by reference in this rule. Below, the MPCA discusses added or revised references.]//

Subp. 1a.~~**General**~~ **Specific terms.** ~~Terms defined in Minnesota Rules and Minnesota Statutes that are also defined in Code of Federal Regulations, title 40,~~ The following terms and phrases have the meaning given ~~in part 7045.0020 and the applicable Minnesota statute~~.

[The MPCA revises and restructures old item A, into a new subpart 1a, under which it defines specific terms.]//

A. "EPA" and "agency" mean the Pollution Control Agency ~~and its commissioner~~.

[In item A, the MPCA clarifies that when it incorporates federal regulations into rule by reference, references in federal regulations to "EPA" or to "agency" mean the Minnesota Pollution Control Agency. The MPCA removes a reference to "commissioner" in this subpart since commissioner is addressed in item B.]//

~~B. "Generator" has the meaning given in part 7045.0020.~~

[The MPCA moves this definition into item D.]//

~~C. "Hazardous waste" has the meaning given in part 7045.0020.~~

[The MPCA moves this definition into item D.]//

~~D.~~ B. "Regional administrator," "administrator," and "director" mean the commissioner of the Pollution Control Agency.

[In item B, the MPCA adds the term administrator because that term is sometimes used in federal regulations that are incorporated by reference and clarifies that this term also means the MPCA commissioner.]//

~~E.~~ C. "State," "authorized state," "approved state," or "approved program" means Minnesota.

~~F. "Waste" has the meaning given in part 7045.0020.~~

[The MPCA moves this definition into a new item D.]//

D. "Generator," "hazardous waste," and "waste" have the meanings given in part 7045.0020.

[In item D, the MPCA consolidates terms that were previously defined in former items B, C, and F.]//

Subp. 1b. **Hazardous waste management system general standards; Code of Federal Regulations, title 40, part 260.** References to the petition processes established in ~~"~~Code of Federal Regulations, title 40, part 260, subpart C,~~" or "Code of Federal Regulations, title 40,~~ or Code of Federal Regulations, title 40, sections 260.20 to 260.41,~~"~~ mean the petition processes established in part 7045.0075.

[In subpart 1b, the MPCA clarifies that references in incorporated federal language to the petition process in 40 CFR part 260, subpart C, mean the State counterpart found in part 7045.0075.]//

Subp. 1c. **Identification and listing standards; Code of Federal Regulations, title 40, part 261.**

A. References to any section in ~~"~~Code of Federal Regulations, title 40, part 261, ~~subpart C," "~~ subparts A to C, or to Code of Federal Regulations, title 40, sections ~~261.20~~ 261.1 to 261.24,~~" or "characteristic hazardous waste"~~ mean ~~the characteristics established in part~~ parts 7045.0102 to 7045.0131 or part 7045.0214, subpart 3.

[In item A, the MPCA clarifies that references in incorporated federal language to 40 CFR part 261, subparts A to C, regarding the identification and listing of hazardous wastes, mean the State counterparts found in parts 7045.0102 to 7045.0131 and 7045.0214, subpart 3.]//

B. References to ~~"~~Code of Federal Regulations, title 40, section 261.4,~~"~~ mean the exclusions listed in part 7045.0120.

C. References to ~~"~~Code of Federal Regulations, title 40, section 261.6,~~"~~ mean the use, reuse, recycling, and reclamation requirements of part 7045.0125.

[In items B and C, the MPCA eliminates unnecessary quotation marks]//

D. References to any section in Code of Federal Regulations, title 40, part 261, subpart D, or to Code of Federal Regulations, title 40, sections 261.30 to 261.38, mean parts 7045.0135 to 7045.0145.

[In item D, the MPCA clarifies that references in incorporated federal language to 40 CFR part 261, subpart D, regarding the lists of hazardous wastes, mean the State counterparts found in parts 7045.0135 to 7045.0145.]//

Subp. 1d. **Standards applicable to generators of hazardous waste, Code of Federal Regulations, title 40, part 262.** References to Code of Federal Regulations, title 40, part 262, or to any section in Code of Federal Regulations, title 40, sections 262.10 to 262.70, mean parts 7045.0205 to 7045.0325.

[In subpart 1d, the MPCA clarifies that references in incorporated federal language to 40 CFR part 262, regarding generators of hazardous wastes, mean the State counterparts found in parts 7045.0205 to 7045.0325.]//

Subp. 1e. **Standards applicable to transporters of hazardous waste, Code of Federal Regulations, title 40, part 263.** References to any section in Code of Federal Regulations, title 40, sections 263.10 to 263.31, mean parts 7045.0351 to 7045.0397.

[In subpart 1e, the MPCA clarifies that references in incorporated federal language to 40 CFR sections 263.10 to 263.31, regarding the transportation of hazardous waste, mean the State counterparts found in parts 7045.0351 to 7045.0397.]//

Subp. ~~1d~~ 1f. **Permitted and interim status standards for owners and operators of hazardous waste treatment, storage, and disposal facilities; Code of Federal Regulations, title 40, parts 264 and 265.**

A. References to "~~Code~~ Code of Federal Regulations, title 40, part 264, subpart F," "~~Code~~ Code of Federal Regulations, title 40, sections 264.90 to 264.101," "~~Code~~ Code of Federal Regulations, title 40, part 265, subpart F," or "Code of Federal Regulations, title 40, sections 265.90 to 265.94," mean the requirements of parts 7045.0484, 7045.0485, 7045.0590, and 7045.0592 relating to groundwater protection, monitoring, and corrective action for releases.

[In item A, the MPCA clarifies that references in incorporated federal language to 40 CFR part 264, subpart F, or to 265, subpart F, regarding the operation of hazardous waste facilities, mean the State counterparts found in parts 7045.0484, 7045.0485, 7045.0590, and 7045.0592.]//

B. References to "~~Code~~ Code of Federal Regulations, title 40, part 264, subpart H," "~~Code~~ Code of Federal Regulations, title 40, sections 264.140 to 264.151," "~~Code~~ Code of Federal Regulations, title 40, part 265, subpart H," or "Code of Federal Regulations, title 40, sections 265.140 to 265.150," mean the financial assurance requirements of parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624.

[In item B, the MPCA clarifies that references in incorporated federal language to 40 CFR part 264, subpart H, or to 265, subpart H, regarding financial assurance for hazardous waste facilities, mean the State counterparts found in parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624.]//

C. References to "~~Code~~ Code of Federal Regulations, title 40, part 264, subpart O," "~~Code~~ Code of Federal Regulations, title 40, sections 264.340 to 264.351," "~~Code~~ Code of Federal Regulations, title 40, part 265, subpart O," or "Code of Federal Regulations, title 40, sections 265.340 to 265.352," mean the thermal treatment standards of parts 7045.0542 and 7045.0640.

[In item C, the MPCA clarifies that references in incorporated federal language to 40 CFR part 264, subpart O, or to 265, subpart O, regarding thermal treatment facilities, mean the State counterparts in parts 7045.0542 and 7045.0640.]//

D. References to "~~Code~~ Code of Federal Regulations, title 40, part 264, subpart N," "~~Code~~ Code of Federal Regulations, title 40, sections 264.300 to 264.317," "~~Code~~ Code of Federal Regulations, title 40, part 265, subpart N," or "Code of Federal Regulations, title 40, sections 265.300 to 265.316," mean the landfill standards of parts 7045.0538 and 7045.0638.

[In item D, the MPCA clarifies that references in incorporated federal language to 40 CFR part 264, subpart N, or to 265, subpart N, regarding landfills, mean the State counterparts in parts 7045.0538 and 7045.0638.]//

Subp. ~~1e~~ 1g. **Permit requirements; Code of Federal Regulations, title 40, part 270.** References to "~~Code~~ Code of Federal Regulations, title 40, part 270, subparts A to H," "~~Code~~ Code of Federal Regulations, title 40, sections 270.1 to 270.230," or any other reference to a hazardous waste facility permit mean the hazardous waste facility permit requirements in parts 7001.0500 to 7001.0730.

[In subpart 1g, the MPCA clarifies that references in incorporated federal language to 40 CFR part 270, subparts A to H, regarding hazardous waste permits mean the State counterparts in parts 7001.0500 to 7001.0730.]//

Subp. 1h. **Other standards.**

[The MPCA creates subpart 1h to address the adoption of standards that do not fit into any of the existing categories.]//

A. References to Code of Federal Regulations, title 40, part 273, mean part 7045.1400 (universal waste).

[In new item A, the MPCA clarifies that references in incorporated federal language to 40 CFR part 273, regarding universal wastes, mean the State counterparts in part 7045.1400.]//

B. References to Code of Federal Regulations, title 40, part 279, mean parts 7045.0692 to 7045.0990 (used oil).

[In new item B, the MPCA clarifies that references in incorporated federal language to 40 CFR part 279, regarding used oil, mean the State counterparts in parts 7045.0692 to 7045.0990.]//

C. References to underground injection of waste in any Code of Federal Regulations incorporated in this chapter are subject to Minnesota Statutes and rules prohibiting the discharge of waste or pollutants to the saturated or unsaturated zones.

[In new item C, the MPCA clarifies that Minnesota statutes and rules prohibit underground injection of waste or pollutants. This is not a change but only a clarification of existing rules and statutes.]//

D. References to Code of Federal Regulations, title 40, part 266, subpart C, mean part 7045.0665 (uses constituting disposal).

[In item D, the MPCA clarifies that references in incorporated federal language to 40 CFR part 266, subpart C, mean the State counterparts in part 7045.0665.]//

E. References to Code of Federal Regulations, title 40, part 266, subpart F, mean part 7045.0675 (precious metal recovery).

[In item E, the MPCA clarifies that references in incorporated federal language to 40 CFR part 266, subpart F, mean the State counterparts in part 7045.0675.]//

F. References to Code of Federal Regulations, title 40, part 266, subpart G, mean part 7045.0685 (spent lead-acid batteries being reclaimed).

[In item F, the MPCA clarifies that references in incorporated federal language to 40 CFR part 266, subpart G, mean the State counterparts in part 7045.0685.]//

[For text of subps 2 and 3, see M.R.]

Subp. 4. **Applicable law.** When federal regulations incorporated into this chapter cite additional federal regulations and when this chapter does not address whether the cited federal regulations or corresponding state rules apply, state rules shall apply.

[In subpart 4, the MPCA clarifies that, unless otherwise specified, when either Minnesota Rules or corresponding RCRA regulations could apply, the most stringent rule or regulation governs.]//

7045.0102 MIXTURES OF WASTES.

[The MPCA revises part 7045.0102 to clarify the existing requirements and to make the rule correspond more closely to parallel requirements in 40 CFR section 261.3. Except for several new federal exclusions being added to subpart 2, item E, subitems (6) and (7), the revisions to this rule part are intended to clarify the rule without changing its meaning. The MPCA intends to continue regulating the same mixtures

that were considered to be hazardous under the former rule, and, except for the newly added exceptions in Item E, to continue excluding those mixtures that were excluded from regulation under the former rule.]//

Subpart 1. **Scope.** Except as provided in part 7045.0665, subpart 1, mixtures of wastes are ~~listed in subparts 2 and 3~~ identified in subpart 2.

[In subpart 1, the MPCA replaces the word "listed," which has a special meaning in this chapter, with the more appropriate term "identified." The MPCA also removes an obsolete reference to subpart 3 that was repealed in a prior rulemaking.]//

Subp. 2. **Mixtures of hazardous and nonhazardous wastes.** The mixing of a hazardous waste with a nonhazardous waste as described in this subpart constitutes treatment. Generators who mix hazardous and nonhazardous wastes on site must meet the requirements of part 7045.0211 for generators with on-site facilities. Mixtures excluded under part 7045.0075, subpart 2, are excluded from regulation. Wastes excluded under this subpart are subject to part 7045.1390, even if they no longer exhibit a characteristic at the point of land disposal.

[In subpart 2, the MPCA adds two new sentences. The first clarifies that wastes excluded through the petition process in part 7045.0075, subpart 2, are not further addressed by this mixtures rule. The existing rule, and corresponding 40 CFR section 261.3, repeated a similar phrase at different units throughout the part. In this introductory paragraph, the MPCA adds one reference to the waste petition process to consolidate several redundant references. In the second new sentence, the MPCA is adding a requirement that corresponds to 40 CFR 261.3(g)(3). This is based on RCRA Amendment 192A.2: "Mixture and Derived-From Rules Revisions" = 40 CFR 261.3(g)(3); as supported at 66 FR 27266-27297, May 16, 2001. This sentence helps the reader to understand that treatment standards for land disposal may be more restrictive than the criteria used for determining whether the waste is characteristic waste.]//

A. A mixture is a hazardous waste if it ~~is a mixture of nonhazardous waste and any waste which is hazardous solely because it exhibits the characteristic of ignitability, corrosivity, oxidativity, or reactivity as described in part 7045.0131, unless the resulting mixture does not exhibit any of the characteristics of hazardous waste as defined in part 7045.0131~~ contains a waste that is hazardous solely because it exhibits any of the characteristics of ignitability, corrosivity, oxidativity, or reactivity identified in part 7045.0131, or contains a hazardous waste listed in part 7045.0135 solely because of ignitability, corrosivity, or reactivity, and the resulting mixture exhibits any characteristic of a hazardous waste identified in part 7045.0131.

[Former item A language stated that wastes that exhibit hazardous characteristics solely for ignitability, reactivity, corrosivity or oxidativity are not regulated as hazardous waste if, after mixing, they no longer display those characteristics. The MPCA intends the effect of item A to remain the same, however, it rephrases item A to make three changes.//

First, the MPCA changes the identified characteristics to plural form instead of singular in order to clarify that this item also applies when mixtures contain more than one of the characteristics (e.g., a waste that is both corrosive and ignitable).//

The use of the term "solely" is meant to clarify that the waste could only be hazardous because of those specific characteristics, not that it was limited to only one of those characteristics. To qualify for this provision, a waste must not be hazardous for any reason other than ignitability, corrosivity, oxidativity or reactivity (e.g., may not be characteristic for or listed based on toxicity or lethality).//

The second change is that the MPCA revised item A to address both listed and characteristic waste that, when mixed, continues to exhibit a characteristic of hazardous waste. This was done by incorporating the contents of three former items into item A. Item A addresses mixtures of characteristic wastes that had been addressed in former item A and in the second part of former item C. It also addresses mixtures of listed wastes formerly addressed in the first part of former item C and former item B. Former item B stated that mixtures containing wastes that were listed for ignitability, corrosivity, or reactivity were not hazardous if the resulting mixture was not characteristic. Former item E further addressed this concept by excluding from regulation sewered wastes that were listed for reasons of ignitability, corrosivity, and reactivity. The MPCA combines all of these types of mixtures into new item A.//

In new item A the MPCA addresses mixtures resulting from both categories of wastes—those that are hazardous because they are listed and those that are hazardous because they exhibit a characteristic. Regardless of how the waste is initially identified as hazardous, if, after mixing, the waste still exhibits one of the specified characteristics (ignitable, reactive, oxidative or corrosive), it continues to be regulated as a hazardous waste. A mixture of these types of wastes, whether it is derived from a listed waste or a characteristic waste, will be regulated as hazardous if the resulting mixture has a hazardous characteristic.//

Finally, the MPCA rephrases this part to use more affirmative language to state that the mixture is a hazardous waste if it exhibits a characteristic (in lieu of the previous language which said that it is a hazardous waste unless it does not exhibit a characteristic).//

Although the format of these mixture provisions has changed, the MPCA intends that mixtures of these types of waste are not hazardous wastes if they do not exhibit these characteristics of hazardous waste. This is not a changed requirement from the previous rule, but is only a rephrasing intended to simplify and clarify the existing requirement.//

The structure of the State mixtures rule differs significantly from the federal counterparts. However, there are many parallel elements, and the EPA determined that the State and federal rules are equivalent. The MPCA intends for its mixtures rule to continue to regulate the same wastes as the federal regulation and to remain equivalent to the federal mixtures rule.//

In addition to its initiative to reorganize and clarify its mixtures rules, the MPCA is also adopting changes based on changes the EPA made to corresponding federal

regulations. Further discussion of recent amendments to the federal mixtures language as it relates to the changes being made to this part are discussed in the following federal amendments:

- **RCRA Amendment 192A.2: "Mixture and Derived-From Rules Revisions" = 40 CFR 261.3(g)(1)-(3); as supported at 66 FR 27266-27297, May 16, 2001.**
- **RCRA Amendment 194: "Mixture and Derived-From Rules Revision II" = 40 CFR 261.3(g)(4); as supported at 66 FR 50332-50334, October 3, 2001.]//**

B. Except as provided in item D or E, a mixture is a hazardous waste if it ~~is a mixture of nonhazardous waste and any waste listed in part 7045.0135 solely because of ignitability, corrosivity, or reactivity, unless:~~ contains a waste listed for toxicity in part 7045.0135.

~~(1) the resulting mixture does not exhibit any of the characteristics of hazardous waste as defined in part 7045.0131;~~

~~(2) the resulting mixture has been excluded from regulation pursuant to part 7045.0075, subpart 2; or~~

~~(3) the nonhazardous waste is exempt from regulation under part 7045.0120, item I, and the resultant mixture no longer exhibits any characteristic of hazardous waste as defined in part 7045.0131 for which the hazardous waste listed in part 7045.0135 was listed.~~

[Item B is significantly revised to only refer to mixtures of wastes that are listed for reasons of toxicity. Mixtures of wastes that are listed for toxicity were formerly regulated in former items C, D and E, and their regulatory status has not changed as a result of this revision. A mixture that contains a waste listed for toxicity remains a hazardous waste.//

Although this is not a new requirement and need not be justified, the MPCA believes it is reasonable to repeat the reasoning behind this requirement. Unlike other waste characteristics in new item A, there is no provision in new item B that a listed toxic waste will somehow, after mixing, not exhibit a characteristic and, therefore, be excluded from regulation. This is because the MPCA has special concerns about the nature of toxic wastes and about disguising toxicity through dilution. This is different than the concerns with other waste characteristics. The types of wastes that are listed for toxicity can include carcinogens and other extremely hazardous or insidious chemicals. A listing for toxicity can be based on very complex reasons and toxicity cannot be evaluated as simply as a characteristic such as corrosivity, reactivity or ignitability. If a waste that is ignitable, corrosive or reactive is mixed with another waste so that those original properties are no longer present (i.e., it will no longer burn, corrode or react) then it is reasonable to cease to manage it as a hazardous waste for those characteristics. But, if a waste contains a toxic or lethal component, such as a carcinogen or poison, it is not reasonable to simply allow it to be diluted through mixing below a regulatory threshold for that carcinogen or poison. A waste may be listed for toxicity through a number of routes and there is no way, other than a complicated delisting petition, to determine whether it is safe to cease to regulate it as toxic. For this reason, and because of the concern that dilution does not constitute proper treatment for toxic materials, it is reasonable to provide specific limits on the

activity of mixing toxic wastes. The MPCA discusses regulating toxic wastes further below relating to changes to former item C.//

While the Minnesota-only characteristic "lethality" is related to toxicity, the MPCA provides no discussion of lethality in item B because lethality is solely a characteristic and is not currently used as the basis for any waste to be listed. The argument not to allow dilution of toxic waste would similarly apply to lethal waste.//

The MPCA adds the phrase, "except as provided in item E," to item B because it refers to specific exceptions for sewered wastes. These specific exceptions were formerly identified in old item F and are now provided in new item E.//

The MPCA is deleting the former introductory paragraph and former subitem (1) because those types of wastes are being addressed in new item A (a mixture containing waste listed for ignitability, corrosivity or reactivity is hazardous unless it no longer exhibits any of those characteristics).//

The MPCA is deleting former subitem (2) because its effect is addressed by a phrase added at the end of the introductory paragraph in subpart 2 (a mixture of a waste that has been removed from regulation as a hazardous waste as a result of a petition is no longer regulated as hazardous waste).//

The MPCA is removing former subitem (3) to delete the specific reference to mixtures of mining waste that are excluded from regulation in part 7045.0120, subpart 1, item I. The reference to this exclusion here is an unnecessary duplication, and is even confusing since the other exclusions in part 7045.0120 are not also referenced here. Wastes that are exempted from regulation in part 7045.0120 are not considered to be hazardous waste, and are not the subject of this mixtures rule. The type of mixture that was formerly addressed in this subpart (a mixture of a nonhazardous waste, excluded mining waste, and a waste that was listed for ignitability, reactivity or corrosivity) is now being addressed in new item A.//

C. Except as provided in item D, a mixture is a hazardous waste if it ~~is a nonsewered mixture of nonhazardous waste and any waste listed in part 7045.0135 (other than wastes listed solely because of ignitability, corrosivity, or reactivity) or any waste which is hazardous because it exhibits the characteristics of toxicity or lethality as identified in part 7045.0131 unless the resulting mixture has been excluded from regulation pursuant to part 7045.0075, subpart 2~~ contains a waste that exhibits the characteristic of toxicity or lethality identified in part 7045.0131.

[The MPCA has rephrased item C to more clearly state the existing requirement that mixtures of wastes that are characteristic for toxicity or lethality remain hazardous wastes. As discussed above for new item A, the MPCA believes that when mixtures contain wastes that are characteristic or listed for ignitability, corrosivity, oxidativity or reactivity and the mixture no longer exhibits any of those characteristics, it is reasonable to exempt these mixtures from regulation as a hazardous waste. However, as discussed in the note above, the MPCA views wastes that exhibit the characteristics of toxicity or lethality differently. The MPCA views the mixing of wastes that exhibit

the characteristics of toxicity or lethality as dilution and not a valid treatment and is not proposing any change to the effect of this item.//

In item C the MPCA also removes the reference to "nonsewered" mixtures because the changes made in this part eliminate the need to distinguish between sewered and nonsewered waste management. Item D and new item E provide specific exceptions for sewered mixtures, but in all other cases, the regulation of the wastes under this subpart does not change depending on whether they are sewered or not. The MPCA has also deleted a phrase addressing mixtures of wastes that are listed for toxicity because those types of mixtures are addressed in new item B. The MPCA deleted a phrase addressing mixtures of wastes that are characteristic for either toxicity or lethality because those types of mixtures are more clearly addressed in this item as it is rephrased.]//

D. A mixture is a hazardous waste if it is a sewered mixture of nonhazardous waste and any waste which is hazardous because it exhibits the characteristics of toxicity or lethality as defined in part 7045.0131 unless:

(1) prior to entering the sewer the resulting mixture no longer exhibits the characteristic of toxicity or lethality; and

(2) the sewering of the mixture has been approved by the agency pursuant to parts 7045.0221 to 7045.0255.

This provision does not apply to those mixtures defined as nonhazardous under item ~~F~~ E.

~~E. Except as provided in item F, a mixture is a hazardous waste if it is a sewered mixture of nonhazardous waste and any waste listed in part 7045.0135 (other than wastes listed solely because of ignitability, corrosivity, or reactivity) unless the resulting mixture has been excluded from regulation under part 7045.0075, subpart 2.~~

[The requirements of former item E are being deleted, because the wastes that were identified in former item E (wastes that are listed for toxicity) are being addressed in new item B without changing the effect of the rule. New item B does not distinguish between whether the waste is sewered or not. Except as specifically excluded under item E, if a waste is listed for toxicity, it remains a hazardous waste regardless of whether the resulting mixture is sewered or nonsewered.]//

~~F.~~ E. ~~Except as otherwise provided in item A, B, or D, the following sewered mixtures of nonhazardous wastes and hazardous wastes listed in part 7045.0135~~ Except as otherwise provided in item A, B, or D, the following sewered mixtures are not hazardous wastes if the generator can demonstrate that the mixture consists of wastewater, the discharge of which is subject to regulation under ~~the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1317(b) or 1342, as amended~~ either section 307(b) or 402 of the Clean Water Act, including wastewater at facilities which have eliminated the discharge of wastewater; and

[This new item E includes the provisions that were formerly in item F, mixtures of wastes that were discharged to the sewer under the Clean Water Act, without changing the effect of the existing rule. In this item the MPCA identifies a number of mixtures of specific listed hazardous wastes and excludes them from regulation as hazardous waste when they are discharged according to the Clean Water Act requirements. New item E and subitems (1), (2), (4) and (5) contain the same

provisions as the introduction and corresponding subitems found in former item F. Subitem (3) was also included in former item F, but has been revised to correspond to the exception provided in 261.3(a)(2)(iv)(C). Each exception in item E is based on the corresponding federal provision. Subitems (6) and (7) are new and are discussed below. The MPCA is also replacing an obsolete reference to the Federal Water Pollution Control Act with a reference to the Clean Water Act. The revised State language provides equivalence to the federal language and addresses changes found in RCRA Amendment 192A.2: "Mixture and Derived-From Rules Revisions" = 40 CFR 261.3(a)(2)(iv); as supported at 66 FR 27266-27297, May 16, 2001.]//

(1) one or more of the following spent solvents listed in part 7045.0135, subpart 1a, item B: carbon tetrachloride, tetrachloroethylene, trichloroethylene; provided that the solvents are discharged into the wastewater stream as a result of normal manufacturing operations and provided further that the maximum total weekly usage of these solvents, other than the amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed one part per million;

[In subitem (1), the MPCA corrects an existing citation to more accurately specify the correct listed wastes. The federal regulation that corresponds to this subitem (40 CFR 261.3(a)(2)(iv)(A)) cites 40 CFR part 261.31, which correlates to part 7045.0135, subpart 1a, item B.]//

(2) one or more of the following spent solvents listed in part 7045.0135, subpart 1a, item B: methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents; provided that the solvents are discharged into the wastewater stream as a result of normal manufacturing operations and provided further that the maximum total weekly usage of these solvents, other than the amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million;

[In subitem (2), the MPCA corrects an existing citation to more accurately specify the correct listed wastes. The federal regulation that corresponds to this subitem (40 CFR 261.3(a)(2)(iv)(B)) cites 40 CFR part 261.31, which correlates to part 7045.0135, subpart 1a, item B.]//

(3) heat exchanger bundle cleaning sludge from the petroleum refining industry, EPA Hazardous Waste No. K050 as listed in part 7045.0135, subpart 1a, item C;

[The MPCA amends subitem (3) to clarify that the number, K050, is an EPA Hazardous Waste Number.]//

(4) a discarded commercial chemical product, or chemical intermediate listed in part 7045.0135, subpart 1a, item D, arising from de minimis losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. De minimis losses include those from normal material handling operations (such as spills from the unloading or transfer of materials from bins or other containers or leaks from pipes, valves, or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment;

and ~~rinsing~~ rinsate from empty containers or from containers that are rendered empty by that rinsing; ~~or~~

[In subitem (4), the MPCA corrects an existing citation to more accurately specify the correct listed wastes. The federal regulation that corresponds to this subitem (40 CFR 261.3(a)(2)(iv)(D)) cites 40 CFR part 261.33, which correlates to part 7045.0135, subpart 1a, item D. In addition, the MPCA is amending the rule to correspond to the federal regulation by changing this use of the verb "rinsing" to the more appropriate use of the noun "rinsate."]//

(5) wastewater resulting from laboratory operations containing toxic wastes listed in part 7045.0135, provided that the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pretreatment system, or provided the waste's combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pretreatment facility. Toxic wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation;

(6) one or more of the following wastes listed in part 7045.0135, subpart 1a, item C: wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157), provided that the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine, including all amounts that can not be demonstrated to be reacted in the process, destroyed through treatment, or is recovered (i.e., what is discharged or volatilized), divided by the average weekly flow of process wastewater prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of five parts per million by weight; or

[In subitem (6), the MPCA adopts new language that corresponds to federal language found at 40 CFR 261.3(a)(2)(iv)(F). The MPCA believes that it is reasonable to exclude these waste streams because their discharge is adequately regulated through the Clean Water Act. This language is based on an optional provision in RCRA Amendment 140: "Carbamate Production Identification and Listing of Hazardous Waste" = 40 CFR 261.3(a)(2)(iv)(F); as supported at 60 FR 7824-7859, February 9, 1995; as amended at 60 FR 19165, April 17, 1995; and at 60 FR 25619, May 12, 1995.]//

(7) wastewaters derived from the treatment of one or more of the following wastes listed in part 7045.0135, subpart 1a, item C: organic waste, including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates, from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156), provided that the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of five milligrams per liter.

[In subitem (7), the MPCA adopts new language that corresponds to federal language found at 40 CFR 261.3(a)(2)(iv)(G). The MPCA believes that it is reasonable to exclude these waste streams because their discharge is adequately regulated through the Clean Water Act. This language is based on an optional provision in RCRA Amendment 140: "Carbamate Production Identification and Listing of Hazardous Waste" = 40 CFR 261.3(a)(2)(iv)(G); as supported at 60 FR 7824-7859, February 9,

1995; as amended at 60 FR 19165, April 17, 1995; and at 60 FR 25619, May 12, 1995.]//

~~G.~~ For the purpose of this ~~part~~ item, headworks refers to the influent plumbing of a privately owned national pollutant discharge elimination system, state disposal system, or pretreatment facility or to the facility's point of discharge to a municipal collection system when the treatment facility is a publicly owned wastewater treatment facility.

[The MPCA is amending former item G to become a paragraph at the end of new item E because the definition that it provides is only relevant to item E. The MPCA does not change the definition of "headworks" but clarifies that it applies only to item E, and not to all of part 7045.0102.]//

F. A mixture of used oil and a hazardous waste is a hazardous waste except as provided in part 7045.0800.

[The MPCA adds new item F, corresponding to 40 CFR part 261.3 (a)(2)(v), to address mixtures of used oil and hazardous waste. Item F does not provide new conditions for exceptions but instead refers readers to the rules that address used oil management. This item clarifies but does not change the regulatory status of used oil mixtures.]//

~~H.~~ G. Any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under part 7045.0120, subpart 1, item I, and any other waste exhibiting a characteristic of hazardous waste under part 7045.0131 is a hazardous waste only if:

[The MPCA changes the numbering from former item H to item G. The MPCA also corrects the reference to accurately reflect that the citation is to part 7045.0120, subpart 1, item I.]//

[For text of subitems (1) and (2), see M.R.]

[For text of subp 3, see M.R.]

7045.0120 EXEMPTIONS AND SPECIAL REQUIREMENTS.

Subpart 1. **Exempt types of waste.** The following waste may be stored, labeled, transported, treated, processed, and disposed of without complying with the requirements of this chapter:

[For text of items A to H, see M.R.]

I. waste from the extraction, beneficiation, and processing of ores and minerals, including coal, ~~and including~~ phosphate rock, and overburden from the mining of uranium ore. For purposes of this item, beneficiation of ores and minerals is restricted to the following activities: crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining to remove water or carbon dioxide; roasting, autoclaving, or chlorination in preparation for leaching (except where the roasting, autoclaving, or chlorination/leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing); gravity concentration; magnetic separation; electrostatic separation; flotation; ion exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat, tank, and in situ leaching. For the purposes of this item, waste from the processing of ores and minerals includes only the following wastes as generated:

(1) slag from primary copper processing;

(2) slag from primary lead processing;
(3) red and brown muds from bauxite refining;
(4) phosphogypsum from phosphoric acid production;
~~(2)~~ (5) slag from elemental phosphorus production;
~~(3)~~ (6) gasifier ash from coal gasification;
~~(4)~~ (7) process wastewater from coal gasification;
(8) calcium sulfate wastewater treatment plant sludge from primary copper processing;
~~(5)~~ (9) slag tailings from primary copper processing;
~~(6)~~ (10) fluorogypsum from hydrofluoric acid production;
(11) process wastewater from hydrofluoric acid production;
(12) air pollution control dust or sludge from iron blast furnaces;
~~(7)~~ (13) iron blast furnace slag;
~~(8)~~ (14) treated residue from the roasting/leaching of chrome ore; ~~and~~
(15) process wastewater from primary magnesium processing by the anhydrous process;
(16) process wastewater from phosphoric acid production;
(17) basic oxygen furnace and open hearth furnace air pollution control dust or sludge from carbon steel production;
~~(9)~~ (18) basic oxygen furnace and open hearth furnace slag from carbon steel production;
(19) chloride process waste solids from titanium tetrachloride production; and
(20) slag from primary zinc processing.

[In subitems (1) to (20), the MPCA adopts language to clarify the exclusion of specific mining wastes. The language of this item corresponds to 40 CFR 261.4(b)(7)(ii)(A)-(T) (with the exception that the MPCA is not adopting a reference to 40 CFR 266.112, dealing with Burning in Industrial Furnaces, because the MPCA has not yet adopted provisions equivalent to that portion of the federal regulations. (Further information regarding this amendment can be found at required RCRA Amendment 167E: "Bevill Exclusion Revisions and Clarifications" = 40 CFR 261.4(b)(7)(ii)(A)-(T); as supported at 63 FR 28556-28753, May 26, 1998.]//

A residue derived from coprocessing mineral processing secondary materials with normal beneficiation raw materials or with normal mineral processing raw materials remains excluded under this subpart if the owner or operator processes at least 50 percent by weight normal beneficiation raw materials or normal mineral processing raw materials and legitimately reclaims the secondary mineral processing materials;

[In this paragraph at the end of item I, the MPCA adopts a clarification of the exclusions being added above it. The clarification corresponds to federal language found at 40 CFR 261.4(b)(7)(iii) (The federal rule language is the result of two amendments). Further information about the clarification can be found at required RCRA Amendment 167E: "Bevill Exclusion Revisions and Clarifications" = 40 CFR 261.4(b)(7)(iii); as supported at 63 FR 28556-28753, May 26, 1998 and also at required RCRA Amendment 179.3: "Land Disposal Restrictions Phase IV -- Technical Corrections and Clarifications to Treatment Standards" = 40 CFR 261.4(b)(7)(iii); as supported at 64 FR 25408-25417, May 11, 1999.]//

[For text of items J to S, see M.R.]

T. spent wood preserving solutions that have been reclaimed and reused for their original intended purpose, and wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood~~;~~ if, prior to reuse, the wood preserving wastewaters and spent wood preserving solutions described in this item meet all of the following conditions:

[In item T, the MPCA adopts language that clarifies the exclusion of certain wood preserving solutions to narrow the scope of what is being excluded. This more stringent clarification corresponds to federal language found at 40 CFR 261.4(a)(9)(iii). This change relates to required RCRA Amendment 167 F: "Exclusion of Recycled Wood Preserving Wastewaters" = 40 CFR 261.4(a)(9)(iii); as supported at 63 FR 28556-28753, May 26, 1998.]//

(1) the wood preserving wastewaters and spent wood preserving solutions are reused on site at waterborne plants in the production process for their original intended purpose;

[In subitem (1), the MPCA adopts language corresponding to 40 CFR 261.4(a)(9)(iii)(A). This is a continuation of the same federal revision discussed in item T.]//

(2) prior to reuse, the wood preserving wastewaters and spent wood preserving solutions are managed to prevent release to land resources or waters of the state;

[In subitem (2), the MPCA adopts language corresponding to 40 CFR 261.4(a)(9)(iii)(B). This is a continuation of the same federal revision discussed in item T. The MPCA has revised the adopted language to change "land" to "land resources" and "groundwater" to "waters of the state" to use Minnesota terms without changing the intended meaning.]//

(3) any unit used to manage wood preserving wastewaters or spent wood preserving solutions prior to reuse can be visually or otherwise determined to prevent such releases;

[In subitem (3), the MPCA adopts language corresponding to 40 CFR 261.4(a)(9)(iii)(C). This is a continuation of the same federal revision discussed in item T. The MPCA has revised the adopted language to clarify that these wastewaters are from wood preserving.]//

(4) any drip pad used to manage the wood preserving wastewaters or spent wood preserving solutions prior to reuse complies with the standards governing drip pads in part 7045.0644; and

[In subitem (4), the MPCA adopts language corresponding to 40 CFR 261.4(a)(9)(iii)(D). This is a continuation of the same federal revision discussed in item T. The MPCA has revised the adopted language to clarify that these wastewaters are related to wood preserving. The MPCA replaces a federal citation with the corresponding Minnesota Rules citation. The MPCA has not adopted a reference found in the federal counterpart to a conditional exemption for generators of less than 100kg/month because this conditional exemption is not provided in the Minnesota Rules.]//

(5) prior to operating pursuant to this exclusion, the plant owner or operator submits to the commissioner a onetime notification stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: "I have read the applicable regulation

establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation." The plant must maintain a copy of that document in its on-site records until closure of the facility. The exclusion applies only so long as the plant meets all of the conditions. If the plant goes out of compliance with any condition, the plant owner or operator may apply to the commissioner for reinstatement. Reinstatement is conditioned on the commissioner finding that the plant has returned to compliance with all conditions and that violations are not likely to recur;

[In subitem (5), the MPCA adopts language corresponding to 40 CFR 261.4(a)(9)(iii)(E). This is a continuation of the same federal revision discussed in item T. The MPCA revises the adopted federal language to clarify that the owner or operator must submit the notification to the MPCA commissioner and that the owner or operator (not the plant) would need to apply for reinstatement. The MPCA clarifies that reinstatement is based on the plant returning to compliance with all conditions. An additional change to this subitem is based on required RCRA Amendment 213: "Burden Reduction Initiative" = 40 CFR 261.4(a)(9)(iii)(E); as supported at 71 FR 16862-16915, April 4, 2006. This change requires the owner/operator to keep a copy of the exemption notice onsite until closure of the facility instead of just 3-years from the date specified in the notice. It should cost very little to retain this record, and the ability to prove that the rule was followed should benefit the owner or operator and the regulating agencies.]//

[For text of item U, see M.R.]

[In subitem (5), the MPCA adopts language corresponding to 40 CFR 261.4(a)(9)(iii)(E). This is a continuation of the same federal revision discussed in item T. The MPCA revises the adopted federal language to clarify that the owner or operator must submit the notification to the MPCA commissioner and that the owner or operator (not the plant) would need to apply for reinstatement. The MPCA clarifies that reinstatement is based on the plant returning to compliance with all conditions. An additional change to this subitem is based on required RCRA Amendment 213: "Burden Reduction Initiative" = 40 CFR 261.4(a)(9)(iii)(E); as supported at 71 FR 16862-16915, April 4, 2006. This change requires the owner/operator to keep a copy of the exemption notice onsite until closure of the facility instead of just 3-years from the date specified in the notice. It should cost very little to retain this record, and the ability to prove that the rule was followed should benefit the owner or operator and the regulating agencies.]//

V. used oil rerefining distillation bottoms that are used as feedstock to manufacture asphalt products; ~~or~~

[In item V, the MPCA removes the "or" to accommodate expanding this list.]//

W. sorbents, soil, and debris contaminated with petroleum fuel from spills and emergencies that are contained and reported in accordance with Minnesota Statutes, section 115.061, except for used oil spills and emergencies~~.~~; or

[In item W, the MPCA replaces a period with a semicolon to accommodate expanding this list.]//

X. spent materials, other than hazardous wastes listed in part 7045.0135, generated within the primary mineral processing industry from which minerals, acids, cyanide,

water, or other values are recovered by mineral processing or by beneficiation, provided that:

[In item X, the MPCA adopts an exemption that corresponds to the federal regulations found at 40 CFR 261.4(a)(17). This exemption addresses spent materials generated in the mineral processing industry. Because this rule is essential to the operation of the Land Disposal Restrictions adopted later in this rulemaking, adopting this amendment is required to maintain program authorization. This change relates to required RCRA Amendment 179.3: "Land Disposal Restrictions Phase IV -- Technical Corrections and Clarifications to Treatment Standards" = 40 CFR 261.4(a)(17); as supported at 64 FR 25408-25417, May 11, 1999, and to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17); as supported at 67 FR 11251-11254, March 13, 2002.]//

(1) the spent material is legitimately recycled to recover minerals, acids, cyanide, water, or other values;

[In subitem (1), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(i). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(i); as supported at 67 FR 11251-11254, March 13, 2002.]//

(2) the spent material is not accumulated speculatively;

[In subitem (2), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(ii). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(ii); as supported at 67 FR 11251-11254, March 13, 2002.]//

(3) except as provided in subitem (4), the spent material is stored in tanks, containers, or buildings meeting the following minimum integrity standards: a building must be an engineered structure with a floor, walls, and a roof, all of which are made of nonearthen materials providing structural support (except smelter buildings may have partially earthen floors provided the spent material is stored on the nonearthen portion), and have a roof suitable for diverting rainwater away from the foundation; a tank must be freestanding, not be a surface impoundment, and be manufactured of a material suitable for containment of its contents; a container must be freestanding and be manufactured of a material suitable for containment of its contents. If tanks or containers contain any particulate that may be subject to wind dispersal, the owner or operator must operate these units in a manner that controls fugitive dust. Tanks, containers, and buildings must be designed, constructed, and operated to prevent releases to the environment of these materials;

[In subitem (3), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(iii). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(iii); as supported at 67 FR 11251-11254, March 13, 2002. The MPCA replaces "nonearthen" with "non-earthen" and "secondary materials" with "spent materials" to clarify the intended meaning of the federal counterparts.]//

(4) the commissioner may make a site-specific determination, upon application by the owner or operator and after public review and comment, that only solid mineral processing spent material may be placed on pads rather than in tanks, containers, or

buildings. Solid mineral processing spent materials must not contain any free liquid. The commissioner must affirm that pads are designed, constructed, and operated to prevent releases of the spent material into the environment. Pads must provide the same degree of containment afforded by the tanks, containers, and buildings eligible for exclusion in subitem (3):

[In subitem (4), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(iv). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(iv); as supported at 67 FR 11251-11254, March 13, 2002. The MPCA adds language to clarify that the owner or operator must apply for a commissioner's determination (rather than an EPA Administrator's determination as would be required under the federal regulations). The MPCA also replaces one use of the term "secondary materials" with the term "spent materials" to be consistent within the paragraph.]//

(a) the commissioner must also consider if storage on pads poses the potential for releases via groundwater, surface water, and air exposure pathways. Factors to be considered for assessing the groundwater, surface water, and air exposure pathways are the volume and physical and chemical properties of the spent material, including its potential for migration off the pad; the potential for human or environmental exposure to hazardous constituents migrating from the pad via each exposure pathway; and the possibility and extent of harm to human and environmental receptors via each exposure pathway;

[In unit (a), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(iv)(A). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(iv)(A); as supported at 67 FR 11251-11254, March 13, 2002; also, to required RCRA Amendment 167 D – REVISED: "Mineral Processing Secondary Materials Exclusion" = 40 CFR 261.4(a)(17)(iv)(A); as supported at 63 FR 28556-28753, May 26, 1998.]//

(b) pads must meet the following minimum standards: be designed of nonearthen material that is compatible with the chemical nature of the mineral processing spent material, be capable of withstanding physical stresses associated with placement and removal, have run-on/runoff controls, be operated in a manner that controls fugitive dust, and have integrity assurance through inspections and maintenance programs; and

[In unit (b), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(iv)(B). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(iv)(B); as supported at 67 FR 11251-11254, March 13, 2002; also, to required RCRA Amendment 167 D – REVISED: "Mineral Processing Secondary Materials Exclusion" = 40 CFR 261.4(a)(17)(iv)(B); as supported at 63 FR 28556-28753, May 26, 1998.]//

(c) before making a determination under this subitem, the commissioner must provide notice and the opportunity for comment to all persons potentially interested in the determination in accordance with part 7001.0100, subpart 5;

[In unit (c), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(iv)(C). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing

Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(iv)(C); 67 FR 11251-11254, March 13, 2002; also, to required RCRA Amendment 167 D – REVISED: "Mineral Processing Secondary Materials Exclusion" = 40 CFR 261.4(a)(17)(iv)(A); 63 FR 28556-28753; May 26, 1998.]//

(5) the owner or operator provides a notice to the commissioner, providing the following information: the types of materials to be recycled, the type and location of the storage units and recycling processes, and the annual quantities expected to be placed in land-based units. This notification must be updated when there is a change in the type of materials recycled or the location of the recycling process; and

[In subitem (5), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(v). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(v); as supported at 67 FR 11251-11254, March 13, 2002; also, to required RCRA Amendment 167 D – REVISED: "Mineral Processing Secondary Materials Exclusion" = 40 CFR 261.4(a)(17)(v); as supported at 63 FR 28556-28753, May 26, 1998.]//

(6) for purposes of this item, mineral processing spent materials must be the result of mineral processing and may not include any listed hazardous wastes. Listed hazardous wastes and characteristic hazardous wastes generated by nonmineral processing industries are not eligible for the exemption in this item.

[In subitem (6), the MPCA adopts language corresponding to 40 CFR 261.4(a)(17)(vi). This change relates to RCRA Amendment 199.3: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.4(a)(17)(vi); as supported at 67 FR 11251-11254, March 13, 2002; also, to required RCRA Amendment 167 D – REVISED: "Mineral Processing Secondary Materials Exclusion" = 40 CFR 261.4(a)(17)(vi); as supported at 63 FR 28556-28753, May 26, 1998.]//

Subp. 2. **Special requirements.** The following waste is exempt from the general requirements of this chapter if managed as specified:

A. waste collected as a result of a household hazardous waste management program under part 7045.0310;

B. spent or waste household batteries collected under part 7045.0686;

C. waste collected as a result of a very small quantity generator hazardous waste collection program under part 7045.0320;

D. feedstocks and by-products under part 7045.0125, subparts 5 and 6;

E. comparable fuels or comparable syngas fuels that meet the specifications and other requirements of Code of Federal Regulations, title 40, section 261.38, as amended, which is adopted and incorporated by reference; ~~and~~

[In item E, the MPCA deletes the word "and" to accommodate this expanded list.]//

F. universal waste managed under part 7045.1400~~.~~; and

[In item F, the MPCA replaces a period with a semicolon and adds the word "and" to accommodate this expanded list.]//

G. hazardous waste containing radioactive waste when it meets the eligibility criteria and conditions of Code of Federal Regulations, title 40, part 266, subpart N, Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation and Disposal, as amended. This exemption also pertains to:

(1) any mixture of a waste and an eligible radioactive mixed waste; and

(2) any waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

Waste exempted under this item must meet the eligibility criteria and specified conditions in Code of Federal Regulations, title 40, sections 266.225 and 266.230 (for storage and treatment), as amended, and 266.310 and 266.315 (for transportation and disposal), as amended. Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

[In item G, the MPCA adopts an exemption for radioactive waste mixtures that corresponds to federal regulations found at 40 CFR 261.3(h)(1-3). The exemption is not required to maintain program equivalency but the MPCA believes that it is a reasonable clarification of the existing State hazardous waste requirements. Minnesota Statute, section 116.06, subdivision 11, says that hazardous waste does not include "source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended." However, mixtures of radioactive waste and hazardous waste are regulated under the land disposal restrictions in part 7045.1390 of this chapter. This amendment clarifies that the EPA regulations apply to such mixtures. This change relates to RCRA Amendment 192A.2: "Mixture and Derived-From Rules Revisions" = 40 CFR 261.3(h)(1-3); as supported at 66 FR 27266-27297, May 16, 2001.]//

7045.0121 TREATABILITY STUDY EXEMPTIONS.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Facilities and sample handling.** A mobile treatment unit may qualify as a laboratory or testing facility subject to requirements of this subpart. Where a group of mobile treatment units are located at the same site, the limitations specified in this subpart apply to the entire group of mobile treatment units involved in treatability studies collectively as if the group were one mobile treatment unit. Samples undergoing treatability studies and the laboratory or testing facility conducting the treatability studies, to the extent the facilities are engaged directly in treatability studies and are not otherwise subject to the Resource Conservation and Recovery Act requirements, United States Code, title 42, section 6901 et seq., as amended, are not subject to any requirements of Code of Federal Regulations, title 40, part 124, as amended; parts 7045.0102 to 7045.0685 except this part and applicable references; ~~parts 7023.9000 to 7023.9050; 7045.1300 to 7045.1380~~ part 7045.1390; chapter 7001; or to the notification requirements of the Resource Conservation and Recovery Act, United States Code, title 42, section 6930, as amended, providing that the conditions in items A to K are met.

[In subpart 3, the MPCA deletes a citation to chapter 7023 that was repealed and is no longer applicable. There are several corrections to this citation in this rulemaking. The MPCA also provides the replacement citation for a repealed range of rules.]//

[For text of items A to K, see M.R.]

7045.0125 MANAGEMENT OF WASTE BY USE, REUSE, RECYCLING, AND RECLAMATION.

[For text of subps 1 to 3a, see M.R.]

Subp. 4. **Management of specific hazardous wastes.** Management of the following wastes when recycled, is not subject to regulation under parts 7045.0205 to 7045.0695 and ~~7045.1300 to 7045.1380~~ 7045.1390:

[In subpart 4, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of items A and B, see M.R.]

C. scrap metal and excluded scrap metal;

[In item C, the MPCA is extending the exclusion of scrap metal to also include "excluded scrap metal." The corresponding federal exclusion is found at 40 CFR 261.4(a)(13). A definition of "excluded scrap metal" is being added in this rulemaking in part 7045.0020 and includes several categories of scrap metal that are also being defined through these amendments. Because excluding additional types of scrap metal makes the existing rules less stringent, the MPCA is not required to adopt this provision of the federal regulations to maintain authorization. However, the MPCA believes it is reasonable to exclude those types of wastes because they do not present an environmental risk when properly recycled. This change relates to RCRA Amendment 157.6: "Land Disposal Restrictions Phase IV--Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions" = 40 CFR 261.4(a)(13) and 40 CFR 261.6(a)(3)(ii), as supported at 62 FR 25998-26040, May 12, 1997.]//

[For text of items D and E, see M.R.]

F. coke and coal tar from the iron and steel industry that contain EPA Hazardous Waste No. K087 listed under part 7045.0135, subpart 3, item Q, subitem (2), (decanter tank tar sludge from coking operations) from the iron and steel production process EPA Hazardous Waste Nos. K060, K087, K141, K142, K143, K144, K145, K147, and K148, and any wastes from the coke by-products processes that are hazardous only because they exhibit the toxicity characteristic, specified in part 7045.0131, subpart 7, when, subsequent to generation, these materials are recycled to coke ovens, recycled to the tar recovery process as a feedstock to produce coal tar, or mixed with coal tar prior to the tar's sale or refining. This exclusion is conditioned on there being no land disposal of the wastes from the point they are generated to the point they are recycled to coke ovens, tar recovery, or refining processes or mixed with coal tar;

[The MPCA revises item F to delete the previous exclusion for coke and coal tar wastes and to adopt the more specific federal exclusion found at 40 CFR 261.4(a)(10). The adopted language is more specific regarding the types of wastes that are excluded and is required to maintain hazardous waste program authorization. This change is based on required RCRA Amendment 110.2: "Coke By-Products Listings" = 40 CFR 261.4(a)(10); as supported at 57 FR 37284-37306, August 18, 1992.]//

[For text of items G to M, see M.R.]

N. recyclable fuel, if the following conditions are met:

(1) the recyclable fuel is immediately removed from the generation site by a transporter in compliance with all applicable Minnesota Department of Transportation

requirements in Minnesota Statutes, sections 221.033 to ~~221.035~~ 221.0355, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199;

[In the amendments to subitem (1), the MPCA corrects a citation to a section of Minnesota Statutes that was repealed and provides the correct citation to the replacement section. The MPCA also follows advice from Minnesota's Department of Transportation to correct one of several citations to a range of regulations amended by the U.S. Department of Transportation.]//

[For text of subitems (2) to (4), see M.R.]

(5) if, because of a need to conduct waste analysis, recyclable fuel cannot be placed into the recycling process within 24 hours of receipt, the owner or operator of the fuel recycling facility shall contact the commissioner to request an extension of the storage time. A request for an extension can be for a single event or to address an ongoing need for additional time. A request for an extension must be submitted in writing to the commissioner and must include:

[For text of units (a) and (b), see M.R.]

(c) a description of how the waste will be managed during the storage period, including the measures that will be in place to prevent releases and how spills will be contained and cleaned up.

The commissioner's decision to approve holding the waste longer than 24 hours will be based on an evaluation of whether the owner or operator of the recycling facility can provide adequate protection of human health and the environment until the recyclable fuel is placed into the recycling process; ~~and~~

[In unit (c), at the end of item N, the MPCA removes "and" to accommodate this expanded list.]//

O. petroleum fuel filters if they are burned for energy recovery under subpart 3a, or recycled as scrap metal under item C, and are managed during accumulation and transportation ~~according to~~ in accordance with the requirements of part 7045.0990, subparts 3 to 5~~.~~; and

[In item O, the MPCA revises language to clarify the intended meaning. The MPCA also adds "and" to accommodate this expanded list.]//

P. circuit boards or shredded circuit boards being recycled, provided that they are:

(1) stored in containers sufficient to prevent a release to the environment prior to recovery; and

(2) free of mercury switches, mercury relays, and nickel-cadmium batteries and lithium batteries.

[In item P, the MPCA adopts a new exclusion for circuit boards that are being recycled. The MPCA has for many years excluded circuit boards that are being recycled from regulation by considering them to be scrap metal (which is excluded from regulation in the existing rules) and this amendment merely formalizes that previous interpretation. The exclusion corresponds to 40 CFR 261.4(a)(14). Because this is an exclusion from regulation and makes the State rules less stringent, the adoption of this federal provision is optional. However, the MPCA believes that adopting this amendment is reasonable as it clarifies the MPCA's existing interpretation of this rule. The MPCA also believes that it is reasonable to facilitate the recycling of circuit boards because proper recycling of circuit boards is protective of human health and the environment. This change relates to optional RCRA

Amendment 157.6: "Land Disposal Restrictions Phase IV--Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions" = 40 CFR 261.4(a)(14); as supported at 62 FR 25998-26040, May 12, 1997.]//

Subp. 5. **Requirements for use of hazardous waste as feedstock.**

A. Except as provided in items B to D, hazardous wastes that are shown to be recycled by being used in a manner specified in subitems (1) to (3), are not subject to regulation under parts 7045.0205 to 7045.0990 and ~~7045.1300 to 7045.1380~~ 7045.1390. This subpart does not apply to wastes being accumulated speculatively as defined in part 7045.0020, subpart 84a, or being managed by use constituting disposal as regulated under part 7045.0665 or burning for energy recovery, as regulated in part 7045.0692. Hazardous wastes are considered to be used as feedstock if they are:

[The MPCA provides the replacement citation for a repealed range of rules.]//

[For text of subitems (1) to (3), see M.R.]

[For text of item B, see M.R.]

C. Transporters of hazardous wastes for use as feedstock must comply with all applicable requirements of Minnesota Statutes, sections 221.033 and ~~221.034~~ 221.0341, and with ~~221.035~~ 221.0355 if applicable, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199, as amended.

[In item C, the MPCA corrects a citation to sections of Minnesota Statutes that were repealed and provides citations to the replacement sections. The MPCA also follows advice from Minnesota's Department of Transportation to correct one of several citations to a range of regulations amended by the U.S. Department of Transportation.]//

[For text of item D, see M.R.]

Subp. 6. **Requirements for reclamation of specific hazardous waste.**

A. A by-product or a sludge that is hazardous only because it exhibits a characteristic of hazardous waste as defined in part 7045.0131 and is reclaimed is subject to only the following requirements:

(1) A generator of such a hazardous waste is subject to the requirements of subpart 5, item B.

(2) Transporters of such a hazardous waste must comply with all applicable requirements of Minnesota Statutes, sections 221.033 and ~~221.034~~ 221.0341, and with ~~221.035~~ 221.0355 if applicable, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199, as amended.

[In subitem (2), the MPCA corrects a citation to sections of Minnesota Statutes that were repealed and provides citations to the replacement sections. The MPCA also follows advice from Minnesota's Department of Transportation to correct one of several citations to a range of regulations amended by the U.S. Department of Transportation.]//

[For text of subitem (3), see M.R.]

[For text of item B, see M.R.]

[For text of subps 7 and 8, see M.R.]

Subp. 9. **Facility requirements.** Unless exempted specifically in this part or parts 7045.0692 and 7045.0790 to 7045.0990, owners ~~or~~ and operators of facilities ~~which~~ that recycle hazardous waste are subject to the following requirements:

[In subpart 9, the MPCA revises language to clarify the intended meaning.]//

A. If the recyclable hazardous waste is stored before it is recycled, the owners or operators are subject to the requirements of parts 7045.0450 to 7045.0534, 7045.0540, 7045.0547, 7045.0548, 7045.0552 to 7045.0632, 7045.0645, 7045.0647, 7045.0648, 7045.0652 to 7045.0686, and ~~7045.1300 to 7045.1380~~ 7045.1390, and chapter 7001. The recycling process itself is exempt from regulation except as provided in item C.

[In item A, the MPCA deletes a citation to chapter 7023 that has been repealed and also provides the replacement citation for a range of rules being repealed in this rulemaking (the land disposal restrictions being added at part 7045.1390). The MPCA also adopts a number of cross references to requirements being added to the rules in this rulemaking. The references being cited identify rules that provide standards for organic air emissions from tanks, surface impoundments and containers and are discussed elsewhere in this SONAR where those air emission standards are being adopted. Further information about the added citations can also be found at required RCRA Amendment 154, 154-1.39: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 261.6(c)(1); as supported at 59 FR 62896-62953, December 6, 1994; and as amended by 60 FR 26828-26829, May 19, 1995; 60 FR 50426-50430, September 29, 1995; 60 FR 56952-56954, November 13, 1995; 61 FR 4903-4916, February 9, 1996; 61 FR 28508-28511, June 5, 1996; and 61 FR 59932-59997, November 25, 1996.]//

[For text of items B to D, see M.R.]

[For text of subps 10 to 13, see M.R.]

7045.0127 RESIDUES IN EMPTY CONTAINERS AND EMPTY INNER LINERS.

Subpart 1. **Scope.** Any hazardous waste remaining in an empty container or an empty inner liner removed from an empty container, as defined in subparts 2 to 4 is not subject to regulation under parts 7045.0102 to 7045.1030 and ~~7045.1300 to 7045.1380~~ 7045.1390, or a hazardous waste facility permit. Any hazardous waste in a container or an inner liner removed from a container that is not empty, as defined in subparts 2 to 4, is subject to regulation under parts 7045.0102 to 7045.1030 and ~~7045.1300 to 7045.1380~~ 7045.1390, and the agency's permitting procedures.

[In subpart 1, the MPCA provides the replacement citations for repealed ranges of rules.]//

Subp. 2. **Empty containers or inner liners; definition.** A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste in part 7045.0135, subpart ~~2, 3, or 4, item E~~ 1a, items B and C, and Code of Federal Regulations, title 40, section 261.33(e), as incorporated in part 7045.0135, is empty if:

[In subpart 2, the MPCA replaces references to part 7045.0135, subparts 2, 3, and 4 (lists of hazardous wastes) which are being repealed and replaced with new citations that address the same requirements. The MPCA intends that the same lists are

addressed as in the former rules. By referencing 40 CFR 261.33(e), the MPCA provides a more accurate citation to a specific list in the federal regulations than can be provided by a reference to its State counterpart. The list of commercial chemical products in the federal regulations is being incorporated by reference in part 7045.0135 but that State citation is too general to identify this specific list. The final phrase in the amendment to subpart 2 refers to the rule part incorporating the federal reference so that any associated conditions of incorporation can be assessed.]//

[For text of items A to D, see M.R.]

Subp. 3. **Other empty containers or inner liners.** A container or inner liner that has held an acute hazardous waste identified in part 7045.0135, subpart ~~2, 3, or 4, item E~~ 1a, items B and C, and Code of Federal Regulations, title 40, section 261.33(e), as incorporated in part 7045.0135, is empty if:

[In subpart 3, the MPCA replaces references to part 7045.0135, subparts 2, 3, and 4 (lists of hazardous wastes) which are being repealed and replaced with new citations that address the same requirements. The MPCA intends that the same lists are addressed as in the former rules. By referencing 40 CFR 261.33(e), the MPCA provides a more accurate citation to a specific list in the federal regulations than can be provided by a reference to its State counterpart. The list of commercial chemical products in the federal regulations is being incorporated by reference in part 7045.0135 but that State citation is too general to identify this specific list. The final phrase in the amendment to subpart 2 refers to the rule part incorporating the federal reference so that any associated conditions of incorporation can be assessed.]//

[For text of items A to C, see M.R.]

[For text of subp 4, see M.R.]

7045.0131 CHARACTERISTICS OF HAZARDOUS WASTE.

Subpart 1. **In general.** A waste which is not excluded from regulation as a hazardous waste under part 7045.0120 is a hazardous waste if it exhibits ignitability, corrosivity, reactivity, toxicity, lethality, or is an oxidizer, as described in subparts 2 to 7. A hazardous waste which is identified by a characteristic in this part is assigned every hazardous waste number that is applicable. This number must be used in complying with the notification requirements of section 3010 of the federal Resource Conservation and Recovery Act and all applicable record keeping and reporting requirements under parts ~~7023.9000 to 7023.9050,~~ 7045.0205 to ~~7045.0642 and 7045.1300~~ 7045.0651 and 7045.1390, and chapter 7001. For purposes of this part, the commissioner shall consider a sample obtained using any of the applicable sampling methods specified in Code of Federal Regulations, title 40, part ~~260~~ 261, Appendix I ~~or part 261, Appendix II~~, as ~~amended~~ incorporated in part 7045.0155, or Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0065, item D, to be a representative sample.

In subpart 1, the MPCA deletes a citation to chapter 7023 because that rule has been repealed. The MPCA is also revising a citation to a range of rules that has changed as parts were added as part of this rulemaking, and that included an error. The error was that previous reference to "…7045.0205 to 7045.0642 and 7045.1300" needed to

be extended to include added parts. Also, it should have included all of the land disposal restrictions—not just those found in part 7045.1300. The MPCA discovered this error as a result of this rulemaking and is changing it to include part 7045.1390, which incorporates all of the land disposal restrictions by reference. The MPCA is correcting an additional error by changing "40 CFR 260" to "40 CFR 261." 40 CFR Part 261 is the correct citation for the sampling methods identified in the corresponding federal regulations. The MPCA is changing a reference from Part 260, Appendix I to Part 261, Appendix I because that is the accurate cite. Finally, the MPCA is providing a reference to the State rule that incorporates and establishes any conditions regarding the federal Appendices to Part 261.]//

Subp. 2. **Ignitability.** A waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

[For text of items A and B, see M.R.]

C. it is an ignitable compressed gas as defined in Code of Federal Regulations, title 49, section ~~173.300~~ 173.115, as amended, and as determined by the test methods described in that regulation or equivalent test methods approved by the commissioner under part 7045.0075, subpart 1.

[In item C, the MPCA follows advice from Minnesota's Department of Transportation to correct an error in a citation to a regulation that was amended by the U.S. Department of Transportation.]//

A waste that exhibits the characteristic of ignitability has the hazardous waste number of D001.

[For text of subp 3, see M.R.]

Subp. 4. **Corrosivity.** A waste exhibits the characteristic of corrosivity if a representative sample of the waste has any of the following properties:

A. It is aqueous and has a pH less than or equal to 2.0 or greater than or equal to 12.5, as determined by a pH meter using ~~either the test method~~ Method 9040C in ~~the~~ "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods ~~issued by the United States Environmental Protection Agency~~," EPA publication ~~number~~ SW-846 ~~(First Edition, 1980 as updated by Revisions A (August 1980), B (July 1981), and C (February 1982) or Second Edition, 1982) also described in Methods for Chemical Analysis of Water and Waste issued by the Environmental Monitoring and Support Laboratory, publication number 600/7-79-020 (March 1979), or an equivalent test method approved by the commissioner under the procedures set forth in part 7045.0075, subpart 1~~, incorporated by reference in part 7045.0065, item D; or

[In item A, the MPCA is revising the rule to accurately identify the reference documents used in the determination of the corrosivity characteristic. This amendment is required to maintain consistency with the federal counterpart found at 40 CFR 261.22(a)(1). This change relates to required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 261.22(a)(1); as supported at 58 FR 46040-46051, August 31, 1993. The MPCA also provides a reference to part 7045.0065, item D, which incorporates and establishes any conditions regarding the specified test method.]//

B. It is liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 degrees Celsius (130 degrees Fahrenheit) as determined by the test method specified in National Association of Corrosion Engineers

Standard TM-01-69 as standardized in" Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," ~~issued by the United States Environmental Protection Agency,~~ EPA publication ~~number~~ SW-846 ~~(First Edition, 1980 as updated by Revisions A (August 1980), B (July 1981), and C (February 1982) or Second Edition, 1982) or an equivalent test method approved by the commissioner under the procedures set forth in part 7045.0075, subpart 1~~, incorporated by reference in part 7045.0065, item D.

[In item B, the MPCA is revising the rule to accurately identify the reference documents used in the determination of the corrosivity characteristic. This amendment is required to maintain consistency with the federal counterpart found at 40 CFR 261.22(a)(2). This change relates to required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 261.22(a)(2); as supported at 58 FR 46040-46051, August 31, 1993. The MPCA also provides a reference to part 7045.0065, item D, which incorporates and establishes any conditions regarding the specified test method.]//

A waste that exhibits the characteristic of corrosivity has the hazardous waste number of D002.

Subp. 5. **Reactivity.** A waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

[For text of items A to G, see M.R.]

H. it is a forbidden explosive as defined in Code of Federal Regulations, title 49, section ~~173.51~~ 173.54, as amended, a ~~Class A~~ Division 1.1 or 1.2 explosive as defined in Code of Federal Regulations, title 49, section ~~173.53~~ 173.50, as amended, or a ~~Class B~~ Division 1.2 or 1.3 explosive as defined in Code of Federal Regulations, title 49, section ~~173.88~~ 173.50, as amended.

A waste that exhibits the characteristic of reactivity has the hazardous waste number of D003.

[In item H, the MPCA follows advice from Minnesota's Department of Transportation to revise language and citations to conform with U.S. Department of Transportation amendments to the cited material.]//

[For text of subp 6, see M.R.]

Subp. 7. **Toxicity.** Toxicity is determined as follows:

A. A waste, except manufactured gas plant waste, exhibits the characteristic of

[In this line of item A, the MPCA adds an exception for manufactured gas plant waste to the regulation of the toxicity characteristic. This exception corresponds to the federal regulations found at 40 CFR 261.24(a). Although this is an optional amendment, the MPCA is adopting it because the MPCA concurs with the reasoning presented by the EPA and because adopting the federal exemption will maintain consistency with the federal regulations. This change relates to RCRA Amendment 199.4: "Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste" = 40 CFR 261.24(a); as supported at 67 FR 11251-11254, March 13, 2002.]//

toxicity if, using the ~~test methods described in Code of Federal Regulations, title 40, part 261, appendix II, as amended, or equivalent methods approved by the commissioner under the procedures in part 7045.0075, subpart 1~~ Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part

7045.0155, subpart 1, item B, the extract from a representative sample of the waste contains any of the contaminants listed in subpart 8 at a concentration equal to or greater than the respective ~~value given in that table~~ contaminant values listed. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this evaluation.

[In item A, the MPCA is revising the rule to accurately identify the reference documents used in the determination of the toxicity characteristic. The existing rule referenced the test method where it was formerly located in 40 CFR part 261, Appendix II. The federal regulations have changed so that this test method is no longer found at 261, Appendix II so the MPCA is here identifying the name of the test method and referring to the State rule where the test method is being incorporated by reference. This amendment is required to maintain consistency with the federal counterpart found at 40 CFR 261.24(a). This change relates to required RCRA Amendment 126.6: "Testing and Monitoring Activities" = 40 CFR 261.24(a); as supported at 58 FR 46040-46051, August 31, 1993. The MPCA also refers to part 7045.0065, item D that incorporates and establishes any conditions regarding the specified test method. In this rulemaking, the MPCA is also deleting the phrase "or equivalent methods approved by the commissioner under 7045.0075, subpart 1." The MPCA believes that this is a reasonable deletion that does not change the effect of the rule or the availability of this option. The process for obtaining approval for the use of alternative test methods is still provided in 7045.0075. However, the federal regulations that correspond to this part have been amended to remove a specific reference to the petition process. The EPA explains in the August 31, 1993 Federal Register that this is a clarifying change and that removing this term does not alter the availability of the petition process to the regulated community.]//

[For text of items B and C, see M.R.]

[For text of subp 8, see M.R.]

7045.0133 EXEMPTION FROM REGULATION DUE TO LETHALITY.

Subpart 1. **In general.** A generator's waste that exhibits the characteristics of lethality as described in part 7045.0131, subpart 6, may be exempted from regulation under parts 7045.0102 to ~~7045.1380~~ 7045.1390 if the generator can demonstrate to the satisfaction of the agency that the waste is not capable of posing a present or potential hazard to human health and the environment if the waste were to be improperly treated, transported, stored, disposed, or managed under routine waste management methods.

[In subpart 1, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

Subp. 2. **Factors to be considered.** In demonstrating that a waste should be exempt from regulation under parts 7045.0102 to ~~7045.1380~~ 7045.1390, the generator must present information related to the following factors:

[In subpart 2, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items A to G, see M.R.]

7045.0135 LISTS OF HAZARDOUS WASTES.

Subpart 1. [See repealer.]

[In this part, the MPCA is incorporating by reference the corresponding federal regulations that list hazardous wastes. Maintaining equivalence with the federal lists of hazardous wastes is an essential component of maintaining the MPCA's program authorization from EPA. The State rules must, at a minimum, include the same wastes that are listed in the federal regulations. While the State rules may be more comprehensive, they cannot be less. The MPCA has, with the exception of a State listing for PCB wastes, maintained lists identical to the corresponding federal regulations and continuing that commitment in this rulemaking. The MPCA believes that it is reasonable to follow the federal lists closely, whether the EPA adds or removes wastes from the lists, to provide consistency between states to support interstate commerce. It would be difficult for regulators and the regulated community to manage wastes shipped between states with different lists of wastes as the EPA adds or removes wastes from regulation. To efficiently match federal changes, the MPCA believes it is reasonable to incorporate the federal lists prospectively by reference. This provides the regulated community with the most current and accurate list of wastes that are regulated as hazardous in Minnesota. The reasonableness of adoption by reference as amended, is further discussed in part IV of this Statement. In order to incorporate the corresponding federal lists, the MPCA repealed existing subparts 1, 2, 2a, 3 and 4.]//

Subp. 1a.**Incorporation by reference of federal regulations.** The following lists of hazardous wastes found in Code of Federal Regulations, title 40, part 261, subpart D, as amended, are incorporated by reference:

A. section 261.30, general;

B. section 261.31, hazardous wastes from nonspecific sources;

[In subpart 1a, the MPCA incorporates by reference, as amended, the hazardous waste lists found in 40 CFR 261, subpart D. In items A and B, the MPCA incorporates existing 40 CFR sections 261.30 (general listing information) and 261.31 (hazardous waste from nonspecific sources), and hazardous wastes added by EPA in the future. This incorporation picks up federal listings not yet adopted by Minnesota. Further information regarding one such listing addressing petroleum refining wastes can be found at optional RCRA Amendment 187: "Petroleum Refining Process Wastes – Clarification" = 40 CFR 261.31(a)/table; as supported at 65 FR 36365-36367, June 8, 2000.]//

C. section 261.32, hazardous wastes from specific sources;

[In item C, the MPCA incorporates 40 CFR section 261.32 which identifies hazardous wastes from specific sources. The following RCRA Amendments discuss hazardous wastes added to this list since 1992:

- **required RCRA Amendment 110.3: "Coke By-Products Listings" = 40 CFR 261.32; as supported at 57 FR 37284-37306, August 18, 1992;**
- **required RCRA Amendment 115.2: "Chlorinated Toluenes Production Waste Listing" = 40 CFR 261.32; as supported at 57 FR 47376-47386, October 15, 1992;**
- **Optional RCRA Amendment 159.2: "Conformance With the Carbamate Vacatur" = 40 CFR 261.32/table; 62 FR 32974-32980, June 17, 1997;**

- **RCRA Amendment 183.2: "Land Disposal Restrictions Phase IV -- Technical Corrections" = 40 CFR 261.32; as supported at 64 FR 56469-56472, October 20, 1999;**
- **Optional RCRA Amendment 185.4: "Organobromine Production Wastes Vacatur" = 40 CFR 261.32/table; as supported at 65 FR 14472-14475, March 17, 2000; and**
- **required RCRA Amendment 189.4: "Chlorinated Aliphatics Listing and LDRs for Newly Identified Wastes" = 40 CFR 261.32/table; as supported at 65 FR 67068-67133, November 8, 2000.]//**

D. section 261.33, discarded commercial chemical products, off-specification species, container residues, and spill residues thereof;

[In item D, the MPCA incorporates 40 CFR section 261.33. The following RCRA Amendments discuss hazardous wastes added to this list since 1994:

- **required RCRA Amendment 134.2: "Correction of Beryllium Powder (P015) Listing" = 40 CFR 261.33(e); as supported at 59 FR 31551-31552, June 20, 1994;**
- **Optional RCRA Amendment 159.3: "Conformance With the Carbamate Vacatur" = 40 CFR 261.33(f); 62 FR 32974-32980, June 17, 1997; and**
- **Optional RCRA Amendment 185.5: "Organobromine Production Wastes Vacatur" = 40 CFR 261.33(f)/table; as supported at 65 FR 14472-14475, March 17, 2000.]//**

E. section 261.35, deletion of certain hazardous waste codes following equipment cleaning and replacement; and

[In item E, the MPCA incorporates 40 CFR section 261.35. This federal list provides conditions under which certain listed wastes would not be regulated. The MPCA had previously included this federal list in the State rules at part 7045.0145.]//

F. section 261.38, comparable/syngas fuel exclusion.

[In item F, the MPCA incorporates 40 CFR section 261.38 This is a federal exclusion that specifies conditions relating to comparable/syngas fuel. The MPCA has, in a previous rulemaking, adopted an exclusion for comparable/syngas fuel and believes that it is reasonable to incorporate this supporting federal list into the State rules.]//

Subp. 2. [See repealer.]

Subp. 2a. [See repealer.]

Subp. 2b. Additions, modifications, or exceptions to incorporated provisions.

[In new subpart 2b, the MPCA provides exceptions to its incorporations in subpart 1a.]//

A. Part 7045.0090, adoption and incorporation by reference, also applies.

[In new item A, the MPCA refers readers to a general part of the State hazardous waste rules that establishes conditions and criteria governing the adoption and incorporation by reference of federal rules into State rules.]//

B. The hazardous waste number in the "U" listing for paraldehyde in Code of Federal Regulations, title 40, section 261.33(f)/Table, should be U182.

C. In Code of Federal Regulations, title 40, section 261.38, Table 1, under "metals," in the listing for "cadmium, total," "ND" is the "composite value" and "1.2" is the "Concentration limit."

[In items B and C, the MPCA lists corrections offered by EPA guidance for states that adopt RCRA rules by reference. The EPA has identified errors in two lists. The MPCA follows the EPA guidance to correct these errors when adopting these lists: item B clarifies that the hazardous waste number in the "U" listing for Paraldehyde should be U182, and item C clarifies that in 40 CFR 261.38, table 1, under "metals," in the listing for "cadmium, total," "ND" is the "composite value" and "1.2" is the "Concentration limit." The EPA had shifted the data in this row to the right one column in the table. The EPA compiles and periodically corrects errors in the federal regulations. These corrections should become moot when that occurs.]//

Subp. 3. [See repealer.]

Subp. 4. [See repealer.]

Subp. 5. **PCB wastes.** Requirements for PCB wastes are as follows:

[In existing subpart 5, the MPCA retains its listing of PCB waste as a hazardous waste. Minnesota Rules differ from the federal regulations which do not list PCB as a hazardous waste; rather, the EPA regulates PCB waste under the Toxic Substances Control Act (TSCA). In this subpart, the MPCA is revising existing language to improve clarity and to improve consistency with changes in Minnesota Statutes, section 116.07, subdivision 2b, for managing PCB waste. The specific changes are discussed in the paragraphs below.]//

A. For ~~the~~ purposes of this ~~part, "PCB" means the class of organic compounds known as polychlorinated biphenyls at a concentration of 50 parts per million or greater and includes any of several compounds produced by replacing one or more hydrogen atoms on the biphenyl molecule with chlorine. "PCB" does not include chlorinated biphenyl compounds that have functional groups attached other than chlorine.~~ subpart:

[The MPCA revises item A to provide definitions of terms used in this subpart. In addition, the MPCA has moved the definition of PCB above to general definitions in part 7045.0020 because PCB is used elsewhere in chapter 7045. The specific level at which a PCB becomes a hazardous waste (50 parts per million or greater) is provided in new subitem (2) below. This is not a change in the regulatory status of PCB wastes in Minnesota, the same level was specified in revised item A.]//

(1) "commercial storer of PCB waste" has the meaning given in Code of Federal Regulations, title 40, section 761.3, as amended;

[In subitem (1), the MPCA defines a "commercial storer of PCB waste" based on the corresponding federal TSCA definition. The MPCA adds this definition because in this rulemaking this term is added to part 7045.0208, item G, which allows certain generators to deliver their PCB waste to a commercial storer of PCB waste.]//

(2) "PCB" means a substance that contains PCB's at a concentration of 50 parts per million or greater;

[In subitem (2), the MPCA defines the point at which PCB's, generally defined in part 7045.0020, subpart 71a, become a listed hazardous waste in Minnesota. It is important to provide the threshold at which PCB's become regulated as a listed hazardous waste so generators can properly manage their PCB wastes. The MPCA is not changing the "50 parts per million or greater" concentration at which PCB's become a hazardous waste.]//

(3) "PCB lighting ballast" means a device that electrically controls light fixtures and that contains a PCB small capacitor or potting material that contains PCB's; and

[In subitem (3), the MPCA defines PCB lighting ballast because it is a term used in item D and because Minnesota Statutes, section 116.07, subdivision 2b(a), which addresses the management of PCB wastes, states that PCB lighting ballasts are subject to MPCA requirements. The definition of "PCB small capacitor" limits the amount of dielectric material in a PCB lighting ballast. This definition applies to PCB lighting ballasts used in any type of lighting fixture. Potting material is an electrical insulating material used in lighting ballasts which may contain PCB's and is also identified as a potential PCB waste in the TSCA regulations at 40 CFR 761.3. The MPCA believes it is reasonable to ensure that all lighting ballasts that contain PCB's (including ballasts that contain PCB's in the potting material) are properly managed.]//

(4) "PCB small capacitor" means a capacitor that contains less than 1.36 kilograms (3 pounds) of PCB dielectric fluid.

[In subitem (4) the MPCA uses the same definition of "PCB small capacitor" used by TSCA in 40 CFR 761.3, because Minnesota Statutes, section 116.07, subdivision 2b(a), states that PCB small capacitors are subject to MPCA regulation. The MPCA believes that using the federal definition is reasonable to ensure consistency as these types of wastes are transported between states.]//

B. PCB materials or items are hazardous waste if and when they are discarded or stored prior to being discarded.

C. A generator of PCB wastes ~~who stores on-site prior to disposal~~ is subject to the requirements of Minnesota Statutes, section 116.07, subdivision 2b, and is exempt from the agency's hazardous waste ~~storage facility permit~~ requirements ~~and parts 7045.0292 and 7045.0450 to 7045.0642 for the storage of those wastes~~ except for ~~the following requirements~~:

[In item C, the MPCA revises language to clarify that Minnesota Statutes, section 116.07, subdivision 2b, apply to generators of PCB waste. Minnesota amended this statute to address issues of duplication and overlap within the State program for regulating PCB wastes. Most of the management requirements that apply to PCB wastes are imposed through TSCA and are applicable regardless of Minnesota rules or statutes. The statute imposes Minnesota-specific requirements for certain types of PCB wastes and management activities. The revised statute created confusion regarding the application of these subpart 5 requirements. In this rulemaking, the MPCA believes it is reasonable to delete obsolete requirements and to clarify which requirements apply. A person who generates waste containing PCB at a concentration of 50 parts per million or greater is subject to the federal TSCA requirements and is also subject to Minnesota's hazardous waste rules for proper disposal, licensing, and fees as described in this item.]//

~~(1) the storage standards described in Code of Federal Regulations, title 40, section 761.65, as amended; and~~

~~(2) the requirements applicable to the generator based on generator size of part 7045.0292, subpart 1, 5, or 6, regarding proper labeling, personnel training, preparedness, prevention, and contingency planning. However, PCB items in use or in storage prior to disposal that are labeled as PCBs according to Code of Federal Regulations, title 40, sections 761.40, 761.45, and 761.65, as amended, are not subject to the hazardous waste labeling requirements of part 7045.0292.~~

(1) the hazardous waste management requirements of part 7045.0208;

(2) the evaluation requirements of part 7045.0214;

(3) the licensing requirements of parts 7045.0225 to 7045.0250; and

(4) the fee requirements of chapter 7046, unless a generator demonstrates performance of a PCB phase-out agreement under Minnesota Statutes, section 116.07, subdivision 2b, paragraph (b).

[The MPCA replaces existing subitems (1) and (2) with new subitems (1) to (4) which affirm the State requirements that apply to generators of PCB waste. These amendments are reasonable in order to clarify in rules the requirements already established in Minnesota Statutes, section 116.07, subdivision 2b(a). This statute requires that PCB generators comply with the State hazardous waste requirements for proper disposal, licensing and fees in addition to the federal requirements of TSCA. New subitems (1) and (2) address requirements that relate to disposing of hazardous waste. Subitem (1) refers to part 7045.0208, which is the rule that lists acceptable waste disposal options, including a new item G that specifically addresses PCB waste. Pointing to the existing requirement to evaluate waste in subitem (2) is reasonable because properly managing PCB waste requires evaluating the concentration of PCB in that waste. Subitem (3) identifies the rule parts that govern the issuance of licenses described in the governing statute. Finally, subitem (4) describes the hazardous waste fee provisions described in the statute. The intent is to clarify the applicability of existing requirements.]//

D. ~~PCB wastes may be transported without a hazardous waste manifest if transportation is via the owner's own vehicle and if that transportation is between the owner's facilities or premises.~~ In addition to the requirements of item C, a generator or commercial storer of PCB waste who generates or stores PCB ballasts or PCB small capacitors must comply with the requirements of part 7045.0566, subpart 2. A commercial storer of PCB waste storing only PCB ballasts and PCB small capacitors is not subject to the facility standards in parts 7045.0450 to 7045.0651, except for the requirements of part 7045.0566, subpart 2, or to the hazardous waste facility permit requirements in chapter 7001.

[In item D, the MPCA is deleting the requirement regarding the transportation of PCB wastes by the owner's own vehicle. This provision is no longer needed because of the clarification regarding the application of the federal TSCA requirements governing PCB management. The federal regulations have always applied and have provided more comprehensive requirements regarding transportation. It is appropriate to delete this one particular transportation requirement to eliminate the potential misunderstanding that this is the only transportation related requirement that applies. The MPCA is adding new language to item D to address the generators or commercial storers of PCB waste, PCB ballasts or PCB small capacitors. Minnesota Statute section 116.07, subdivision 2b(a), establishes that PCB small capacitors and lighting ballasts are, in addition to the requirements for licensing, fees and proper disposal, also subject to State on-site accumulation requirements. The statute allows the MPCA to apply appropriate accumulation standards. The accumulation standards applied to most hazardous wastes are found at part 7045.0292 and are based on generator size. They are protective for all types and characteristics of wastes that may be generated, including liquids and highly reactive

and ignitable wastes. The MPCA believes it is more appropriate to apply the preparedness and prevention rules in part 7045.0566 to the accumulation of PCB ballast and capacitors. These rules, while less prescriptive than those in part 7045.0292, provide the MPCA with the authority to require reasonable precautions for the storage of PCB ballasts and capacitors. The MPCA believes that the requirements in part 7045.0566, subp. 2 provide adequate environmental protection for the accumulation of these types of wastes.]//

E. Thermal treatment of PCB wastes at concentrations less than 500 parts per million. High efficiency boilers as defined in Code of Federal Regulations, title 40, section 761.60(a), as amended, which are used for treatment of mineral oil dielectric fluid containing less than 500 ppm PCB, are exempt from the agency's hazardous waste facility permit requirements in chapter 7001 and parts ~~7023.9000 to 7023.9050,~~ 7045.0292~~,~~ and 7045.0450 to ~~7045.0642 for storage and treatment of those wastes~~ 7045.0651, except for the following requirements:

[In item E, the MPCA deletes a citation to chapter 7023 that was repealed by another MPCA rulemaking. The MPCA also corrects a citation to a range of rules that changed as parts were added.]//

(1) parts 7045.0526 and 7045.0528;

(2) parts 7045.0556 and 7045.0558;

(3) parts 7045.0564 to 7045.0588; and

(4) parts 7045.0594 and 7045.0596.

[In subitems (1) to (4), the MPCA adds "and" to clarify that all of the requirements of the listed rule ranges apply to thermal treatment in this item]//

F. PCB wastes have the hazardous waste number of MN03.

7045.0139 BASIS FOR LISTING HAZARDOUS WASTES.

Subpart 1. **General.** ~~The tables in subpart 2 list the constituents which caused the agency to list wastes as hazardous in part 7045.0135, subparts 2 and 3. The notation "N.A." indicates the waste is hazardous because it fails the test for the characteristics of ignitability, corrosivity, reactivity, or toxicity, and the listing of a chemical name is not applicable.~~ The basis for listing hazardous waste is found in part 7045.0155, subpart 1, item D, which incorporates Code of Federal Regulations, title 40, part 261, Appendix VII, Basis for Listing Hazardous Waste. Part 7045.0155, subpart 2, provides any applicable exceptions.

Subp. 2. [See repealer.]

[In part 7045.0139, the MPCA revises language to direct readers to a new part 7045.0150, Subpart 1, item D, which incorporates by reference the "basis for listing hazardous waste" in 40 CFR part 261, Appendix VII. The MPCA considered simply repealing part 7045.0139 in conjunction with the adoption of the same information in new part 7045.0150. However, the MPCA decided that there is value in retaining part 7045.0139, even though the text of the list is being deleted, because of the complexity of removing all existing cross references, and because this rule part still retains a listing of the topic in the chapter index which the MPCA believes will be an aid to readers.]//

7045.0141 HAZARDOUS CONSTITUENTS.

Subpart 1. **Scope.** ~~Hazardous constituents and their corresponding Chemical Abstract Service registry numbers and hazardous waste numbers, if available, are listed in subparts 2 to 22.~~ The hazardous constituents list is found in part 7045.0155, subpart 1, item E, which incorporates Code of Federal Regulations, title 40, part 261, Appendix VIII, Hazardous Constituents. Part 7045.0155, subpart 2, provides any applicable exceptions.

Subp. 2. [See repealer.]
Subp. 3. [See repealer.]
Subp. 4. [See repealer.]
Subp. 5. [See repealer.]
Subp. 6. [See repealer.]
Subp. 7. [See repealer.]
Subp. 8. [See repealer.]
Subp. 9. [See repealer.]
Subp. 10. [See repealer.]
Subp. 11. [See repealer.]
Subp. 12. [See repealer.]
Subp. 13. [See repealer.]
Subp. 14. [See repealer.]
Subp. 15. [See repealer.]
Subp. 16. [See repealer.]
Subp. 17. [See repealer.]
Subp. 18. [See repealer.]
Subp. 19. [See repealer.]
Subp. 20. [See repealer.]
Subp. 21. [See repealer.]
Subp. 22. [See repealer.]
Subp. 23. [See repealer.]

[In part 7045.0141, the MPCA revises language to point readers to a new part 7045.0150, Subpart 1, item E, which incorporates by reference the "hazardous constituents" list in 40 CFR part 261, Appendix VIII. The MPCA considered simply repealing part 7045.0141 in conjunction with the incorporation of the same information in new part 7045.0150. However, the MPCA decided that there is value in retaining part 7045.0141, even though the text of the list is being deleted, because of the complexity of removing all existing cross references, and because this rule part still retains a listing of the topic in the chapter index which the MPCA believes will be an aid to readers.]//

7045.0143 GROUNDWATER PROTECTION HAZARDOUS CONSTITUENTS LIST.

Subpart 1. **Scope.** ~~For the purposes of the groundwater protection requirements in parts 7001.0640, subpart 1, item D, subitem (2); and 7045.0484, subparts 12, item G, subitem (2), and 13, item E, the hazardous constituents are listed with their corresponding Chemical Abstract Service registry numbers in subparts 2 to 27. Where "total" is entered for the Chemical Abstract Service registry number, all species in the groundwater that~~

~~contain this element are included.~~ The groundwater protection hazardous constituents list is found in part 7045.0543, subpart 1, item D, which incorporates Code of Federal Regulations, title 40, part 264, Appendix IX, Ground Water Monitoring List. Part 7045.0543, subpart 2, provides any applicable exceptions.

Subp. 2. [See repealer.]

Subp. 3. [See repealer.]

Subp. 4. [See repealer.]

Subp. 5. [See repealer.]

Subp. 6. [See repealer.]

Subp. 7. [See repealer.]

Subp. 9. [See repealer.]

Subp. 10. [See repealer.]

Subp. 12. [See repealer.]

Subp. 13. [See repealer.]

Subp. 14. [See repealer.]

Subp. 15. [See repealer.]

Subp. 17. [See repealer.]

Subp. 20. [See repealer.]

Subp. 21. [See repealer.]

Subp. 23. [See repealer.]

Subp. 25. [See repealer.]

Subp. 27. [See repealer.]

[In part 7045.0143, the MPCA revises language to point readers to a new part 7045.0543, Subpart 1, item D, which incorporates by reference the "Groundwater Monitoring List" in 40 CFR part 264, Appendix IX. The MPCA considered simply repealing part 7045.0143 in conjunction with the incorporation of the same information in new part 7045.0543. However, the MPCA decided that there is value in retaining part 7045.0143, even though the text of the list is being deleted, because of the complexity of removing all existing cross references, and because this rule part still retains a listing of the topic in the chapter index which the MPCA believes will be an aid to readers.]//

7045.0155 APPENDICES TO IDENTIFICATION AND LISTING OF HAZARDOUS WASTE.

[In new part 7045.0150, the MPCA incorporates by reference federal appendices that relate to the identification and listing of hazardous waste.]//

Subpart 1. **Incorporation of federal regulations.** The following appendices found in Code of Federal Regulations, title 40, part 261, as amended, are incorporated by reference:

[In subpart 1, the MPCA is incorporating by reference appendices to 40 CFR part 261, as amended (to include future amendments). These appendices address sampling methods, the basis for listing hazardous wastes, and a list of hazardous constituents. These appendices replace the same lists previously located in parts of these rules as described below. Further discussion of the reasonableness of incorporating these references as amended is provided in Part IV of the general discussion in this Statement. The MPCA believes that the same reasons why it is reasonable to adopt

the federal lists of hazardous wastes by reference also apply to adopting the appendices addressed below. The MPCA believes that maintaining consistency with the federal program is the most reasonable regulatory strategy.]//

A. Appendix I, Representative Sampling Methods;

[In item A, the MPCA incorporates the representative sampling methods in 40 CFR 261, Appendix I. Certain representative sampling methods also apply through the reference to SW-846 provided in 7045.0065. However, the MPCA believes it is reasonable to provide consistency with the federal standards by directly referencing the federal appendix that establishes these standard methods.]//

B. Appendix VII, Basis for Listing Hazardous Waste; and

[In item B, the MPCA incorporates a list in 40 CFR 261, Appendix VII which contains the basis for listing hazardous waste formerly found in 7045.0139. For each EPA hazardous waste number, this appendix identifies the hazardous constituents which form the basis for the hazardous waste listing. The EPA has amended this appendix several times since it was last amended by the MPCA. Information about those changes is available in the following RCRA Amendments:

- **required RCRA Amendment 110.4: "Coke By-Products Listings" = 40 CFR 261 VII; as supported at 57 FR 37284-37306, August 18, 1992;**
- **required RCRA Amendment 115.3: "Chlorinated Toluenes Production Waste Listing" = 40 CFR 261 VII; as supported at 57 FR 47376-47386, October 15, 1992;**
- **Optional RCRA Amendment 159.4: "Conformance With the Carbamate Vacatur" = 40 CFR 261 VII; as supported at 62 FR 32974-32980, June 17, 1997;**
- **Optional RCRA Amendment 185.6: "Organobromine Production Wastes Vacatur" = 40 CFR 261 VII; as supported at 65 FR 14472-14475, March 17, 2000; and**
- **required RCRA Amendment 189.5: "Chlorinated Aliphatics Listing and LDRs for Newly Identified Wastes" = 40 CFR 261 VII; as supported at 65 FR 67068-67133, November 8, 2000.]//**

C. Appendix VIII, Hazardous Constituents.

[In item C, the MPCA incorporates 40 CFR 261, Appendix VIII, which is a list of the hazardous constituents that was formerly found in 7045.0141. This list contains the hazardous constituents that the MPCA must consider in evaluating whether to list a waste as hazardous under part 7045.0129. The EPA has amended this appendix several times since it was last amended by the MPCA. Information about those changes is available in the following RCRA Amendments:

- **required RCRA Amendment 128: "Wastes From the Use of Chlorophenolic Formulations in Wood Surface Protection" = 40 CFR 261 VIII; as supported at 59 FR 458-469, January 4, 1994;**
- **required RCRA Amendment 134.3: "Correction of Beryllium Powder (P015) Listing" = 40 CFR 261 VIII; as supported at 59 FR 31551-31552, June 20, 1994;**
- **Optional RCRA Amendment 159.5: "Conformance With the Carbamate Vacatur" = 40 CFR 261 VIII; as supported at 62 FR 32974-32980, June 17, 1997;**

- **Optional RCRA Amendment 185.7: "Organobromine Production Wastes Vacatur" = 40 CFR 261 VIII; as supported at 65 FR 14472-14475, March 17, 2000; and**
- **required RCRA Amendment 189.6: "Chlorinated Aliphatics Listing and LDRs for Newly Identified Wastes" = 40 CFR 261 VIII; as supported at 65 FR 67068-67133, November 8, 2000.]//**

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.**

[In subpart 2, the MPCA provides exceptions to the incorporations listed in subpart 1.]//

A. Part 7045.0090, adoption and incorporation by reference, also applies.

[In item A, the MPCA refers readers to the part of the State rules that establishes certain conditions that apply when rules are adopted or incorporated by reference.]//

B. The chemical abstracts name for physostigmine listed in Code of Federal Regulations, title 40, part 261, Appendix VIII, is "Pyrrolo [2,3-b]indol-5-o1."

C. The chemical abstracts number for potassium pentachlorophenate in Code of Federal Regulations, title 40, part 261, Appendix VIII, should be "7778-73-6."

[In items B and C, the MPCA is amending the rules to follow EPA guidance regarding corrections for states incorporating by reference Appendix VIII (hazardous constituent list). These changes have not yet been made to the federal regulations, but EPA has identified errors in its hazardous constituent list and has recommended that states correct these errors when states adopt this list.]//

7045.0208 HAZARDOUS WASTE MANAGEMENT.

Subpart 1. **Management by generator.** A generator must manage hazardous waste by using one of the methods described in items A to ~~G~~ H, unless otherwise specifically exempted under this chapter.

A. A generator may treat or dispose of hazardous waste at an on-site facility as provided under part 7045.0211.

B. A generator may ensure delivery of hazardous waste to an off-site storage, treatment, or disposal facility. If located in the United States, the facility used must be permitted to accept hazardous waste under the agency's permitting procedures, have interim status under parts 7045.0552 to ~~7045.0642~~ 7045.0651, or be authorized to manage hazardous waste by the Environmental Protection Agency or by a state with a hazardous waste management program authorized by the Environmental Protection Agency.

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items C to G, see M.R.]

H. A generator may ensure delivery of PCB waste to a commercial storer of PCB waste, as defined in part 7045.0135, subpart 5.

[The MPCA adds a new item H to clarify that it is acceptable for a generator to deliver PCB waste to a commercial storer of PCB waste. The concept of waste management at a "commercial storer of PCB waste" is based on provisions of the federal regulations in the Toxic Substances Control Act governing PCB wastes. The MPCA requirements that apply to management of PCB waste are in part 7045.0135,

subpart 5. New item H identifies a management option that is provided in part 7045.0135, subpart 5. Further discussion of the reasonableness of the requirements for PCB management is provided in that part.]//

[For text of subps 1a to 3, see M.R.]

Subp. 4. **Land disposal.** ~~Except as specified in part 7045.1300, subparts 2 and 3,~~ Hazardous wastes are subject to the requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390.

[In subpart 4, the MPCA is deleting references to specific provisions of the land disposal restrictions that were formerly found in parts 7045.1300 to 7045.1380. These land disposal restrictions have been repealed and the MPCA has incorporated the federal land disposal restrictions by reference as amended in part 7045.1390. The revised language simply clarifies the continued applicability of the land disposal restrictions found at the revised rule part with no change in effect.]//

7045.0213 FARMERS; PESTICIDES.

[For text of subpart 1, see M.R.]

Subp. 2. **Special conditions.** A farmer who generates waste pesticides which are hazardous waste and who triple rinses each emptied pesticide container and disposes of the pesticide residues on the farmer's farm in a manner consistent with the disposal instructions on the pesticide label is not required with respect to those pesticides to comply with other standards in parts 7045.0205 to 7045.0320 or to comply with parts 7045.0450 to ~~7045.1380~~ 7045.1390, or to obtain a hazardous waste facility permit, provided that:

[In subpart 2, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items A to C, see M.R.]

7045.0214 EVALUATION OF WASTES.

Subpart 1. **General requirement.** Any person who produces a waste within the state of Minnesota or any person who produces a waste outside the state of Minnesota that is managed within the state of Minnesota, must evaluate the waste to determine if it is hazardous within 60 days of initially generating the waste. The generation start date must be recorded and available for inspection. Waste that is not evaluated within 60 days of the generation start date must be managed as a hazardous waste and the person who produces the waste must be considered a generator until the waste is determined to be nonhazardous under parts 7045.0214 to 7045.0218. A material is determined to be a waste in accordance with the conditions specified under the definition of other waste material in part 7045.0020. Any waste evaluated and exempted under part 7045.0075 or 7045.0120 does not need to be reevaluated under this part. If the waste is determined to be hazardous, the generator must refer to parts 7045.0075, 7045.0450 to ~~7045.0685~~ 7045.0990, ~~and 7045.1300 to 7045.1380~~ 7045.1390, and 7045.1400 for possible exclusions or restrictions relating to management of the specific waste.

[In subpart 1, the MPCA makes two changes. The first corrects an error in a citation to a range of rules that the MPCA believes was incomplete in the existing rules and

that should have included the spent household battery requirements in part 7045.0686 and also all the used oil provisions in parts 7045.0692 to 7045.0990. The MPCA believes it is reasonable to provide a complete reference to all the rules that may be applicable to a hazardous waste. This correction does not change the requirements of the battery and used oil rules; it merely provides a more accurate identification of the rules that may already apply. The MPCA also provides the replacement citation for a repealed range of rules addressing the land disposal restrictions that are being amended in this rulemaking.]//

[For text of subp 2, see M.R.]

Subp. 3. **Wastes generated by treatment, storage, or disposal.** Wastes generated by treatment, storage, or disposal of hazardous waste are as follows:

A. Except as provided in items B to E, or in part 7045.0102, any waste generated from the treatment, storage, or disposal of hazardous waste, including any sludge, spill residue, ash, emission control dust or leachate, but not including precipitation ~~run-off~~ runoff, is a hazardous waste if it meets the criteria of subpart 2 or if it is derived from a waste that is listed in part 7045.0135.

[In item A, the MPCA adds a reference to the State rules that govern mixtures of hazardous wastes. This reference is being added to this rule to make it consistent with its federal counterpart in 40 CFR 261.3(c)(2)(i). Further information about this amendment can be found at RCRA Amendment 192A: "Mixture and Derived-From Rules Revisions" = 40 CFR 261.3(c)(2)(i).); as supported 66 FR 27266-27297, May 16, 2001. The corresponding federal requirement at 40 CFR 261.3 (c)(2)(i) includes references to two types of wastes, in addition to the reference to the mixtures rule at 40 CFR 261.3(c)(2)(g), that are not being addressed in this rulemaking. The first of these references is to wastes governed under 40 CFR 261.3(c)(2)(h), which regulates mixtures of radioactive and hazardous waste. The MPCA believes that these types of wastes are adequately addressed in the exemption provided in part 7045.0120, subpart 2, item G. The second type of waste that is addressed in the federal counterpart that is not being addressed in this rulemaking is the parenthetical reference to reclaimed wastes. The MPCA believes that the requirements governing the reuse and recycling of hazardous waste in part 7045.0125 adequately address this type of waste management activity and is not adding further conditions to this part.]//

[For text of items B to D, see M.R.]

E. Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062, or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations, or industrial furnaces~~, as defined in~~ that are blast furnaces or smelting, melting, and refining furnaces, including pyrometallurgical devices, such as cupolas, reverberator furnaces, sintering machines, roasters, or foundry furnaces, or that are other devices that the commissioner determines qualify for inclusion as an industrial furnace under part 7045.0020, subpart 43b, that are disposed ~~of~~ in solid waste disposal units, provided that these residues meet the generic exclusion levels identified ~~below~~ in the tables in this item for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan. At a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or

operation generating the waste changes. Persons claiming this exclusion in an enforcement action have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements. The generic exclusion levels ~~are~~ for K061 and K062 nonwastewater HTMR residues are as follows:

[Item E corresponds to language found at 40 CFR 261.3(c)(2)(ii)(C)(1). In item E, the MPCA first adds two new waste codes (K062 and F006) to the description of the types of wastes excluded. The MPCA then adds a list of the types of systems that qualify as HTMR processing systems to the cited definition of those systems. The MPCA then removes the word "of" as superfluous for clarity. Next, the MPCA revises the word "below" into the phrase "in the tables in this item" to clarify where to find the generic exclusion levels. Then, the MPCA clarifies the responsibilities of those who claim this exclusion. The MPCA then clarifies that the table of generic exclusion levels address nonwastewater residues for K061 and K062 wastes. This language corresponds to the federal requirements discussed above for the addition of K061 and K062. Finally, the MPCA completes the sentence by adding, "are as follows" to improve clarity. These changes are based on required RCRA Amendment 109.4: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 261.3(c)(2)(ii)(C)(1); as found in 57 FR 37194-37282, August 18, 1992.]//

Constituent	Maximum for any single composite sample (mg/l)
Antimony	~~0.063~~ 0.10
Arsenic	~~0.055~~ 0.50
Barium	~~6.3~~ 7.6
Beryllium	~~0.0063~~ 0.010
Cadmium	~~0.032~~ 0.050
Chromium (total)	0.33
Lead	~~0.095~~ 0.15
Mercury	0.009
Nickel	~~0.63~~ 1.0
Selenium	0.16
Silver	0.30
Thallium	~~0.013~~ 0.020
~~Vanadium~~	~~1.26~~
Zinc	70

[In this table to item E, the MPCA adopts changes to the concentrations identified in the second column, adds a standard for "zinc" and deletes all reference to "vanadium." These changes correspond to 40 CFR 261.3(c)(2)(ii)(C)(1) and relate to required RCRA Amendment 109.4: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris." Further information about these amendments can be found at 57 FR 37194-37282, August 18, 1992.]//

The generic exclusion levels for F006 nonwastewater HTMR residues are as follows:

Constituent	Maximum for any single composite sample (mg/l)
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total)	1.8 (mg/kg)
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

[In this newly added table in item E, the MPCA adopts language that corresponds to 40 CFR 261.3(c)(2)(ii)(C)(1) addressing nonwastewater residues for F006 wastes. This language relates to required RCRA Amendment 109.4: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris." Further information about this amendment is available at 57 FR 37194-37282, August 18, 1992.]//

For ~~each shipment of~~ K061 ~~high temperature metals recovery~~, K062, or F006 HTMR residues sent to ~~a~~ solid waste disposal ~~unit that meets~~ units, the treatment facility must prepare and send to the commissioner a onetime notification and certification certifying that the residues meet the generic exclusion levels for all constituents~~,~~ and ~~does~~ do not exhibit any ~~characteristic, a~~ characteristics of hazardous waste. The notification and certification must also be kept in the facility's files. The notification and certification must be updated if the process or operation generating the waste changes or if the solid waste disposal unit receiving the waste changes. However, the treatment facility need only notify the commissioner on an annual basis if these changes occur. The notification and certification must be sent to the commissioner no later than December 31. The notification and certification must include the following information:

(1) the name and address of the solid waste disposal unit receiving the waste ~~shipment~~ shipments;

(2) the EPA hazardous waste ~~number~~ numbers and treatability ~~group~~ groups at the initial point of generation; and

(3) the treatment standards applicable to the waste at the initial point of generation.

The certification must be signed by an authorized representative of the treatment facility and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are

significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

[In the above paragraph of item E, and subitems (1) to (3), the MPCA adopts further conditions and clarifications of the exclusion of K061, K062 and F006 wastes that correspond to 40 CFR 261.3(c)(2)(ii)(C)(2). These changes are based on required RCRA Amendment 109.4: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris." Further information about these amendments is available at 57 FR 37194-37282, August 18, 1992. The MPCA slightly revised the federal language to add reference to the treatment facility being the entity that must meet the requirements in order to clarify the intended meaning of EPA requirements. The MPCA consulted with EPA, who advised the MPCA that EPA's intent was for the facility that undertakes the HTMR treatment to keep the records, notify the EPA/state, and make the certification. The MPCA believes that the language proposed is a reasonable interpretation of the federal intent.]//

7045.0255 ~~ONE-TIME~~ ONETIME DISPOSAL REQUIREMENTS.

A person having hazardous waste subject to regulation under this chapter who is only a hazardous waste generator for the ~~one-time~~ onetime disposal of hazardous waste which is not currently being produced, must comply with this chapter except as provided in items A to D. The exemptions in this part do not apply to generators that generate hazardous waste more than one time.

A. The generator is exempt from parts 7045.0225 to 7045.0250, license and license reporting.

B. A large quantity generator is exempt from part 7045.0292, subpart 1, but must instead comply with part 7045.0292, subpart 5, items A to F, and must meet the requirements of part 7045.0566, relating to preparedness and prevention, and ~~part 7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes.

[In item B, the MPCA replaces a citation to a repealed rule with the corresponding federal regulation as incorporated by reference.]//

C. A small quantity generator is exempt from the requirements of part 7045.0292, subpart 5, items G and H, but instead must meet the requirements of part 7045.0566, relating to preparedness and prevention, and ~~part 7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes.

[In item C, the MPCA replaces a citation to a repealed rule with the corresponding federal regulation as incorporated by reference.]//

D. A very small quantity generator is exempt from part 7045.0292, subpart 6, but instead must comply with part 7045.0292, subpart 5, items A to F, and must meet the requirements of part 7045.0566, relating to preparedness and prevention, and ~~part 7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes.

[In item D, the MPCA replaces a citation to a repealed rule with the corresponding federal regulation as incorporated by reference.]//

7045.0270 PRETRANSPORT REQUIREMENTS.

Subpart 1. **Marking.** Before transporting or offering hazardous waste for transportation off-site, a generator must:

A. mark each package of hazardous waste in accordance with the applicable United States Department of Transportation regulations on hazardous materials under Code of Federal Regulations, title 49, part 172, subpart D, as amended; and

[In item A, the MPCA follows advice from Minnesota's Department of Transportation to provide a more correct citation.]//

[For text of item B, see M.R.]

[For text of subps 2 and 3, see M.R.]

Subp. 4. **Packaging.** Before transporting hazardous waste or offering a hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable United States Department of Transportation regulations on packaging under Code of Federal Regulations, title 49, parts 173, 178, ~~and~~ 179, and 180, as amended.

[In subpart 4, following advice from the Minnesota Department of Transportation, the MPCA corrects one of several citations to a range of regulations amended by the U.S. Department of Transportation.]//

Subp. 5. **Labeling.** Before transporting or offering hazardous waste for transportation off-site, a generator must label each package in accordance with the applicable United States Department of Transportation regulations on hazardous materials under Code of Federal Regulations, title 49, part 172, subpart E, as amended.

[In subpart 5, the MPCA follows advice from Minnesota's Department of Transportation to provide a more correct citation.]//

[For text of subps 6 and 7, see M.R.]

7045.0292 ACCUMULATION OF HAZARDOUS WASTE.

[In part 7045.0292, the MPCA is proposing several rule changes based on corresponding amended federal regulations. The MPCA is not adopting one federal provision found in 40 CFR 262.34 in which the EPA allows waste accumulation in containment buildings by generators who are not subject to permit or interim status standards. The MPCA is adopting language that allows permitted and interim status facilities do accumulate in containment buildings in this rulemaking in parts 7045.0550 and 7045.0650. However, the MPCA rejects this option, which reduces regulations, for non-permitted generators. Generators are subject to much less inspection scrutiny, so allowing this practice for generators is not the same as allowing it for permitted or interim status facilities. The MPCA believes that allowing this practice by generators would result in an unacceptably high risk of mismanagement. The MPCA believes that a reduction in regulation that allows accumulation in containment buildings by generators is not adequately protective of human health and the environment. The federal containment building requirements are identified in required RCRA Amendment 109.17: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris," = 40 CFR 264.1100-1102, Subpart DD. Further information about the federal amendment can be found at 57 FR 37194-37282, August 18, 1992.]//

Subpart 1. **Large quantity generator.** A large quantity generator may accumulate hazardous waste on site without a permit or without having interim status if:

[For text of item A, see M.R.]

B. the waste is placed as follows:

(1) in containers which meet the standards of part 7045.0270, subpart 4, and are managed in accordance with applicable requirements of parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~, and~~; 7045.0626; 7045.0645; 7045.0647; and 7045.0648;

[In item B, subitem (1), the MPCA extends the range of applicable rules to include the existing air emission standards in parts 7045.0647 and 7045.0648 and new air emission standards being adopted in part 7045.0645. This provision corresponds to 40 CFR 262.34(a)(1)(i). This change relates to required RCRA Amendments 154, 154-1.8a, and 154-5.2: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information can be found at 59 FR 62896-62953, December 6, 1994; 61 FR 4903-4916, February 9, 1996; and 61 FR 59932-59997, November 25, 1996. Subsequent amendments and clarifications to the federal air emission standards relate to required RCRA Amendment 177: "Organic Air Emission Standards: Clarification and Technical Amendments;" as supported at 64 FR 3382, January 21, 1999. In addition, the MPCA breaks the paragraph into subitems (1)-(3) to improve readability.]//

(2) in tanks provided the generator complies with the applicable requirements of parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~, and~~; 7045.0628; 7045.0645; 7045.0647; and 7045.0648, except part 7045.0628, ~~subpart~~ subparts 9, item C, and ~~subpart~~ 12; ~~or~~

[In subitem (2), the MPCA extends the range of applicable rules to include the existing air emission standards in parts 7045.0647 and 7045.0648 and new air emission standards being adopted in part 7045.0645. This provision corresponds to 40 CFR 262.34(a)(1)(ii). This change relates to required RCRA Amendments 154, 154-1.8a, 154-5.2: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information supporting this amendment can be found at 59 FR 62896-62953, December 6, 1994; 61 FR 4903-4916, February 9, 1996; and 61 FR 59932-59997, November 25, 1996. Subsequent changes relate to required RCRA Amendment 177: "Organic Air Emission Standards: Clarification and Technical Amendments," as supported at 64 FR 3382, January 21, 1999.]//

(3) for wood preserving operations on drip pads, provided the generator complies with parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0644 and maintains records containing a description of procedures that will be followed to ensure that all wastes are removed from drip pads and associated collection systems at least once every 90 days, and maintains documentation of the quantities, dates, and times of each waste removal. ~~These~~ Records relating to drip pads must be maintained at the licensed site and must be easily available for agency inspection;

[In item B, the MPCA makes minor changes in grammar and punctuation.//

[For text of items C to F, see M.R.]

G. the requirements of parts 7045.0558; 7045.0562, subparts 1 and 2; 7045.0566 to 7045.0576; and ~~7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, are fulfilled regarding personnel

training, ignitable, reactive, or incompatible waste, preparedness and prevention, contingency planning, and waste analysis for restricted wastes.

[In item G, the MPCA replaces a citation to a repealed rule with the corresponding federal regulation as incorporated by reference. This is based on RCRA Amendment 183.4: "Land Disposal Restrictions Phase IV -- Technical Corrections," which corresponds to 40 CFR 262.34(a)(4). Further information can be found at 64 FR 56469-56472, October 20, 1999.]//

[For text of subps 2 to 4, see M.R.]

Subp. 5. **Small quantity generator.** A small quantity generator may accumulate up to 3,000 kilograms of hazardous waste that is not acute hazardous waste on site without a permit or without having interim status if:

[For text of item A, see M.R.]

B. the waste is placed in containers which meet the standards of part 7045.0270, subpart 4, and are managed in accordance with parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0626, subparts 1 to 8; in tanks provided the generator complies with the requirements of parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0629; or for wood preserving operations on drip pads, provided the generator complies with parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3 ~~,~~; and 7045.0644 and maintains records containing a description of procedures that will be followed to ensure that all wastes are removed from drip pads and associated collection systems at least once every 180 days, and maintains documentation of the quantities, dates, and times of each waste removal. These records relating to drip pads must be maintained at the licensed site and must be easily available for agency inspection;

[In item B, the MPCA specifies that a generator can accumulate waste in containers under certain conditions, but that the air emission standards for containers being adopted in this rulemaking in part 7045.0626, subpart 9, do not apply to the accumulation of waste in containers by small quantity generators. This amendment corresponds to 40 CFR 262.34(d)(2), and is based on required RCRA Amendment 154-1.8a: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information regarding this amendment can be found at 59 FR 62896-62953, December 6, 1994.]//

[For text of items C to F, see M.R.]

G. the generator meets the requirements of parts 7045.0566, relating to preparedness and prevention; 7045.0568, relating to the arrangements with local authorities for emergencies; and ~~7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes; and

[In item G, the MPCA replaces a citation to a repealed Rule with a citation to the corresponding federal rule incorporated by reference. This amendment corresponds to 40 CFR 262.34(d)(4), and is based on required RCRA Amendment 179.5: "Land Disposal Restrictions Phase IV -- Technical Corrections and Clarifications to Treatment Standards." Further information regarding this amendment can be found at 64 FR 25408-25417, May 11, 1999.]//

[For text of item H, see M.R.]

Subp. 6. **Very small quantity generator.** A very small quantity generator may accumulate up to 1,000 kilograms of hazardous waste that is not acute hazardous waste on site without a permit or without having interim status if:

[For text of item A, see M.R.]

B. the waste is placed in containers which meet the standards of part 7045.0270, subpart 4, and are managed in accordance with parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0626, subparts 1 to 8; in tanks provided the generator complies with the requirements of parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0629; or for wood preserving operations on drip pads, provided the generator complies with parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0644 and maintains records containing a description of procedures that will be followed to ensure that all wastes are removed from drip pads and associated collection systems at least once every 180 days, and maintains documentation of the quantities, dates, and times of each waste removal. These records relating to drip pads must be maintained at the licensed site and must be easily available for agency inspection;

[In item B, the MPCA adds a reference to part 7045.0626, subparts 1-8 to make it clear that very small quantity generators do not have to meet the air emission standards for containers in subpart 9. This change is not based on federal language because the EPA does not regulate generators that Minnesota refers to as very small quantity generators. In adopting this provision, Minnesota continues to apply the same requirements to very small quantity generators who accumulate waste in containers as it applies to small quantity generators in subpart 5, item B above.]//

[For text of items C to H, see M.R.]

Subp. 7. **Acute hazardous waste accumulation.** A small quantity generator or a very small quantity generator who generates acute hazardous waste ~~may accumulate that waste on site indefinitely until one kilogram of acute hazardous waste or 100 kilograms of residue, contaminated soil, water, or other debris resulting from the cleanup of a spill of an acute hazardous waste into or on any land or water, is accumulated. From the date the applicable limit is reached, the entire quantity of waste must be treated on site in compliance with part 7045.0211 or shipped off site in compliance with part 7045.0208 within 90 days. A generator accumulating wastes under this subpart must meet the requirements in items A and B.~~ that is not exempt under subpart 8 must comply with items A and B:

[In subpart 7, the MPCA simplifies existing language and clarifies that a small or very small quantity generator accumulating acute hazardous waste is subject to this subpart, except that acute hazardous waste accumulated under the satellite accumulation requirements of subpart 8 is exempt from the requirements of subpart 7.]//

A. ~~For the period preceding the accumulation start date,~~ A generator may accumulate acute hazardous waste on site indefinitely in quantities equal to or less than one kilogram of acute hazardous waste and equal to or less than 100 kilograms of residue, contaminated soil, water, or other debris resulting from cleaning up spilled acute hazardous waste. The generator must comply with subpart 5, items B to H.

[In Item A, the MPCA revises existing rule language to clarify that, up to a certain threshold, a small quantity generator or a very small quantity generator may accumulate acute hazardous waste indefinitely. Also, up to that threshold, the

requirements of subpart 5, items B to H apply. If this waste totals equal to or less than the mass limits specified in subpart 7, then the generator, if a very small quantity generator, must meet the planning and preparedness requirements applicable to a small quantity generator of hazardous waste contained in subpart 5. The MPCA believes that the changes to this item are not changes to the intended meaning or application of the rules, but are reasonable clarifications of the original intent of this item, which was intended to apply requirements equivalent to those contained in 40 CFR 261.5(f).]//

B. ~~For the period following the accumulation start date, the generator~~ A generator who accumulates on site more than one kilogram of acute hazardous waste, or more than 100 kilograms of residue, contaminated soil, water, or other debris resulting from cleaning up spilled acute hazardous waste must comply with subpart 1.

[In Item B, the MPCA revises existing rule language to clarify that the requirements of subpart 1 apply to generators of acute hazardous waste when a certain quantity threshold is reached. If the generator accumulates acute hazardous waste quantities that exceed the limits specified in subpart 7, item B, regardless of generator size, they must meet all requirements applicable to a large quantity generator of hazardous waste contained in subpart 1. The MPCA believes the changes to this item are not significant changes to the intended meaning or application of the rules, but are reasonable clarifications of the original intent of this item, which was intended to apply requirements equivalent to those contained in 40 CFR 261.5(e).]//

Subp. 8. **Satellite accumulation.** Items A to D apply to all generators of hazardous waste.

A. A generator may, without a permit or interim status and without complying with subparts 1 to 7, accumulate as much as 55 gallons of hazardous waste or one quart of acute hazardous waste listed in part 7045.0135, ~~subparts 2 and 4, item E~~ subpart 1a, items B to D, per waste stream per each point of generation provided the generator complies with items B to D.

[In item A, first, the MPCA corrects citations to rules that were revised elsewhere in this rulemaking. The rule formerly referred to part 7045.0135, subparts 2 and 4, item E. Subpart 2 was the list of hazardous waste from non-specific sources and subpart 4, item E, was the list of discarded chemical products, off specification species, containers and spill residues. Due to the revision of part 7045.0135, subparts 2 and 4 are now replaced by subpart 1a, items B and D, respectively. Part 7045.0135, subpart 3, the list of wastes from specific sources, is now represented by subpart 1a, item C. This was not originally included here because there were no acutely toxic wastes on that list. Now, the MPCA proposes to replace the former references to part 7045.0135, subparts 2 and 4, item E, with a reference to part 7045.0135, subpart 1a, items B to D (newly including item C, "Hazardous Waste from Specific Sources"). The MPCA believes that it is just as reasonable to allow the satellite accumulation of hazardous waste from the list of specific sources as it is from the list of non-specific sources. Although there are currently no acutely hazardous wastes on the specific sources list, the MPCA anticipates that this list could change in the future to include such wastes and intends that, if so, their accumulation would be allowed at satellite locations. This is different than the federal satellite accumulation provision, but the MPCA believes that it is a reasonable addition to the State rules. Note that, as discussed in Part IV of

this Statement, the MPCA is adopting the lists of hazardous wastes prospectively by reference so that future changes to the lists will become effective in Minnesota without rulemaking. Adding a reference to part 7045.0135, subpart 1a, item C here will accommodate future changes to that list. Another difference is that part 7045.0135, subpart 1a, item D, is equivalent to 40 CFR 261.33(a-f). The federal rule equivalent to this subpart 8, only refers to section 261.33(e). The MPCA's incorporation of 40 CFR 261.33 is too coarse to make that specific of reference; however, looking at the material in the range encompassed by 40 CFR 261.33(a-f), the MPCA believes it is harmless to reference the entire section 261.33.]//

[For text of items B to D, see M.R.]

[For text of subps 9 and 10, see M.R.]

Subp. 11. **Accumulation requiring a permit.** A large quantity generator who accumulates hazardous waste for more than 90 days, or a small quantity generator who accumulates more than 3,000 kilograms of hazardous waste at any time, is an operator of a storage facility and is subject to the requirements of parts 7045.0450 to ~~7045.0642~~ 7045.0651 and the agency's permitting procedures in chapter 7001 ~~and parts 7023.9000 to 7023.9050~~ unless the generator has been granted a time extension under subpart 10.

[In subpart 11, the MPCA corrects a citation to a range of rules that changed as parts were added. The MPCA also deletes a citation to chapter 7023 that was repealed in a prior rulemaking.]//

[For text of subp 12, see M.R.]

7045.0294 RECORD KEEPING.

[For text of subps 1 to 3, see M.R.]

Subp. 3a.**Training records.** A generator must keep training records required under part 7045.0292, subparts 1, item G, and 5, item ~~G~~ H, subitem (3), on current personnel until closure of the licensed site. Training records on former employees must be kept for at least three years from the date of the employee's termination. Personnel training records may accompany personnel transferred within the same company.

[In subpart 3a, the MPCA corrects an error in the citation. The rule requires that generators keep records related to employee training required in part 7045.0292, subpart 5, item G. This citation is incorrect because the training and recording keeping requirement is specified in item H, subitem (3).]//

[For text of subps 4 and 5, see M.R.]

7045.0300 ADDITIONAL REPORTING.

The commissioner, when necessary to determine compliance with the requirements of this chapter, may require generators to furnish additional reports concerning the quantities and disposition of waste identified or listed in parts ~~7045.0100~~ 7045.0102 to ~~7045.0143~~ 7045.0155.

[In part 7045.0300, the MPCA corrects a citation to a range of rules that changed as parts were added. In addition, the MPCA is correcting an error in the previous range of rules. There is no part 7045.0100, this section of the rules starts at part 7045.0102.]//

7045.0302 INTERNATIONAL SHIPMENTS; SPECIAL CONDITIONS.

[For text of subps 1 and 1a, see M.R.]

Subp. 2. **Notification.** When shipping hazardous waste outside the state of Minnesota to a foreign country the primary exporter must notify the commissioner and the EPA of an intended export before the waste is scheduled to leave the United States. A complete notification should be submitted 60 days before the initial shipment is intended to be shipped off site. This notification may cover export activities extending over a 12-month or lesser period.

The notification must be sent to the commissioner at 520 Lafayette Road, Saint Paul, Minnesota 55155-4194, and to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Avenue N.W., Washington, DC 20460. Hand-delivered notifications must be sent to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, Ariel Rios Building, 12th Street and Pennsylvania Avenue N.W., Washington, DC 20460. In both cases, the following must be prominently displayed on the front of the envelope: "Attention: Notification of Intent to Export."

The primary exporter must provide the commissioner and the EPA with written renotification of any changes to the notification, except for changes to the telephone number, decreases in the quantity indicated in item B, subitem (3), and changes in the means of transport in item B, subitem (5). The waste shall not be shipped until the primary exporter receives an EPA Acknowledgment of Consent reflecting the receiving country's consent to the changes.

The notification must be in writing, signed by the primary exporter, and include the following information:

A. name, mailing address, telephone number, and identification number of the primary exporter; and

B. by consignee, for each hazardous waste type:

(1) a description of the hazardous waste and the EPA hazardous waste number (from Code of Federal Regulations, title 40, part 261, subpart C or D, as amended), United States Department of Transportation proper shipping name, hazard class, ~~and~~ identification number (UN/NA), and packing group for each hazardous waste as identified in Code of Federal Regulations, title 49, parts 171 to 177, as amended;

[In item B, the MPCA follows advice from Minnesota's Department of Transportation to revise language to conform with amended U.S. Department of Transportation regulations.]//

[For text of subitems (2) to (9), see M.R.]

[For text of subps 3 to 7, see M.R.]

7045.0365 TRANSFER FACILITY REQUIREMENTS.

Subpart 1. **Applicability.** A transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of part 7045.0270, subpart 4, at a transfer

facility for a period of ten days or fewer is not subject to regulation under parts 7045.0450 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390, and a hazardous waste facility permit with respect to the storage of those wastes. The owner or operator must notify the commissioner in writing of his or her activity.

[In subpart 1, the MPCA corrects a citation to a range of rules that changed as parts were added. The MPCA also provides the replacement citation for a repealed range of rules.]//

[For text of subps 2 and 3, see M.R.]

7045.0371 TRANSPORTATION OF HAZARDOUS WASTE.

Hazardous waste shall be transported in accordance with all applicable requirements of Minnesota Statutes, sections 221.033 and ~~221.034~~ 221.0341, and with ~~221.035~~ 221.0355 if applicable, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199, as amended.

[In part 7045.0371, the MPCA corrects citations to sections of Minnesota Statutes that were repealed and provides citations to the correct replacement sections. The MPCA also corrects one of several occurrences of a citation to a range of federal transportation regulations that changed as the U.S. Department of Transportation added a part.]//

7045.0395 HAZARDOUS WASTE DISCHARGES.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Reporting.** Any air, rail, highway, or water transporter who has discharged hazardous waste must:

A. report in writing as required by Code of Federal Regulations, title 49, section 171.16, as amended, to the ~~Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau~~ Information Systems Manager, PHH-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001, or submit an electronic hazardous materials incident report to the Information Systems Manager, DHM-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001 at http://hazmat.dot.gov;

[In item A, the MPCA follows advice from Minnesota's Department of Transportation to revise language to conform with amended U.S. Department of Transportation regulations.]//

[For text of items B and C, see M.R.]

7045.0450 FACILITIES GOVERNED BY FACILITY STANDARDS.

Subpart 1. General requirements.

[For text of items A to C, see M.R.]

D. Parts 7045.0450 to 7045.0551 apply to the owners and operators of all facilities that treat, store, or dispose of hazardous waste referred to in ~~parts 7045.1300 to 7045.1380~~ part 7045.1390.

[In item D, the MPCA provides the replacement citation for a repealed range of rules. The MPCA labels this paragraph as item D.]//

[For text of item E, see M.R.]

Subp. 2. **Relationship to interim status standards.** A facility owner or operator who has fully complied with the requirements for interim status under part 7045.0554 shall comply with parts 7045.0552 to ~~7045.0642~~ 7045.0651 in lieu of parts 7045.0450 to 7045.0551 until final administrative disposition of the permit application is made. The treatment, storage, or disposal of hazardous waste is prohibited except in accordance with a permit and except for the extent to which parts 7045.0552 to ~~7045.0642~~ 7045.0651 provide for the continued operation of an existing facility which meets certain conditions until final administrative disposition of the owner's or operator's permit application is made, except as provided under parts 7045.0485, 7045.0545, and 7045.0546.

[In subpart 2, the MPCA corrects several citations to a range of rules that changed as parts were added.]//

Subp. 3. **Exemptions.** The requirements of parts 7045.0450 to 7045.0551 do not apply to the following specific waste management units, facilities, or activities, although all other waste management activities of the owner or operator may be regulated:

[For text of items A to D, see M.R.]

E. an elementary neutralization unit, a pretreatment unit, or a wastewater treatment unit, but only if the unit does not receive hazardous waste from generators other than the owner or operator of the unit, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Code of Federal Regulations, title 40, section 268.40, Table of Treatment Standards for Hazardous Wastes, as incorporated in part 7045.1390) or reactive (D003) waste to remove the characteristic before land disposal, the owner or operator must comply with part 7045.0456, subpart 2;

[In item E, the MPCA adopts qualifying conditions to an existing exemption for certain types of treatment units. The conditions only apply to those units treating ignitable or reactive waste, and reference existing required precautions for the management of ignitable and reactive wastes. The additional conditions correspond to requirements in 40 CFR 264.1(g)(6) and are derived from required RCRA Amendment 124.2: "Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated." Further information about the amendments is found in 58 FR 29860-29887, May 24, 1993. The additions also correspond to requirements from RCRA Amendment 137.5 and 137.11: "Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes" = 40 CFR 264.1(g)(6). Further information about these amendments is found in 59 FR 47982-48110, September 19, 1994, as amended at 60 FR 242-302, January 3, 1995. While the language being added at this time is essentially the same as the federal regulations (except for the substitution of cross references to State rule parts and the removal of a reference to the definitions part of the rules), this exclusion remains more restrictive than the federal counterpart because the existing language restricts this exemption to waste generated onsite. This is reasonable as the MPCA has consistently not allowed accepting waste from off-site at unpermitted facilities. This is an existing difference and is not being changed as a result of this rulemaking.]//

[For text of items F to I, see M.R.]

J. (1) except as provided in subitem (2), treatment or containment activities during immediate response to any of the following situations: a discharge of a hazardous waste, an imminent and substantial threat of a discharge of hazardous waste, or a discharge of a material which, when discharged, becomes a hazardous waste;

[For text of subitem (2), see M.R.]

(3) a person who is covered by subitem (1) and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of parts 7045.0450 to ~~7045.0544~~ 7045.0551 and the agency's permitting procedures for those activities;

[In subitem (3), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

K. treatment of hazardous waste by a generator in the generator's accumulation tanks or containers in accordance with part 7045.0292. If the treatment involves evaporation of aqueous waste or polymerization of polyester or other chemical fixation treatment processes in open containers, the generator is exempt from parts 7045.0450 to ~~7045.0544~~ 7045.0551, but before beginning the treatment process must submit to the commissioner the information required under part 7045.0539, subpart 2, items A to C, that is relevant to the treatment activity and must be notified by the commissioner that the treatment activity is approved. The commissioner shall approve the treatment activity if the commissioner finds that the treatment activity will not endanger human health and the environment; or

[In item K, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of item L, see M.R.]

7045.0452 GENERAL FACILITY STANDARDS.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **General inspection requirements.** General inspection requirements include the following:

[For text of items A and B, see M.R.]

C. The frequency of inspection may vary for the items on the schedule. However, ~~it must~~ the frequency must be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration ~~or malfunctions~~, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies called for in parts 7045.0526, subpart 5; 7045.0528, subparts 4 and 7; 7045.0532, subpart 5; 7045.0534, subpart 6; 7045.0536, subpart 6; 7045.0538, subpart 5; 7045.0539, subpart 3; and 7045.0542, subpart 7; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container standards in Code of Federal Regulations, title 40, sections 264.1033, 264.1052, 264.1053, ~~and~~ 264.1058, as amended, and sections 264.1083 to 264.1089, as incorporated in part 7045.0540, where applicable. The inspection schedule must be submitted with the permit application. The commissioner shall evaluate the schedule along with the rest of the application to ensure

that it adequately protects human health and the environment. As part of this review, the commissioner may modify or amend the schedule as necessary.

[In the first sentences of item C, the MPCA simply revised existing language to clarify the intended meaning. These changes do not alter the effect of the rule and are not based on federal amendments. The MPCA also adopts references to newly added requirements addressing air emissions from tanks, surface impoundments and containers that correspond to amendments to 40 CFR 264.15(b)(4). These changes are from required RCRA Amendment 154-1.12: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information about the amendment can be found at 59 FR 62896-62953, December 6, 1994; as amended by 60 FR 26828-26829, May 19, 1995; 60 FR 50426-50430, September 29, 1995; 60 FR 56952-56954, November 13, 1995; 61 FR 4903-4916, February 9, 1996; 61 FR 28508-28511, June 5, 1996; and 61 FR 59932-59997, November 25, 1996. This amendment also adopts language from required RCRA Amendment 163.2: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment" = 40 CFR 264.15(b)(4). Further information about the amendment can be found at 62 FR 64636-64671, December 8, 1997.]//

[For text of items D and E, see M.R.]

7045.0458 WASTE ANALYSIS REQUIREMENTS.

Subpart 1. **Waste analysis.** Waste analysis procedures are listed in items A to D.

A. Before an owner or operator treats, stores, or disposes of any hazardous waste, or nonhazardous waste if applicable under part 7045.0488, subpart 2a, the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the waste. This analysis must contain all the information which must be known in order to treat, store, or dispose of the waste in accordance with the requirements of parts 7045.0450 to 7045.0551 and ~~7045.1300 to 7045.1380~~ 7045.1390, or with the conditions of a permit issued under the agency's permitting procedures.

[In item A, the MPCA provides the replacement citation for a repealed range of rules.]//

B. The analysis may include data developed under parts 7045.0102 to ~~7045.0143~~ 7045.0155 and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes, including data obtained from the generator.

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items C and D, see M.R.]

Subp. 2. **Waste analysis plan.** The owner or operator shall develop and follow a written waste analysis plan which describes the procedures that will be used to comply with subpart 1. The owner or operator shall keep this plan at the facility. The plan must specify:

[For text of items A to E, see M.R.]

F. where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in parts

7045.0456; 7045.0538, subpart 10; 7045.0542, subpart 2; and ~~7045.1315~~ Code of Federal Regulations, title 40, section 268.7, as incorporated in part 7045.1390; and the process vent ~~and,~~ equipment leak, and tank, surface impoundment, and container test methods and procedures in Code of Federal Regulations, title 40, sections 264.1034(d) ~~and,~~ 264.1063(d), as amended, and section 264.1083, as incorporated in part 7045.0540;

[In item F, the MPCA amends the rules to replace a reference to a land disposal restriction requirement, which is being repealed, with a citation to that same requirement in the federal regulations. The amendment refers directly to the federal counterpart because, in part 7045.1390, where this information is being incorporated by reference, the incorporation does not provide the necessary level of specificity to identify the applicable section. This amendment corresponds to 40 CFR 264.13(b)(6), and is from required RCRA Amendment 154-1: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information about this amendment can be found at 59 FR 62896-62953, December 6, 1994, as amended by 61 FR 59932-59997, November 25, 1996.]//

G. for off-site facilities, the waste analysis plan must also specify the procedures ~~which~~ that will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. The plan must describe:

[In item G, the MPCA makes a clarifying change for grammatical purposes.]//

(1) the procedures ~~which~~ that will be used to determine the identity of each movement of waste managed at the facility; ~~and~~

[In subitem (1), the MPCA makes a grammatical word change. The MPCA also removes the word "and" to accommodate this expanded list.]//

(2) the sampling method ~~which~~ that will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling. The waste analysis plan must be submitted with the permit application; and

[In subitem (2), the MPCA makes a clarifying change for grammatical purposes. The MPCA also adds the word "and" to accommodate this expanded list.]//

(3) the procedure that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container;

[In subitem (3), the MPCA requires the plan to contain information about the use of sorbents to eliminate free liquid in waste being landfilled. This requirement corresponds to 40 CFR 264.13(c)(3) and is based on required RCRA Amendment 118.2: "Liquids in Landfills II." Further information regarding this amendment can be found at 57 FR 54452-54461, November 18, 1992.]//

H. for surface impoundments exempted from the land disposal restrictions under ~~part 7045.1310~~ Code of Federal Regulations, title 40, section 268.4, as incorporated in part 7045.1390, the procedures and schedules for:

(1) the sampling of impoundment contents;

(2) the analysis of test data; and

(3) the annual removal of residues which are not delisted under part 7045.0075, subpart 2, or which exhibit a characteristic of hazardous waste under part 7045.0131, and either do not meet the treatment standards of ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part

7045.1390, or, where no treatment standards have been established, such residues are prohibited from land disposal under ~~parts 7045.1320 to 7045.1333~~ Code of Federal Regulations, title 40, sections 268.30 to 268.35, as incorporated in part 7045.1390, or RCRA section 3004(d)~~.~~; and

[In item H, the MPCA replaces repealed cites with references to corresponding federal land disposal restriction requirements that were incorporated by reference in part 7045.1390 of this rule. The MPCA cites directly to the appropriate federal provisions because the incorporation by reference of the federal land disposal restrictions in part 7045.1390 does not provide a sufficient level of specificity to identify the particular provisions being addressed. The MPCA also adds "and" to accommodate this expanded list.]//

I. for owners and operators seeking an exemption to the air emission standards of part 7045.0540 in accordance with Code of Federal Regulations, title 40, section 264.1082, as incorporated in part 7045.0540:

(1) if direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis and the results of the analysis of test data to verify the exemption; and

(2) if knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off site, that is used as the basis for knowledge of the waste.

[In item I, the MPCA is adding requirements that apply to waste analysis at facilities that are subject to the air emission standards being added in this rulemaking. This requirement corresponds to 40 CFR 264.13(b)(8) and is based on required RCRA Amendment 154-1.11: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information about the air emission standards can be found at 59 FR 62896-62953, December 6, 1994, as amended by 61 FR 4903-4916, February 9, 1996. The MPCA has slightly revised the language of the federal counterpart by removing an extraneous "the" to clarify the intended meaning.]//

7045.0478 OPERATING RECORD.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Record information.** The information in items A to T must be recorded, as it becomes available, and maintained in the operating record until closure of the facility.

[For text of items A and B, see M.R.]

C. A description and the quantity of each hazardous waste received, and the method and date of treatment, storage, or disposal at the facility in accordance with the record-keeping instructions in Code of Federal Regulations, title 40, part 264, Appendix I, as incorporated in part 7045.0543.

[In item C, the MPCA adds a reference to recordkeeping instructions that must be followed. This change corresponds to provisions in 40 CFR 264.73(b)(1).]//

[For text of item D, see M.R.]

E. Records and results of waste analyses and waste determinations performed as specified in parts 7045.0456~~,~~; 7045.0458~~,~~; 7045.0538, subpart 10~~,~~; and 7045.0542,

subpart 2, ~~7045.1310, and 7045.1315~~ and Code of Federal Regulations, title 40, sections 264.1034 and 264.1063, as amended, and sections 264.1083, 268.4(a), and 268.7, as incorporated in part 7045.0540 or 7045.1390; and the process vent and equipment leak test methods and procedures in Code of Federal Regulations, title 40, sections 264.1034 and 264.1063, as amended.

[In item E, the MPCA is adding requirements that apply to the operating records at facilities that are subject to the air emission standards being added in this rulemaking. This requirement corresponds to 40 CFR 264.74(b)(3); and is based on required RCRA Amendment 154-1.13: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information about the air emission standards can be found at 59 FR 62896-62953, December 6, 1994. The MPCA also replaces citations to repealed State rules with citations to equivalent federal rules as incorporated by reference.]//

[For text of items F and G, see M.R.]

H. Monitoring, testing, or analytical data and corrective action where required by parts 7045.0461; 7045.0484; 7045.0528, subparts 2, 4, and 7; 7045.0532, subparts 4a, 4b, and 5; 7045.0534, subparts 4a, 5, 5a, and 6; 7045.0536, subparts 5, 6, and 8; 7045.0538, subparts 4a, 5, 5a, and 6; 7045.0539, subpart 3; and 7045.0542, subpart 7; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures and record keeping requirements in Code of Federal Regulations, title 40, sections 264.1034(c) to (f), 264.1035, 264.1063(d) to (i), and 264.1064, as amended, and sections 264.1082 to 264.1090, as incorporated in part 7045.0540.

[In item H, the MPCA is adding requirements that apply to the operating record at facilities that are subject to the air emission standards being added in this rulemaking. This requirement corresponds to 40 CFR 264.73(b)(6), and is based on required RCRA Amendment 154-1.13: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information about the air emission standards can be found at 59 FR 62896-62953, December 6, 1994. This amendment also addresses changes based on required RCRA Amendment 163.3: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment." Further information about these amendments can be found at 62 FR 64636-64671, December 8, 1997.]//

[For text of items I to K, see M.R.]

L. The certification in item K signed by the owner or operator of the facility or an authorized representative.

[In item L, the MPCA clarifies where to find the referenced certification.]//

M. Records of the quantities and date of placement for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted ~~under part 7045.0075, subpart 8~~ by the United States Environmental Protection Agency under Code of Federal Regulations, title 40, section 268.5, a petition under part 7045.0075, subpart 9, or a certification under Code of Federal Regulations, title 40, section 268.8, as ~~amended~~ incorporated in part 7045.1390, and the applicable notice required of a generator under ~~part 7045.1315, subpart 1~~ Code of Federal Regulations, title 40, section 268.7(a), as incorporated in part 7045.1390.

[In item M, the MPCA clarifies that any extensions to the effective date of land disposal restrictions may only be granted by the EPA. Throughout this rulemaking,

the MPCA is replacing citations to repealed part 7045.0075, subpart 8, with the corresponding CFR citation. The reason for this change is that the case-by-case extensions to an effective date for applicable land disposal restrictions are only granted by the EPA, so the MPCA believes it is most reasonable to refer readers directly to those federal provisions. In item M, the MPCA also replaces a citation to repealed part 7045.1315, subpart 1, with a citation to equivalent 40 CFR 268.7(a), as incorporated by reference in part 7045.1390. This is necessary because part 7045.1390 lacks the level of specificity to identify this exact incorporated federal provision.]//

N. For an off-site treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required of the generator or the owner under Code of Federal Regulations, title 40, section 268.7(a)(1) or 268.8, as ~~amended, or part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390.

[In item N, the MPCA replaces a citation to repealed part 7045.1315, subpart 1, item A, with a citation to equivalent 40 CFR 268.7(a)(1), as incorporated by reference in part 7045.1390. This is necessary because part 7045.1390 lacks the level of specificity to identify this exact incorporated federal provision.]//

O. For an on-site treatment facility, the information contained in the notice, except the manifest number, and the certification and demonstration, if applicable, required of the generator or owner or operator under Code of Federal Regulations, title 40, section 268.7(a)(1) or 268.8, as ~~amended, or part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390.

[In item O, the MPCA replaces a citation to repealed part 7045.1315, subpart 1, item A, with a citation to equivalent 40 CFR 268.7(a)(1), as incorporated by reference in part 7045.1390. This is necessary because part 7045.1390 lacks the level of specificity to identify this exact incorporated federal provision.]

P. For an off-site land disposal facility, a copy of the notice, and the certification and demonstration, if applicable, required of the generator or the owner or operator of a treatment facility under Code of Federal Regulations, title 40, ~~section~~ sections 268.7 and 268.8, as ~~amended, and part 7045.1315~~ incorporated in part 7045.1390, whichever is applicable.

[In item P, the MPCA replaces a citation to repealed part 7045.1315, with a citation to equivalent 40 CFR 268.7, as incorporated by reference in part 7045.1390. This is necessary because part 7045.1390 lacks the level of specificity to identify this exact incorporated federal provision.]

Q. For an on-site land disposal facility, the information contained in the notice required of the generator or owner or operator of a treatment facility under ~~part 7045.1315~~ Code of Federal Regulations, title 40, section 268.7, as incorporated in part 7045.1390, except for the manifest number, and the certification and demonstration, if applicable, required under Code of Federal Regulations, title 40, section 268.8, as ~~amended~~ incorporated in part 7045.1390, whichever is applicable.

[In item Q, the MPCA replaces a citation to repealed part 7045.1315, with a citation to equivalent 40 CFR 268.7, and advises where sections of 40 CFR 268 are incorporated by reference in part 7045.1390. This is necessary because part 7045.1390 lacks the level of specificity to identify this exact incorporated federal provision.]

R. For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required of the generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

[In item R, the MPCA replaces a citation to repealed part 7045.1315, with a citation to equivalent 40 CFR 268.7, as incorporated by reference in part 7045.1390. This is necessary because part 7045.1390 lacks the level of specificity to identify this exact incorporated federal provision.]

S. For an on-site storage facility, the information contained in the notice, except the manifest number, and the certification and demonstration if applicable, required of the generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

[In item S, the MPCA replaces a citation to repealed part 7045.1315, with a citation to equivalent 40 CFR 268.7, as incorporated by reference in part 7045.1390. This is necessary because part 7045.1390 lacks the level of specificity to identify this exact incorporated federal provision.]

[For text of item T, see M.R.]

7045.0482 REQUIRED REPORTS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Additional reports.** In addition to submitting the manifest discrepancy report described in part 7045.0476, subpart 3, and the annual reports and the unmanifested waste reports described in subparts 2 and 3, the owner or operator shall also report to the commissioner:

[For text of items A and B, see M.R.]

C. as otherwise required by parts 7045.0484, 7045.0532 to 7045.0538; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container standards in ~~Code of Federal Regulations, title 40, part 264, subparts AA and BB, as amended~~ parts 7045.0540, 7045.0547, and 7045.0548.

[In item C, the MPCA is adding requirements that apply to the reports required from facilities that are subject to the air emission standards being added in this rulemaking. This requirement corresponds to 40 CFR 264.77(c) and is based on required RCRA Amendment 154-1.14: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information about the air emission standards can be found at 59 FR 62896-62953, December 6, 1994.]//

7045.0484 GROUNDWATER PROTECTION.

Subpart 1. **Scope.** This part applies as follows:

A. Except as provided in item B, the requirements of this part apply to owners or operators of facilities that treat, store, or dispose of hazardous waste. The owner or operator must comply with the requirements in subitems (1) to (3) for all wastes or waste constituents contained in solid or hazardous waste management units at the facility regardless of the time the waste was placed in such units:

(1) all solid waste management units must comply with part 7045.0485;

(2) a surface impoundment, waste pile, land treatment unit, ~~or~~ landfill, or containment building that is required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirements of a landfill, that receives hazardous waste after July 26, 1982, is a regulated unit and must comply with the requirements of subparts 2 to 14 for detecting, characterizing, and responding to releases; and

[The MPCA is amending subitem (2) to add a reference to the standards that apply to containment buildings that must be closed as a landfill. Adding this reference completes the list of facilities that are considered to be regulated units and therefore subject to the groundwater protection requirements. In this rulemaking, the MPCA adds required federal standards that apply to containment buildings. However, the State rules governing ground water protection differ from the federal regulations, so there is no federal counterpart to this provision. The MPCA believes that adding containment buildings that are required to close as landfills to the list of regulated units is a reasonable extension of the State's existing commitment to the application of the ground water protection standards. The MPCA does not expect that containment buildings will normally be required to close as a landfill or that ground water monitoring will be necessary, however, the MPCA believes it is essential to anticipate this possibility and is therefore adding this provision to the ground water standards.]//

(3) the financial responsibility requirements of part 7045.0485 apply to regulated units.

[For text of items B to D, see M.R.]

[For text of subps 2 to 14, see M.R.]

7045.0486 CLOSURE.

[For text of subpart 1, see M.R.]

Subp. 2. **Closure performance standard.** The owner or operator shall close the facility in a manner minimizing the need for further maintenance. Closure procedures must result in controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, in accordance with the closure requirements, including the requirements of parts 7045.0526, subpart 9; 7045.0528, subpart 9; 7045.0532, subpart 7; 7045.0534, subpart 7; 7045.0536, subpart 8; 7045.0538, subpart 7; 7045.0539, subparts 2 to 4; and 7045.0542, subpart 8; and Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550.

[In subpart 2, the MPCA adds a reference to closure and post closure care requirements for tanks and containment buildings. This language is based on required RCRA Amendment 109.13: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 264.111(c). Further information about the federal amendment can be found at 57 FR 37194-37282, August 18, 1992.]//

Subp. 3. **Submittal and contents of closure plan.** The owner or operator of a hazardous waste facility shall submit a closure plan with the permit application, and the closure plan must be approved by the agency as part of the permit issuance procedure. The approved closure plan shall become a condition of any permit. The agency's approval

must ensure that the approved closure plan is consistent with subparts 2, 4, and 5~~, and part~~; parts 7045.0484, groundwater protection, and 7045.0488, closure activities; and the applicable closure requirements of parts 7045.0526, subpart 9; 7045.0528, subpart 9; 7045.0532, subpart 7; 7045.0534, subpart 7; 7045.0536, subpart 8; 7045.0538, subpart 7; 7045.0539, subpart 2; ~~and~~ 7045.0542, subpart 8; and Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550.

[In subpart 3, the MPCA adopts cross references to specific provisions for groundwater protection and the closure of tanks and containment buildings based on the federal counterpart to this rule in 40 CFR 264.112(a)(2). This amendment is based on required RCRA Amendment 109.14: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris." Additional information can be found at 57 FR 37194-37282, August 18, 1992.]//

A copy of the approved closure plan and all revisions to the plan must be furnished to the commissioner upon request, including request by mail, until final closure is completed and certified. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The closure plan must at least include all of the following:

[For text of items A to F, see M.R.]

[For text of subps 4 to 6, see M.R.]

7045.0490 POSTCLOSURE.

Subpart 1. **Scope.** Except as otherwise provided in part 7045.0450, the provisions of subparts 2, 3, and parts 7045.0492 to 7045.0496 apply to:

A. the owner or operator of a hazardous waste disposal facility;

B. the owner or operator of a waste pile or surface impoundment that is required by part 7045.0532, subpart 7, or 7045.0534, subpart 7, to have a postclosure plan; ~~and~~

C. the owner or operator of tank systems that are required under part 7045.0528, subpart 9, to meet the requirements for landfills; and

D. the owner or operator of containment buildings that are required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirement for landfills.

[In item D, the MPCA adds language to apply postclosure care requirements to the owner or operator of containment buildings. Containment building standards are being added to the State rules in this rulemaking at the part cited. This language is based on required RCRA Amendment 109.15: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 264.110(b)(4); Additional information about the federal amendment can be found at 57 FR 37194-37282, August 18, 1992.]

[For text of subps 2 and 3, see M.R.]

7045.0498 FINANCIAL REQUIREMENTS.

[Existing State rules governing financial assurance are similar, but in some cases, more restrictive than their federal counterparts (the EPA deems them equivalent). In

this rulemaking the MPCA is adopting certain changes based on federal amendments, but is also declining to adopt certain federal amendments. As a result, certain State rules remain more stringent than corresponding federal financial requirements. Although the MPCA is not required to justify changes that it is not addressing in this rulemaking, the MPCA believes it is helpful to explain some of the background of those decisions.//

In drafting the existing financial requirements, the MPCA decided not to adopt certain financial assurance mechanisms based on concerns regarding their performance. In this rulemaking, the MPCA is adopting many changes intended to make the State rules consistent with their federal counterparts. However, the MPCA continues to decline adopting certain federal financial assurance mechanisms. For example, while the MPCA is including the newly available federal mechanisms of trust funds and letters of credit for liability coverage, the MPCA declines to adopt the federal option of a surety bond for this purpose. Further discussion of the specific reasonableness of the addition of the financial assurance options is discussed in part 7045.0518.//

The MPCA has also declined, at a number of points throughout the financial assurance rules, to adopt the federal changes that expand the list of entities that can provide a corporate guarantee for an owner or operator of a facility. The amended federal rules have been expanded to allow the corporate guarantee to be provided by a firm with a "substantial business relationship" with the owner or operator. The MPCA has chosen to continue to limit the corporate guarantee to the previous relationship, only the parent corporation. The MPCA believes that this is a reasonable limitation that facilitates settling claims while maintaining a clear source of financial assurance. In this regard, the existing State rules are not becoming more stringent. They will continue to limit who may be considered a corporate guarantor to only the owner or operator of the facility or its parent corporation.]//

Subpart 1. **Scope.** Parts 7045.0502, 7045.0504, and 7045.0518 to 7045.0524 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this part or in part 7045.0450, subpart 3.

Parts 7045.0506 and 7045.0508 apply only to owners and operators of:

A. disposal facilities;

B. waste piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that he or she is required to develop a contingent closure and postclosure care plan in parts 7045.0532, subpart 7; and 7045.0534, subpart 7; ~~and~~

C. tank systems that are required under part 7045.0528, subpart 9, to meet the requirements for landfills; and

D. containment buildings that are required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirements for landfills.

[In item D, the MPCA applies financial assurance requirements to the owners and operators of containment buildings. These requirements are based on required RCRA Amendment 109.15: "Land Disposal Restrictions for Newly Listed Wastes and

Hazardous Debris" = 40 CFR 264.140(b)(4). Further information can be found in 57 FR 37194-37282, August 18, 1992.]//

Parts 7045.0512 to 7045.0516 apply only to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land treatment units, ~~or~~ landfills, or containment buildings that are required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirements of landfills.

The state and the federal government are exempt from the requirements of parts 7045.0498 to 7045.0524.

[The MPCA is amending the above paragraph to require corrective action financial assurance for containment buildings that must close as landfills. The MPCA is adding new containment building standards in this rulemaking in part 7045.0550, and it is reasonable to make corresponding changes to those aspects of the rules that will be affected by these types of facilities. There is no federal counterpart to this paragraph, which requires land disposal facilities to prepare a cost estimate for corrective action (part 7045.0512) and applies financial assurance requirements for corrective actions (parts 7045.0514 and 7045.0516). Minnesota's rules are different than the federal financial assurance requirements because Minnesota not only requires financial assurance for closure and post-closure care but also for corrective action. The MPCA believes that it is reasonable to extend this existing requirement for financial assurance for corrective action to also include containment buildings since containment buildings are required to meet the closure and post-closure care requirements of a landfill. The same concerns regarding the funding of necessary corrective actions that apply to land disposal facilities also apply to containment buildings. Although the MPCA believes that it is reasonable to allow waste to be stored in containment buildings, this option carries certain risks that may result in the need to perform corrective actions. Requiring financial assurance will assure that those risks are addressed and that corrective action is performed.]//

[For text of subp 2, see M.R.]

7045.0502 COST ESTIMATE FOR FACILITY CLOSURE.

Subpart 1. **Cost estimate requirements.** The owner or operator shall have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with parts 7045.0486 and 7045.0488 and applicable closure requirements in parts 7045.0526, subpart 9; 7045.0532, subpart 7; 7045.0534, subpart 7; 7045.0536, subpart 8; 7045.0538, subpart 7; 7045.0539, subparts 2 to 4; and 7045.0542, subpart 8; and Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550. The closure cost estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. The closure cost shall be estimated as follows:

[For text of items A to C, see M.R.]

[For text of subps 2 to 4, see M.R.]

[In subpart 1, the MPCA adds a reference to the requirements being adopted in this rulemaking that apply to containment buildings. The reference to this part is based on language from required RCRA Amendment 109.16: "Land Disposal Restrictions

for Newly Listed Wastes and Hazardous Debris" = 40 CFR 264.142(a). Further information regarding the need for and reasonableness of this amendment is found in 57 FR 37194-37282, August 18, 1992.]//

7045.0504 FINANCIAL ASSURANCE FOR FACILITY CLOSURE.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Surety bond guaranteeing performance of closure.** The following apply to surety bonds that guarantee performance of closure:

[For text of item A, see M.R.]

B. The wording of the surety bond must be identical to the wording specified in part 7045.0524, subpart ~~2~~ 3.

[In item B, the MPCA corrects an error in existing language. This item previously referred to the wording provided in 7045.0524, subpart 2, which applies to a surety bond guaranteeing payment into a trust fund. Subpart 3 of that rule provides wording for a surety bond guaranteeing performance for corrective action, closure and/or post closure care. Since this subpart addresses the performance of closure, the wording in part 7045.0542, subpart 3, is the proper cite to apply.]//

[For text of items C to J, see M.R.]

[For text of subps 5 and 6, see M.R.]

Subp. 7. **Financial test and corporate guarantee for closure.** The financial test and corporate guarantee for closure is as follows:

[For text of items A to K, see M.R.]

L. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in items A to J, and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. The certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[The MPCA is amending item L by clarifying that the owner or operator must send a certified copy of the corporate guarantee to the commissioner. The rule formerly implied that the original document had to be sent to the commissioner. This part of the State rules is similar to the existing financial assurance requirements that apply to closure in 40 CFR 264.143(f)(10). In this rulemaking the MPCA is also making a similar clarifying amendment to parts 7045.0508, subpart 7, item M, and to part 7045.0514, subpart 7, item L. This change is based on optional RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.143(f)(10). The EPA's justification for its financial assurance rules is found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

[For text of subitems (1) and (2), see M.R.]

(3) If the owner or operator fails to provide alternate financial assurance as specified in this part and obtain the written approval of alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the

commissioner of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor ~~shall~~ must provide alternative financial assurance in the name of the owner or operator.

[In item L, subitem (3), the MPCA changes "shall" to "must" to conform to State rulemaking conventions.]//

[For text of subps 8 to 10, see M.R.]

7045.0508 FINANCIAL ASSURANCE FOR POSTCLOSURE CARE.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Financial test and corporate guarantee for postclosure care.** The financial test and corporate guarantee for postclosure care is as follows:

[For text of items A to L, see M.R.]

M. An owner or operator may meet the requirements ~~of~~ for this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor ~~shall~~ must meet the requirements for owners or operators in items A to K, and ~~shall~~ must comply with the terms of the corporate guarantee. The wording of the corporate guarantee ~~shall~~ must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

(1) If the owner or operator fails to perform postclosure care of a facility covered by the corporate guarantee in accordance with the postclosure plan and other permit requirements whenever required to do so, the guarantor ~~shall~~ must do so or establish a trust fund as specified in subpart 2 in the name of the owner or operator.

[For text of subitem (2), see M.R.]

(3) If the owner or operator fails to provide alternate financial assurance as specified in this part and to obtain the written approval of alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor ~~shall~~ must provide alternate financial assurance in the name of the owner or operator.

[The MPCA is making several minor changes to item M, and subitems (1) and (3). As discussed above for part 7045.0504, subpart 7, item L, in item M, the MPCA has added the requirement that the copy of the corporate guarantee sent to the commissioner must be a certified copy. The MPCA is also changing the word "of" to "for" in the first sentence of item M to better clarify the meaning. Finally, in item M and also in subitems (1) and (3), the MPCA changes "shall" to "must" to conform to State rulemaking convention. None of these changes alter the effect of this item.]//

[For text of subps 8 to 10, see M.R.]

7045.0514 FINANCIAL ASSURANCE FOR CORRECTIVE ACTION.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Financial test and corporate guarantee for corrective action.** The financial test and corporate guarantee for corrective action is as follows:

[For text of items A to K, see M.R.]

L. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in items A to J and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[In item L, the MPCA adds language using the same reasoning as discussed above for part 7045.0504, subpart 7, item L. The MPCA adds the requirement that the owner or operator must send a certified copy of the corporate guarantee to the commissioner. There is no direct federal counterpart to this State rule, but this requirement is derived from similar provisions addressed by the federal regulations for financial assurance for closure and post-closure care. The EPA's justification for its financial assurance rules are based on optional language from RCRA Amendment 113 Error! Bookmark not defined.**: "Consolidated Liability Requirements." Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//**

[For text of subitems (1) and (2), see M.R.]

(3) If the owner or operator fails to provide alternate financial assurance as specified in this part and to obtain the written approval of alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor ~~will~~ must provide alternative financial assurance in the name of the owner or operator.

[In subitem (3), the MPCA is making a minor, clarifying change to conform to the State rulemaking convention which requires the use of the more authoritative term "must" instead of the term "will." This change does not alter the effect of this requirement.]//

[For text of subps 8 to 10, see M.R.]

7045.0518 LIABILITY REQUIREMENTS.

[The MPCA is amending the requirements governing liability requirements for hazardous waste facilities to incorporate certain of the changes that have been made to the corresponding federal regulations. However, not all of federal requirements are being incorporated in these amendments. In the existing State liability rule, the MPCA had originally limited the owners and operators of facilities to specific options for providing liability coverage. The State rules currently only provide the options of covering liability through insurance, the use of a financial test, a corporate guarantee, or a combination of these three mechanisms. The federal liability regulations, found at 40 CFR 264.147, provide three additional options (use of a surety bond, letter of credit or trust fund) to provide liability coverage. In this rulemaking, the MPCA continues to support its previous decision to limit the options available for meeting the liability requirements to only those options which the MPCA believes are most

effective. The MPCA is proposing in this part, in addition to restructuring the language of the requirements, to expand the list of financial assurance mechanisms to also allow the use of letters of credit and trust funds. Although the existing State rules that address financial assurance for closure and post closure care provide for the use of all of the federally available financial assurance mechanisms, (including surety bonds) the MPCA continues to decline to adopt the use of surety bonds for providing liability coverage, even though they are provided in the federal counterpart to this rule. The MPCA believes that, based on previous experience with the difficulty of accessing surety bonds, the financial assurance mechanisms of letter of credit and trust fund are the only reasonable additions to the State options. The specific reasonableness for each change, including references to the federal background discussion, is provided following each proposed change below.]//

Subpart 1. **Coverage for sudden accidental occurrences.** An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1,000,000 per occurrence with an annual aggregate of at least $2,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated in one of the following ways:

[For text of items A and B, see M.R.]

C. An owner or operator may ~~demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance, as these mechanisms are specified in this part. The amounts of coverage demonstrated must total at least the minimum amounts required by subpart 1~~ meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 8.

[In item C, the MPCA has deleted existing language regarding combinations of financial assurance (which is being moved to new item E) and is adding the option of using a letter of credit for liability coverage. This option is provided in the federal counterpart found at 40 CFR 264.147(a)(3). The changes are based on optional language from RCRA Amendment 113: "Consolidated Liability Requirements." Further information can be found in 53 FR 33938-33960, September 1, 1988, as amended by 56 FR 30200, July 1, 1991, and 57 FR 42832-42844, September 16, 1992.]//

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 9.

[Item D is being added to provide the owner or operator of a facility with an additional option of a trust fund. This option is provided in the federal counterpart found at 40 CFR 264.147(a). This change is based on optional language from RCRA Amendment 113: "Consolidated Liability Requirements." Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

E. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test

covering part of the liability coverage requirement with a corporate guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

[In item E, the MPCA adopts language that revises and replaces former item C, to establish the ability to use combinations of financial assurance options for the owner or operator of a facility to demonstrate its liability coverage. This item is based on the previous requirements of item C and optional language found at RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(a)(6). Further information can be found in 53 FR 33938-33960; September 1, 1988; as amended by 56 FR 30200; July 1, 1991; and 57 FR 42832-42844; September 16, 1992.]//

F. An owner or operator shall notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damages caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

[In item F, subitems (1) to (3), the MPCA adopts required language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(a)(7). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

Subp. 2. **Coverage for nonsudden accidental occurrences.** An owner or operator of a surface impoundment, landfill, land treatment facility, or disposal miscellaneous ~~disposal~~ unit ~~which~~ that is used to manage hazardous waste, or a group of such facilities, ~~shall~~ must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator ~~shall~~ must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3,000,000 per occurrence with an annual aggregate of at least $6,000,000, exclusive of legal defense costs. An owner or operator who must meet the requirements of this part may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the

amount of at least $4,000,000 per occurrence and $8,000,000 annual aggregate. This liability coverage may be demonstrated in one of the following ways:

[In subpart 2, the MPCA is adopting language to make this subpart correspond to the federal counterpart in 40 CFR 264.147(b). The amendments to this subpart change the term "miscellaneous disposal units" to "disposal miscellaneous units" which is a more accurate term. The phrasing of this term is important because under part 7045.0518, subpart 2, only land disposal units (such as disposal miscellaneous units) are required to carry non-sudden accidental liability coverage. In contrast, under subpart 1 of that part, all hazardous waste facilities (those that treat, store or dispose) are required to carry sudden accidental liability coverage. The MPCA believes it is reasonable to amend the rules so that the term used in this part is "disposal miscellaneous units" rather than "miscellaneous disposal units" since "miscellaneous units" is the defined term. The EPA uses the same term and the MPCA believes it is reasonable to maintain consistency with the federal regulations. The MPCA also changes "shall" to "must" choosing preferred wording to convey the intended meaning. At the end of subpart 2, the MPCA adds language that addresses methods for combining liability coverage that corresponds to equivalent federal language. The MPCA believes that these requirements are reasonable to address issues regarding combined coverage. The amended language is addressed at RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(b). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

[For text of items A and B, see M.R.]

C. An owner or operator may ~~demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance, as these mechanisms are specified in this part. The amounts of coverage must total at least the minimum amounts required by subpart 2~~ meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 8.

[In items C (and D), the MPCA is making the same type of changes to the options provided for coverage for non-sudden accidental occurrences as it did for sudden accidental occurrences, the reasonableness of which is address in the introductory discussion to subpart 1 above. In item C the MPCA adopts optional language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(b)(3). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

~~D. For existing facilities, the required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates listed below. The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding July 16, 1984 will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues will determine the date by which the coverage must be demonstrated. The dates are as follows:~~

~~(1) for an owner or operator with sales or revenues totaling $10,000,000 or more, six months after July 16, 1984;~~

~~(2) for an owner or operator with sales or revenues greater than $5,000,000 but less than $10,000,000, 18 months after July 16, 1984;~~

~~(3) for all other owners or operators, 30 months after July 16, 1984;~~

~~(4) for an owner or operator subject to the requirements of Code of Federal Regulations, title 40, section 264.147 (1983) on the date he or she is required to demonstrate coverage under Code of Federal Regulations, title 40, section 264.147 (1983) or on July 16, 1984, whichever is later.~~

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 9.

[In item D, the MPCA revises language to make the State rules correspond more closely to the federal counterparts. The requirements in existing item D are being deleted because the cited dates are obsolete. The new language, which adds the option of providing liability coverage through the establishment of a trust fund, is based on optional language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(b)(5). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

E. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a corporate guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amount required by this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

[In item E, the MPCA adopts most of the optional language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(b)(6). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992. The exceptions to the federal counterpart are that (1) the MPCA chooses not to adopt the EPA's expanded use of surety bonds for this area of financial assurance, and (2) the MPCA chooses not to follow the EPA in expanding the scope of who can provide the corporate guarantee. The reasonableness of these decisions is discussed in the introductory discussion for this rule part.]//

F. An owner or operator must notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the

operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

[In item F, the MPCA adopts required language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(b)(7)(i-iii). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

[For text of subps 3 to 5, see M.R.]

Subp. 6. **Financial test for liability coverage.** The financial test for liability coverage is as follows:

[For text of items A to G, see M.R.]

H. If the owner or operator no longer meets the requirements of item A, ~~he or she~~ the owner or operator shall obtain insurance, a letter of credit, a trust fund, or a corporate guarantee for the entire amount of required liability coverage as specified in this part. Evidence of ~~insurance~~ liability coverage must be submitted to the commissioner within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

[In item H, the MPCA adopts language that expands the options available for providing liability coverage if the owner or operator no longer meets the requirements for the financial test. Except as previously discussed in the introduction to this part, the amendments include most of the optional language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(f)(6). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

[For text of item I, see M.R.]

Subp. 7. **Corporate guarantee for liability coverage.** The corporate guarantee for liability coverage is as follows:

A. Subject to item B, an owner or operator may meet the requirements of this part by obtaining a written corporate guarantee. The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in subpart 6. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8a. The corporate guarantee must be signed by two corporate officers of the parent corporation. A corporate resolution authorizing the parent corporation to provide the corporate guarantee for the subsidiary must be attached to the corporate guarantee. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as ~~provided~~ specified in subpart 6, item E. The terms of the corporate guarantee must provide that:

[For text of subitems (1) and (2), see M.R.]

B. A corporate guarantee may be used to satisfy the requirements of this part only if:

(1) in the case of corporations incorporated in the United States, the attorney general or insurance commissioner of the state in which the guarantor is incorporated and of each state in which a facility covered by the corporate guarantee is located has submitted a written statement to the commissioner and the United States Environmental

Protection Agency that a corporate guarantee executed as described in this part and part 7045.0524, subpart 8a, is a legally valid and enforceable obligation in that state; and

(2) in the case of corporations incorporated outside the United States, the non-United States corporation has identified a registered agent for service of process in each state in which a facility covered by the corporate guarantee is located and in the state in which it has its principal place of business, and the attorney general or insurance commissioner of each state in which a facility covered by the corporate guarantee is located and the state in which the guarantor corporation has its principal place of business, has submitted a written statement to the commissioner and to the United States Environmental Protection Agency that a corporate guarantee executed as described in this part and part 7045.0524, subpart 8a, is a legally valid and enforceable obligation in that state.

[In items A and B of subpart 7, the MPCA is amending the rules to insert the term 'corporate' in front of 'guarantee' so that meaning is clear and consistent with other uses of the phrase in this chapter. The MPCA is also amending the rules to change the term "provided" to "specified" to improve the clarity of this requirement.]//

Subp. 8. **Letter of credit for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by obtaining an irrevocable standby letter of credit that conforms to the requirements of this subpart and submitting a copy of the letter of credit to the commissioner.

B. The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.

C. The wording of the letter of credit must be identical to the wording in part 7045.0524, subpart 11.

D. An owner or operator who uses a letter of credit to satisfy the requirements of this part may also establish a standby trust fund. Under the terms of a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

E. The wording of the standby trust fund must be identical to the wording in part 7045.0524, subpart 13.

[In subpart 8, items A to E, the MPCA adopts language addressing the use of a letter of credit and a standby trust fund to meet liability coverage requirements. The adopted language is from optional RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(h)(1-5). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

Subp. 9. **Trust fund for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by establishing a trust fund that conforms to the requirements of this subpart and submitting an originally signed duplicate of the trust agreement to the commissioner.

B. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

C. The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this part. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided or obtain other financial assurance as specified in this part to cover the difference. For purposes of this item, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden or nonsudden occurrences required to be provided by the owner or operator under this part, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

D. The wording of the trust fund must be identical to the wording in part 7045.0524, subpart 13.

[In subpart 9, items A to D the MPCA adopts provisions regarding the establishment of a trust fund to meet liability insurance requirements. The amendments are based on optional language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.147(j)(1-4). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

7045.0524 WORDING OF INSTRUMENTS.

[In this part especially (and some other parts), please note that some non-heading rule language that appears in bold would appear as a bracketed option (e.g., [insert owner or operator]) in the official rule. The inadvertent replacement of bracketed language with bold language in this SONAR document is the result of an error in transcribing the official rule into an electronic extract of the rule from which this document was produced.]//

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Letter from chief financial officer for corrective action, closure, and/or postclosure care.** A letter from the chief financial officer as specified in part 7045.0504, subpart 7; 7045.0508, subpart 7; 7045.0514, subpart 7; 7045.0612, subpart 6; or 7045.0616, subpart 6 must be worded as specified in this subpart, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

LETTER FROM CHIEF FINANCIAL OFFICER FOR CORRECTIVE ACTION, CLOSURE, AND/OR POSTCLOSURE CARE

[Agency Commissioner] Minnesota Pollution Control Agency

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for corrective action, closure, or postclosure costs, as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624.

[In this paragraph of subpart 6, the MPCA revises wording of the letter from the chief financial officer for closure and/or post-closure care to match language found at 40 CFR 264.151(f). This change clarifies that the cited rules in the paragraph relate to financial assurance for costs associated with corrective action, closure or post closure care. The EPA's justification for this change is based on optional RCRA Amendment 113 Error! Bookmark not defined.**: "Consolidated Liability Requirements." Find further information in 57 FR 42832-42844, September 16, 1992.]//**

[Fill out the following five paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its identification number, name, address, and current corrective action, closure, and/or postclosure cost estimates. Identify each cost estimate as to whether it is for corrective action, closure, or postclosure care.]

1. This firm is the owner or operator of the following facilities for which financial assurance for corrective action, closure, or postclosure care is demonstrated through the financial test specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624. The current corrective action, closure, and/or postclosure cost estimates covered by the ~~text~~ test are shown for each facility: _____.

[In paragraph 1 of subpart 6, the MPCA corrects a typographical error by changing the word "text" to "test."]//

2. This firm guarantees, through the corporate guarantee specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624, the corrective action, closure, or postclosure care of the following facilities owned or operated by subsidiaries of this firm. The current cost estimates for the corrective action, closure, or postclosure care so guaranteed are shown for each facility: _____.

3. In states other than Minnesota, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the corrective action, closure, or postclosure care of the following facilities either to the United States Environmental Protection Agency through the use of the financial test specified in Code of Federal Regulations, title 40, parts 264 or 265, subpart H, as amended, or to an authorized state through the use of a test equivalent or substantially equivalent to the specified financial test. The current corrective action, closure, and/or postclosure cost estimates covered by such a test are shown for each facility: _____.

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for corrective action, if required, closure, or if a disposal facility, postclosure care, is not demonstrated either to the United States Environmental Protection Agency or a state through the financial test or any other financial assurance mechanism specified in Code of Federal Regulations, title 40, parts 264 or 265, subpart H, as amended, or equivalent or substantially equivalent state mechanisms. The current corrective action, closure, and/or postclosure cost estimates not covered by such financial assurance are shown for each facility: _____.

5. This firm is the owner or operator of the following underground injection control (UIC) facilities for which financial assurance for plugging and abandonment is required under Code of Federal Regulations, title 40, part 144, as amended. The current closure cost estimates as required by Code of Federal Regulations, title 40, section 144.62, as amended, are shown for each facility.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year end financial statements for the latest completed fiscal year, ended [date].

[Fill in Alternative I if the criteria of Minnesota Rules, part 7045.0504, subpart 7, item B; 7045.0508, subpart 7, item B; 7045.0514, subpart 7, item B; 7045.0612, subpart 6, item B; 7045.0616, subpart 6, item B are used. Fill in Alternative II if the criteria of Minnesota Rules, part 7045.0504, subpart 7, item C; 7045.0508, subpart 7, item C; 7045.0514, subpart 7, item C; or 7045.0612, subpart 6, item C; or 7045.0616, subpart 6, item C are used.]

ALTERNATIVE I

1. Sum of current corrective action, closure, and postclosure cost estimate [total of all cost estimates shown in the five paragraphs above]	$_____
*2. Total liabilities [if any portion of the corrective actions, closure, or postclosure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4]	$_____
*3. Tangible net worth	$_____
*4. Net worth	$_____
*5. Current assets	$_____
*6. Current liabilities	$_____
7. Net working capital [line 5 minus line 6]	$_____
*8. The sum of net income plus depreciation, depletion, and amortization	$_____
*9. Total assets in United States (required only if less than 90 percent of firm's assets are located in United States)	$_____

	YES	NO
10. Is line 3 at least $10,000,000?	___	___
11. Is line 3 at least 6 times line 1?	___	___
12. Is line 7 at least 6 times line 1?	___	___
*13. Are at least 90 percent of firm's assets located in the United States? If not, complete line 14	___	___
14. Is line 9 at least 6 times line 1?	___	___
15. Is line 2 divided by line 4 less than 2.0?	___	___

16. Is line 8 divided by line 2 greater than 0.1? ___ ___

17. Is line 5 divided by line 6 greater than 1.5? ___ ___

ALTERNATIVE II

1. Sum of current corrective action, closure, and postclosure cost estimates [total of all cost estimates shown in the five paragraphs above] $_____

2. Current bond rating of most recent issuance of this firm and name of rating service _____

3. Date of issuance of bond _____

4. Date of maturity of bond _____

*5. Tangible net worth [if any portion of the corrective action, closure, and postclosure costs estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line] $_____

*6 Total assets in United States (required only if less than 90 percent of firm's assets are located in United States) $_____

	YES	NO
7. Is line 5 at least $10,000,000?	___	___
8. Is line 5 at least 6 times line 1?	___	___
*9. Are at least 90 percent of firm's assets located in United States? If not, complete line 10	___	___
10. Is line 6 at least 6 times line 1?	___	___

I hereby certify that the wording of this letter is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 6, as such rules were constituted on the date shown immediately below.

[SIGNATURE] [NAME] [TITLE] [DATE]

[For text of subp 7, see M.R.]

Subp. 8. **Corporate guarantee for corrective action, closure, or postclosure care.** A corporate guarantee as specified in part 7045.0504, subpart 7; 7045.0508, subpart 7; 7045.0514, subpart 7; 7045.0612, subpart 6; or 7045.0616, subpart 6 must be worded as specified in this subpart, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

CORPORATE GUARANTEE FOR CORRECTIVE ACTION, CLOSURE, OR POSTCLOSURE CARE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the state of [insert name of state], herein referred to as guarantor, to the Minnesota Pollution Control Agency (Agency), obligee, on behalf of our subsidiary [owner or operator] of [business address].

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Minnesota Rules, parts 7045.0504, subpart 7; 7045.0508, subpart 7; 7045.0514, subpart 7; 7045.0612, subpart 6; and 7045.0616, subpart 6.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: identification number, name, and address. Indicate for each whether guarantee is for corrective action, closure, postclosure care, or a combination of the three.]

3. "Closure plans" and "postclosure plans" as used below refer to the plans maintained as required by Minnesota Rules, parts 7045.0486 to 7045.0494 and 7045.0594 to 7045.0606 for the closure and postclosure care of facilities as identified above. "Corrective action plans" as used below refers to the plans maintained as required by Minnesota Rules, part 7045.0484, subpart 2, item D; and subpart 14 for corrective action for the facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to the Agency that in the event that [owner or operator] fails to perform [insert "corrective action," "closure," "postclosure care," or any combination of the three] of the above facility(ies) in accordance with the corrective action, closure, or postclosure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624 as applicable, in the name of [owner or operator] in the amount of the current corrective action, closure, or postclosure cost estimates as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Agency Commissioner and to [owner or operator] that he or she intends to provide alternate financial assurance as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624, as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the Agency Commissioner by certified mail of a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy, as amended, naming guarantor as debtor, within ten days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the Agency Commissioner of a determination that guarantor no longer meets the financial test criteria or that he or she is disallowed from continuing as a guarantor of corrective action, closure,

or postclosure care, the guarantor shall establish alternate financial assurance as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624, as applicable, in the name of [owner or operator] unless [owner or operator] has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the corrective action, closure or postclosure plan, amendment or modification of the permit, the extension or reduction of the time of performance of corrective action, closure, postclosure, or any other modification or alteration of an obligation of the owner or operator pursuant to Minnesota Rules, parts 7045.0450 to ~~7045.0642~~ 7045.0651.

[In subpart 8, paragraph 8, the MPCA corrects citations to ranges of rules that changed as parts were added.]//

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624 for the above listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the Agency Commissioner and to [owner or operator], the cancellation to become effective no earlier than 120 days after receipt of notice by both the Agency Commissioner and [owner or operator], as evidenced by the return receipts.

10. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624, as applicable, and obtain written approval of such assurance from the Agency Commissioner within 90 days after a notice of cancellation by the guarantor is received by the Agency Commissioner from guarantor, guarantor shall provide alternate financial assurance in the name of [owner or operator].

11. Guarantor expressly waives notice of acceptance of this guarantee by the Agency or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the corrective action, closure, and/or postclosure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 8, as such rules were constituted on the date first above written.

Effective date: _____ [NAME OF GUARANTOR] [AUTHORIZED SIGNATURE FOR GUARANTOR] [NAME OF PERSON SIGNING] [TITLE OF PERSON SIGNING] [SIGNATURE OF WITNESS OR NOTARY]

Subp. 8a. **Corporate guarantee for liability coverage.** A corporate guarantee as specified in part 7045.0518, subpart 7, or 7045.0620, subpart 6, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CORPORATE GUARANTEE FOR LIABILITY COVERAGE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of [if incorporated within the United States, insert "the State of _____" and insert name of state; if incorporated outside the United States, insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the state of the principal place of business], referred to in this guarantee as the guarantor. This guarantee is made on behalf of our subsidiary [owner or operator] of [business address], to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Minnesota Rules, parts 7045.0518, subpart 7, and 7045.0620, subpart 6.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: Identification Number, name, and address; and if guarantor is incorporated outside the United States, list the name and address of the guarantor's registered agent in each state.] This corporate guarantee satisfies RCRA third party liability requirements for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences in above named owner or operator facilities for coverage in the amount of [insert dollar amount] for each occurrence and [insert dollar amount] annual aggregate.

3. For value received from [owner or operator], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [sudden and/or nonsudden] accidental occurrences, arising from the operation of the above named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgment(s), award(s), or settlement agreement(s), up to the limits of coverage identified above.

4. Such obligation does not apply to any of the following:

(a) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert owner or operator] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law, or any similar law.

(c) Bodily injury to:

(1) an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert owner or operator]. This exclusion applies: (A) whether [insert owner or operator] may be liable as an employer or in any other capacity; and (B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2). (d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft. (e) Property damage to:

(1) any property owned, rented, or occupied by [insert owner or operator];

(2) premises that are sold, given away, or abandoned by [insert owner or operator] if the property damage arises out of any part of those premises;

(3) property loaned to [insert owner or operator];

(4) personal property in the care, custody, or control of [insert owner or operator]; or

(5) that particular part of real property on which [insert owner or operator] or any contractors or subcontractors working directly or indirectly on behalf of [insert owner or operator] are performing operations, if the property damage arises out of these operations.

[In subpart 8a, paragraph 4, the MPCA moves the discussion of exclusions here from existing paragraph 12, and slightly modifies the introductory sentence to more accurately identify to whom the exclusions apply and to provide consistency with 40 CFR 264.151(h)(2). Moving the content of paragraph 12 to paragraph 4 is optional, but the MPCA believes it is reasonable to provide consistency with corresponding federal language. The language in this paragraph is from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.151(h)(2). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the commissioner and to [owner or operator]

that (s)he intends to provide alternate liability coverage as specified in Minnesota Rules, parts 7045.0518 and 7045.0620, as applicable, in the name of [owner or operator]. Within 120 days after the end of that fiscal year, the guarantor shall establish the liability coverage unless [owner or operator] has done so.

~~5.~~ 6. The guarantor agrees to notify the commissioner by certified mail of a voluntary or involuntary proceeding under Title 11 (bankruptcy), United States Code, as amended, naming guarantor as debtor, within ten days after commencement of the proceeding.

~~6.~~ 7. Guarantor agrees that within 30 days after being notified by the commissioner of a determination that guarantor no longer meets the financial test criteria or that (s)he is disallowed from continuing as a guarantor, (s)he shall establish alternate liability coverage as specified in Minnesota Rules, part 7045.0518 or 7045.0620 in the name of [owner or operator], unless [owner or operator] has done so.

~~7.~~ 8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements established by Minnesota Rules, parts 7045.0518 and 7045.0620, but the modification becomes effective only if the commissioner does not disapprove the modification within 30 days of receipt of notification of the modification.

~~8.~~ 9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable requirements of Minnesota Rules, parts 7045.0518 and 7045.0620 for the above listed facility(ies), except as provided in paragraph ~~9~~ 10 of this agreement.

~~9.~~ 10. Guarantor may terminate this guarantee by sending notice by certified mail to the commissioner and to [owner or operator] but this guarantee may not be terminated unless and until [owner or operator] obtains, and the commissioner approves alternate liability coverage complying with Minnesota Rules, parts 7045.0518 and/or 7045.0620.

~~10.~~ 11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

~~11.~~ 12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

[In paragraphs 5 through 12, the MPCA is re-numbering the paragraphs. None of these amendments change the effect of the rules.]//

~~12. Exclusions~~

~~This corporate guarantee does not apply to:~~

~~A. Bodily injury or property damage for which the owner or operator is obliged to pay damages by reason of the assumption of liability in a contract or agreement. This~~

~~exclusion does not apply to liability for damages that the owner or operator would be obligated to pay in the absence of the contract or agreement.~~

~~B. Any obligation of the owner or operator under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.~~

~~C. Bodily injury to:~~

~~(1) an employee of the owner or operator arising from, and in the course of, employment by the owner or operator; or~~

~~(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of, employment by the owner or operator.~~

~~This exclusion applies whether the owner or operator is liable as an employer or in any other capacity. This exclusion also applies to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in item C.~~

~~D. Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.~~

~~E. Property damage to:~~

~~(1) any property owned, rented, or occupied by the owner or operator;~~

~~(2) premises that are sold, given away, or abandoned by the owner or operator if the property damage arises out of any part of those premises;~~

~~(3) property loaned to the owner or operator;~~

~~(4) personal property in the care, custody, or control of the owner or operator; and~~

~~(5) that particular part of real property on which the owner or operator or any contractors or subcontractors working directly or indirectly on behalf of the owner or operator are performing operations, if the property damage arises out of these operations.~~

In paragraph 12, the MPCA moves existing language, with slight modifications, to paragraph 4 above. The same types of exclusions formerly addressed in this paragraph are now being addressed in the amendments to paragraph 4 above.]//`

13. The guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents:

(a) Certification from the principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that

instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [principal's hazardous waste treatment, storage, or disposal facility] should be paid in the amount of $.....

[Signatures] Principal (Notary) Date [Signatures] Claimant(s) (Notary) Date

(b) A valid final court order establishing a judgment against the principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the principal's facility or group of facilities.

[In subpart 8a, paragraph 13, the MPCA adopts language to address third party claims. This optional language is from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.151(h)(2). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered [insert "primary" or "excess"] coverage.

[In subpart 8a, paragraph 14, the MPCA adopts language to address combined mechanisms for liability coverage. This is optional language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.151(h)(2). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

I hereby certify that the wording of the guarantee is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 8a.

Effective date: _____ [Name of guarantor] [Authorized signatures for guarantor] [Names of persons signing] [Titles of persons signing (Two corporate officers must sign for parent corporation.)] Corporate resolution attached [(Attach resolution adopted by parent corporation authorizing parent corporation to provide the corporate guarantee for subsidiary)] Signature of witness or notary: _____

[For text of subps 9 and 10, see M.R.]

Subp. 11. **Letter of credit for liability coverage.** A letter of credit, as specified in part 7045.0518, subpart 8, or 7045.0620, subpart 7, must be worded as follows, except

that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and Address of Issuing Institution]

[Agency Commissioner]

Minnesota Pollution Control Agency

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. ... in the favor of ["any and all third-party liability claimants" or insert name of trustee of the standby trust fund], at the request and for the account of [owner or operator's name and address] for third-party liability awards or settlements of ..... [insert dollar amount of the letter of credit] per occurrence and the annual aggregate amount of ..... [insert dollar amount of the letter of credit] for sudden accidental occurrences and/or for third-party liability awards or settlements of ..... [insert dollar amount of the letter of credit] per occurrence, and the annual aggregate amount of ..... [insert dollar amount of the letter of credit] for nonsudden accidental occurrences available on presentation of a sight draft bearing reference to this letter of credit No. ..., and [insert the following language if the letter of credit is being used without a standby trust fund:

"(1) a signed certificate reading as follows:

CERTIFICATE OF VALID CLAIM

The undersigned, as parties [insert principal] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operations of [principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $..... We hereby certify that the claim does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) an employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal].

This exclusion applies:

(A) whether [insert principal] may be liable as an employer or in any other capacity; and (B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2). (d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft. (e) Property damage to:

(1) any property owned, rented, or occupied by [insert principal];

(2) premises that are sold, given away, or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) property loaned to [insert principal];

(4) personal property in the care, custody, or control of [insert principal]; or

(5) that particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

[Signatures]

Grantor

[Signatures]

Claimant(s)

; or

(2) a valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but such expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the commissioner, and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us.

[Insert the following language if a standby trust fund is not being used: "In the event that this letter of credit is used in combination with another mechanism for liability

coverage, this letter of credit shall be considered [insert "primary" or "excess" coverage."]

We certify that the wording of this letter of credit is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 11, as such rule was constituted on the date shown immediately below. [Signature(s) and title(s) of official(s) of issuing institution] [Date].

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

[In subpart 11 the MPCA is adopting optional federal language regarding the wording of an irrevocable standby letter of credit to meet liability requirements. The MPCA is slightly modifying the federal wording to reduce the potential for confusion. The same clarifying changes are being made in subparts 12 and 13 below. The existing federal language calls for third party liability awards of "up to [in words] U.S. dollars $ ……." The MPCA chooses to modify the phrasing in this document, as well as the phrasing of the same terms in Section 3 of subparts 12 and 13 to replace the counter-intuitive phrase "up to" in addressing liability (which normally requires "at least" some amount). Without understanding the larger context of the wording of this document, the phrase "up to" seems to set no minimum required amount of coverage. This is not the case and the EPA has explained to MPCA staff that it intends this language to apply in the larger context that any of the financial assurance instruments may be used in combination to provide the minimum coverage required by federal 40 CFR 264.147(h), also found in Minnesota Rules part 7045.0518. By using the phrase "up to," the EPA intends to allow the letter of credit to make up any shortage between the other financial assurance instruments and the required coverage. The MPCA does not believe that the existing federal language makes this context clear. The federal language fails to acknowledge the minimum amount of coverage required by part 7045.0518. The MPCA believes that replacing the federal "up to" phrase with the phrase "[insert dollar amount of the fund]" clarifies the intent of the federal language and removes potential confusion. The adopted language, except the change discussed above, is from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.151(k). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

Subp. 12.**Trust agreement for liability coverage.**

A. A trust agreement, as specified in part 7045.0518, subpart 10, or 7045.0620, subpart 9, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of _____" or "a national bank"], the "trustee."

Whereas, the Minnesota Pollution Control Agency (Agency), an agency of the state of Minnesota, has established certain rules applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a trust to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A [on Schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, hereinafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of _____ [insert dollar amount of the fund] per occurrence and _____ [insert dollar amount of the fund] annual aggregate for sudden accidental occurrences and _____ [insert dollar amount of the fund] per occurrence and _____ [insert dollar amount of the fund] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This

exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) an employee of [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) whether [insert Grantor] may be liable as an employer or in any other capacity; and (B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2). (d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft. (e) Property damage to:

(1) any property owned, rented, or occupied by [insert Grantor];

(2) premises that are sold, given away, or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) property loaned to [insert Grantor];

(4) personal property in the care, custody, or control of [insert Grantor]; or

(5) that particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Agency.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[.....].

[Signatures]

Grantor

[Signatures]

Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstance then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held unless they are securities or other obligations of the Federal or State government;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) to transfer from time to time any or all of the assets of the Fund to any common commingled, or collective trust fund created by the Trustee in which the fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) to purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 81a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) to compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuations. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Agency Commissioner a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Agency Commissioner shall constitute a conclusively binding assent by the Grantor barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Agency Commissioner, and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Agency Commissioner to the Trustee shall be in writing, signed by the Agency

Commissioner, or the Commissioner's designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Agency hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Agency, except as provided for herein.

Section 15. Notice of Nonpayment. If a payment for bodily injury or property damage is made under Section 4 of this trust, the Trustee shall notify the Grantor of such payment and the amount(s) thereof within five (5) working days. The Grantor shall, on or before the anniversary date of the establishment of the Fund following such notice, either make payments to the Trustee in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under Section 4, or shall provide written proof to the Trustee that other financial assurance for liability coverage has been obtained equaling the amount necessary to return the trust to its value prior to the payment of claims. If the Grantor does not either make payments to the Trustee or provide the Trustee with such proof, the Trustee shall within ten working days after the anniversary date of the establishment of the Fund provide a written notice of nonpayment to the Agency Commissioner.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

The Agency Commissioner will agree to termination of the Trust when the owner or operator substitutes alternate financial assurance as specified in this section.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the Agency Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Minnesota.

Section 20. Interpretation. As used in Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in part 7045.0524, subpart 12, as such regulations were constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

B. The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in parts 7045.0518, subpart 10, or 7045.0620, subpart 9.

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such

instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

[In subpart 12, the MPCA is adopting optional federal language regarding the wording of a trust agreement to meet liability requirements. The MPCA is slightly modifying a set of four related parenthetical phrases in Section 3 to reduce the potential for confusion. Similar clarifying changes were made to subparts 11 and 13. The existing federal language calls for a fund of "[up to ($1, 2, 3 or 6) million]" (towards various liability coverages). To a reasonable person, the phrase "[up to…]" is a counter-intuitive way to address liability which normally sets minimum amounts of required coverage (often "at least" some millions of dollars). Without understanding the larger context of the wording of this document, the phrase "up to" seems to set no minimum required amount of coverage. This is not the case and the EPA has explained to MPCA staff that it intends this language to apply in the larger context that any of the allowed financial assurance instruments may be used in combination to provide the minimum coverage required by federal 40 CFR 264.147(j), also found in Minnesota Rules part 7045.0518. By using the phrase "up to," the EPA intends the trust fund to make up any shortage between the other financial assurance instruments and the required coverage. The MPCA does not believe that existing federal Section 3 language makes this context clear. The federal language fails to acknowledge the minimum amount of coverage required by part 7045.0518. The MPCA believes that replacing the federal "[up to …]" phrase with the phrase "[insert dollar amount of the fund]" clarifies the intent of the federal language and removes potential confusion. The language of this subpart, except the change discussed above, is adopted from optional RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.151(m). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

Subp. 13.**Standby trust agreement for liability coverage.**

A. A standby trust agreement, as specified in part 7045.0518, subpart 8, or 7045.0620, subpart 7, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

STANDBY TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of a State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert, "incorporated in the State of _____" or "a national bank"], the "trustee."

Whereas, the Minnesota Pollution Control Agency (Agency), an agency of the State of Minnesota, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must

demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term Grantor means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term Trustee means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This Agreement pertains to the facilities identified on attached Schedule A [on Schedule A, for each facility list the identification number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund, hereafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of _____ [insert dollar amount of the fund] per occurrence and _____ [insert dollar amount of the fund] annual aggregate for sudden accidental occurrences and _____ [insert dollar amount of the fund] per occurrence and _____ [insert dollar amount of the fund] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) an employee or [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) whether [insert Grantor] may be liable as an employer or in any other capacity; and (B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2). (d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft. (e) Property damage to:

(1) any property owned, rented, or occupied by [insert Grantor];

(2) premises that are sold, given away, or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) property loaned [insert Grantor];

(4) personal property in the care, custody, or control of [insert Grantor]; or

(5) that particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the proceeds of the letter of credit deposited into the Fund. Such proceeds and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Agency.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third-party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted: The Trustee shall satisfy a third-party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[_____].

[Signature] Grantor

[Signature(s)] Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of the proceeds from the letter of credit drawn upon by the Trustee in accordance with the requirements of Minnesota Rules, part 7045.0524, subpart 11, and Section 4 of this Agreement.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge the trustee's duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, United States Code, title 15, section 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or State government;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the trustee in which the Fund is eligible

to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) to purchase shares in any investment company registered under the Investment Company Act of 1940, United States Code, title 15, section 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of the Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) to compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements to the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may reside or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment; the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Agency Commissioner and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests, certifications of valid claims, and instructions to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Agency Commissioner hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Agency, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be paid to the Grantor.

The Agency Commissioner will agree to termination of the Trust when the owner or operator substitutes alternative financial assurance as specified in this section.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor and the Agency Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced in accordance with the laws of the State of Minnesota.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation of the legal efficacy of this Agreement.

In Witness Whereof, the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 13, as such rule was constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

B. The following is an example of the certification of acknowledgment which must accompany the trust agreement for a standby trust fund as specified in parts 7045.0518, subpart 8, or 7045.0620, subpart 7.

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

[In subpart 13, the MPCA is adopting optional federal language regarding the wording of a trust agreement to meet liability requirements. The MPCA is slightly modifying a set of four related parenthetical phrases in Section 3 to reduce the potential for confusion. Similar clarifying changes were made to subparts 11 and 12 above. The existing federal language calls for a fund of "[up to ($1, 2, 3 or 6) million]" (towards various liability coverages). To a reasonable person, the phrase "[up to…]" is a counter-intuitive way to address liability which normally sets minimum amounts of required coverage (often "at least" some millions of dollars). Without understanding the larger context of the wording of this document, the phrase "up to" seems to set no minimum required amount of coverage. This is not the case and the EPA has explained to MPCA staff that it intends this language to apply in the larger context that any of the allowed financial assurance instruments may be used in combination to provide the minimum coverage required by federal 40 CFR 264.147(j), also found in Minnesota Rules part 7045.0518. By using the phrase "up to," the EPA intends the trust fund to make up any shortage between the other financial assurance instruments and the required coverage. The MPCA does not believe that existing federal Section 3 language makes this context clear. The federal language fails to acknowledge the minimum amount of coverage required by part 7045.0518. The MPCA believes that replacing the federal "[up to …]" phrase with the phrase "[insert dollar amount of the fund]" clarifies the intent of the federal language and removes potential confusion. The language of this subpart, except the change discussed above, is adopted from optional RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 264.151(n). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

7045.0526 USE AND MANAGEMENT OF CONTAINERS.

Subpart 1. **Scope.** This part applies to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as part 7045.0450 provides

otherwise. Under ~~parts~~ part 7045.0127 and ~~7045.0135, subpart 4, item C~~ Code of Federal Regulations, title 40, section 261.33(c), as incorporated in part 7045.0135, if a hazardous waste is emptied from a container, the residue remaining in the container is not considered a hazardous waste if the container is empty, as defined in part 7045.0127. In that event, management of the container is exempt from the requirements of this part.

[In subpart 1, the MPCA replaces a citation to repealed MN Rules with a citation to the equivalent federal rules as incorporated by reference.]//

[For text of subps 2 to 5, see M.R.]

Subp. 6. **Containment.** Requirements for containment systems are as described in items A to E.

[For text of items A and B, see M.R.]

C. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. If the collected material is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155, it must be managed as a hazardous waste ~~according to all applicable requirements of~~ in accordance with parts 7045.0205 to 7045.1030. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the federal Clean Water ~~Pollution Control~~ Act ~~Amendments of 1972~~, United States Code, title 33, section 1342, as amended.

[In item C, the MPCA corrects a citation to a range of rules that changed as parts were added. The MPCA also makes minor changes to simplify existing language. Finally, the MPCA updates an outdated reference to the federal Water Pollution Control Act, section 1342 that was superseded by the Clean Water Act, section 402.]//

[For text of item D, see M.R.]

E. Storage areas that store containers holding wastes F020, F021, F022, F023, F026, F027, and F028 from part 7045.0135, subpart ~~2~~ 1a, item B, that do not contain free liquids must have a containment system defined by item A.

[In item E, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

Subp. 7. **Special requirements for ignitable or reactive waste.** Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line when physically possible based on the dimensions of the property. When it is not physically possible to place containers at least 50 feet from the property line, based on the dimensions of the property, the ignitable or reactive waste must be placed at least as far as the specified minimum distance from property line found in ~~Table Number 79.503 F of~~ the Minnesota ~~Uniform~~ State Fire Code ~~as incorporated by reference in part 7510.3510~~, chapter 7510. Nothing in this subpart shall relieve the facility owner or operator from the obligation to comply with any local, state, or federal law governing storage of these wastes.

[In subpart 7, the MPCA corrects a reference to a previously amended State Fire Code.]//

[For text of subps 8 and 9, see M.R.]

Subp. 10. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a container in accordance with parts 7045.0540, 7045.0547, and 7045.0548.

[In subpart 10, the MPCA adopts language referencing the air emission standards that are being applied to containers at facilities as a result of this rulemaking. The reference is from required RCRA Amendment 154, 154-1.15: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers," = 40 CFR 264.179. Further information can be found in 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

7045.0528 TANK SYSTEMS.

Subpart 1. **Scope.** This part applies to owners and operators of facilities that use tank systems, including tank systems, sumps, and other such collection devices or systems used in conjunction with drip pads, as defined in part 7045.0020 and regulated under part 7045.0541, to treat or store hazardous waste, except as part 7045.0450, and items A and B provide otherwise.

A. Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in subpart 4. To demonstrate the absence or presence of free liquids in the stored or treated waste, ~~EPA~~ the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," ~~(~~EPA publication ~~No.~~ SW-846 ~~) must be used~~, incorporated in part 7045.0065, item D.

[In item A, the MPCA corrects the name of the EPA test method for verifying the presence of liquids in order to correspond to the federal counterpart at 40 CFR 264.190(a). The change is based on required RCRA Amendment 126: "Testing and Monitoring Activities." Further information can be found in 58 FR 46040-46051, August 31, 1993; as amended at 59 FR 47980-47982, September 19, 1994. The MPCA also provides language to clarify where to find the prescribed test method, which has changed as a result of these amendments.]//

[For text of item B, see M.R.]

[For text of subps 2 to 9, see M.R.]

Subp. 10. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a tank unless:

[For text of items A and B, see M.R.]

C. the tank is used solely for emergencies.

The owner or operator of a facility that treats or stores ignitable or reactive waste in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in the buffer zone requirements for tanks contained in ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510. As required by part 7045.0458, the waste analysis plan must include analyses needed to comply with these special requirements for ignitable or reactive waste. Additional requirements for ignitable and reactive wastes are contained in part 7045.0456, subpart 1. Part 7045.0456, subpart 3 also requires waste analysis, trial tests, or other documentation to ensure compliance with part 7045.0456, subpart 2. As required by part 7045.0478, the owner or operator shall place the results of

each waste analysis and trial test, and any documented information, in the operating record of the facility.

[In item C, the MPCA corrects a reference to a previously amended State Fire Code.]//

[For text of subp 11, see M.R.]

Subp. 12. **Air emission standards.** The owner or operator of a facility must manage all hazardous waste placed in a tank in accordance with parts 7045.0540, 7045.0547, and 7045.0548.

[In subpart 12, the MPCA adopts language from required RCRA Amendment 154.5, 154-1.16: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 264.200. Further information can be found in 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

7045.0532 SURFACE IMPOUNDMENTS.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Closure and postclosure care.** The requirements of closure and postclosure care are as follows:

A. At closure, the owner or operator shall:

(1) remove or decontaminate all waste residues, contaminated containment system components including liners, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless they are shown to not be hazardous ~~according to~~ in accordance with parts 7045.0102 to ~~7045.0143~~ 7045.0155; or

[In item A, the MPCA clarifies language and corrects a citation to a range of rules that changed as parts were added.]//

[For text of subitem (2), see M.R.]

[For text of items B to E, see M.R.]

Subp. 8. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[In subpart 8, the MPCA provides the replacement citation for a repealed range of rules being amended in this rulemaking.]//

[For text of items A to C, see M.R.]

Subp. 9. **Special requirements for incompatible wastes.** Incompatible wastes, or incompatible wastes and materials, must not be placed in the same surface impoundment unless compliance with part 7045.0456, subpart 2 is maintained. For examples of potentially incompatible wastes, or incompatible waste and materials, see part 7045.0543, subpart 1, item C.

[In subpart 9, the MPCA provides a citation to a rule that incorporates an appendix which lists examples of potentially incompatible wastes and materials. This citation corresponds to parenthetical information provided in the federal counterpart to this rule found at 40 CFR 264.230. The reference to part 7045.0543, subpart 1, item C is to the rule being added in this rulemaking that incorporates appendices from the federal regulations.]//

Subp. 10. **Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous waste F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a surface impoundment.

[In item A, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in surface impoundments unless the owner or operator operates the surface impoundment in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[In item B, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that additional requirements are necessary for surface impoundments used to treat, store, or dispose of hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[In item C, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

Subp. 11. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a surface impoundment in accordance with parts 7045.0540 and 7045.0548.

[In subpart 11, the MPCA adopts language from required RCRA Amendment 154.6, 154-1.17: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers," = 40 CFR 264.232. Further information can be found in 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

7045.0534 WASTE PILES.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Closure and postclosure care.** Closure and postclosure requirements are as follows:

A. At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components including liners, contaminated subsoils, and structures and equipment contaminated with waste and leachate; and manage them as hazardous waste unless they are shown to not be hazardous ~~according to~~ in accordance with parts 7045.0102 to ~~7045.0143~~ 7054.0150.

[In item A, the MPCA corrects a citation to a range of rules that changed as parts were added. The MPCA also revises language to read "in accordance with" to improve clarity.]//

[For text of items B to D, see M.R.]

Subp. 8. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a waste pile unless the waste and waste pile satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[In subpart 8, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of items A and B, see M.R.]

[For text of subp 9, see M.R.]

Subp. 10.**Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous waste F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a surface impoundment.

[In item A, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in surface impoundments unless the owner or operator operates the surface impoundment in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[In item B, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that additional requirements are necessary for surface impoundments used to treat, store, or dispose of hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[In item C, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

7045.0536 LAND TREATMENT.

[For text of subps 1 to 8, see M.R.]

Subp. 9. **Ignitable or reactive waste.** The owner or operator shall not apply ignitable or reactive waste to the treatment zone unless the waste and the treatment zone meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[In subpart 9, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of items A and B, see M.R.]

[For text of subp 10, see M.R.]

Subp. 11.**Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous wastes F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a land treatment unit.

[In item A, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be managed at land treatment units unless the owner or operator operates the land treatment unit in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[In item B, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that the additional requirements are necessary for land treatment facilities used to treat or dispose of hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[In item C, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

7045.0538 LANDFILLS.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Closure and postclosure care.** Closure and postclosure care requirements are as follows:

[For text of item A, see M.R.]

B. After final closure, the owner or operator shall comply with all postclosure requirements contained in parts 7045.0488 to 7045.0494 including maintenance and monitoring throughout the postclosure care period specified in the permit under part 7045.0488. The owner or operator shall:

[For text of subitems (1) to (3), see M.R.]

(4) maintain and monitor the leak detection system in accordance with subparts 3, item C, subitems (3), unit (d), and (4); and 5, item C, and comply with all other applicable leak detection system requirements of ~~this part~~ parts 7045.0450 to 7045.0551 governing facility standards;

[In subitem (4), the MPCA is correcting an error in rule language that it adopted in a prior rulemaking. The MPCA adopted federal language that used the words 'this part.' Both State rules and federal regulations use the term 'part,' however, each use has a slightly different meaning. The MPCA corrects this rule language to clarify the

intended meaning and to address an EPA comment regarding equivalence with the federal rule.]//

[For text of subitems (5) to (8), see M.R.]

[For text of item C, see M.R.]

Subp. 8. **Special requirements for ignitable or reactive waste.** Special requirements for ignitable or reactive waste are as follows:

A. Except as provided in item B and subpart 12, ignitable or reactive waste must not be placed in a landfill, unless the waste and landfill meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under part 7045.0131, subpart 2 or 5, and compliance with part 7045.0456, subpart 2 is maintained.

[In item A, the MPCA provides the replacement citation for a repealed range of rules.]//

B. Except for prohibited wastes which remain subject to treatment standards in ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part 7045.1390, ignitable wastes in containers may be landfilled without meeting the requirements of item A, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

[In item B, the MPCA replaces citations to repealed State rules with citations to equivalent federal rules as incorporated by reference.]//

[For text of subp 9, see M.R.]

Subp. 10.**Special requirements for liquid waste.** Special requirements for liquid waste are as follows:

A. The placement in any landfill of bulk or noncontainerized liquid hazardous waste or waste containing free liquids, whether or not ~~absorbents~~ sorbents have been added, is prohibited.

[In item A, the MPCA adds the phrase "in any landfill" to make the context clear. The MPCA also adopts federal language regarding the use of sorbents in landfills from required RCRA Amendment 118: "Liquids in Landfills II," = 40 CFR 264.314(a). Further information can be found in 57 FR 54452-54461, November 18, 1992. This changes the term "absorbents" to the more broadly applicable term "sorbents," which includes materials that both absorb and adsorb waste. Sorbent is also used in the federal counterpart, 40 CFR 264.314(a).]//

B. Containers holding free liquids must not be placed in a landfill unless:

(1) all free-standing liquid has been removed by decanting, or other methods; has been mixed with ~~absorbent~~ sorbent or solidified so that freestanding liquid is no longer observed; or has been otherwise eliminated;

[In subitem (1), the MPCA adopts federal language from required RCRA Amendment 118: "Liquids in Landfills II," = 40 CFR 264.314(b). Further

information can be found in 57 FR 54452-54461, November 18, 1992. This changes the term "absorbent" to the more broadly applicable term "sorbent," which includes materials that both absorb and adsorb waste. Sorbent is the term used in the federal counterpart, 40 CFR 264.314(d)(1).]//

(2) the container is very small, such as an ampoule; or

(3) the container is a laboratory pack as defined in subpart 12 and is disposed of in accordance with subpart 12.

C. To demonstrate the ~~presence or~~ absence or presence of free liquids in either a containerized or a bulk waste, the following test must be ~~demonstrated using the Paint Filter Liquids Test,~~ used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," EPA publication ~~number~~ SW-846, incorporated in part 7045.0065, item D.

[In item C, the MPCA rephrases existing language and makes corrections to information regarding the name of the EPA test methods for determining the presence of liquids. This amendment is based on required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 265.314(c). Further information can be found in 58 FR 46040-46051, August 31, 1993; as amended at 59 FR 47980-47982, September 19, 1994.]//

D. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are materials listed or described in subitem (1) or materials that pass one of the tests in subitem (2).

(1) Nonbiodegradable sorbents:

(a) inorganic minerals, other inorganic materials, and elemental carbon (for example, aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, and zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), and diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; and activated charcoal/activated carbon);

(b) high molecular weight synthetic polymers (for example, polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene, and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(c) mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents must use the following methods. The methods and tests in this subitem are incorporated by reference, are not subject to frequent change, and are available through the Minitex interlibrary loan system:

(a) the sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a), Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi;

(b) the sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b), Standard Practice for Determining Resistance of Plastics to Bacteria; or

(c) the sorbent material is determined to be nonbiodegradable under OECD test 301B: CO_2 Evolution (Modified Sturm Test).

[In item C, the MPCA rephrases existing language and makes corrections to information regarding the name of the EPA test methods for determining the presence of liquids. This amendment is based on required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 265.314(c). Further information can be found in 58 FR 46040-46051, August 31, 1993; as amended at 59 FR 47980-47982, September 19, 1994.]//

[For text of subp 11, see M.R.]

Subp. 12.**Disposal of small containers of hazardous waste in overpacked drums.** Small containers of hazardous waste in overpacked drums, or laboratory packs, may be placed in a landfill if the requirements of items A to F are met:

A. Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type ~~specified~~ authorized in the United States Department of Transportation hazardous materials regulations under Code of Federal Regulations, title 49, parts 173, 178, ~~and~~ 179, and 180, as amended, if those regulations specify a particular inside container for the waste.

[In item A, the MPCA is amending the State rules on the advice of Minnesota's Department of Transportation. The amendments revise language to conform with amended U.S. Department of Transportation regulations. The language of this item is slightly different than the federal counterpart found at 40 CFR 264.316(a), but the MPCA believes it is the more accurate and current reference to the applicable United States Department of Transportation requirements.]//

B. The inside containers must be overpacked in ~~an open~~ a removable head metal shipping container as specified in the United States Department of Transportation regulations under Code of Federal Regulations, title 49, section 173.12 and parts 178 ~~and~~, 179, and 180, as amended~~, of no more than 415 liter (110 gallon) capacity and~~. The inside containers must be surrounded by, at a minimum, a sufficient quantity of ~~absorbent~~ chemically compatible sorbent material, determined to be nonbiodegradable in accordance with subpart 10, item D, to completely ~~absorb~~ sorb all of the liquid contents of the inside containers. The gross weight of the complete package must not exceed 205 kilograms (452 pounds). The metal outer container must be full after ~~packing~~ it has been packed with inside containers and ~~absorbent~~ sorbent materials.

[In item B, the MPCA is amending existing language to address changes to the corresponding federal EPA regulations regarding overpacking of containers and also to address changes made to the federal Department of Transportation regulations. The MPCA is adopting language from required RCRA Amendment 118.4: "Liquids in Landfills II," = 40 CFR 264.316(b). Further information can be found in 57 FR 54452-54461, November 18, 1992. The MPCA also revises the rule to reflect revisions in the cited U.S. Department of Transportation regulations regarding the size limits of the container. Finally, the MPCA provides a corrected citation to a range of regulations that have been amended by the U.S. Department of Transportation.]//

C. The ~~absorbent~~ sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with part 7045.0456, subpart 2.

[In item C, the MPCA changes the term absorbent to the more broadly applicable term sorbent, following federal language from required RCRA Amendment 118: "Liquids in Landfills II," = 40 CFR 264.316(c). Further information can be found in 57 FR 54452-54461, November 18, 1992.]//

[For text of items D and E, see M.R.]

F. The disposal is in compliance with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390. Persons who incinerate lab packs ~~according to part 7045.1360~~ in accordance with Code of Federal Regulations, title 40, section 268.42, as incorporated in part 7045.1390, may use fiber drums in place of metal outer containers. The fiber drums must meet United States Department of Transportation specifications in Code of Federal Regulations, title 49, section 173.12, as amended, and be overpacked ~~according to the requirements~~ in accordance with item B.

[In item F, the MPCA provides the replacement citation for a repealed range of rules and adds citations to equivalent federal rules as incorporated by reference. The MPCA also makes slight modifications to existing language to improve clarity.]//

Subp. 13.**Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous wastes F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a landfill.

[In item A, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be managed at landfills unless the owner or operator operates the landfill in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[In item B, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that the additional requirements are necessary for landfills used to dispose of hazardous waste F028 and treatment residues and soil contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

[In item C, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

7045.0539 MISCELLANEOUS UNITS.

[For text of subpart 1, see M.R.]

Subp. 2. **Environmental performance standards.** A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will

ensure protection of human health and the environment. Permits for miscellaneous units are to contain the terms and provisions necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions shall include those requirements of parts ~~7023.9000 to 7023.9050,~~ 7045.0526 to 7045.0542, 7045.0547, and 7045.0548, and chapter 7001 that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:

[In subpart 2, the MPCA deletes a citation to chapter 7023 that was repealed in a previous rulemaking. The MPCA also adopts cross references to the air emission standards that apply to miscellaneous units. These references were added through amendments to the federal regulations found at required RCRA Amendment 154-1.18: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers," = 40 CFR 264.601. Further information can be found in 59 FR 62896-62953, December 6, 1994.]//

[For text of items A to C, see M.R.]

[For text of subps 3 and 4, see M.R.]

7045.0540 AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers must comply with Code of Federal Regulations, title 40, part 264, subpart CC, air emission standards for tanks, surface impoundments, and containers, sections 264.1080 to 264.1090, as amended, which are incorporated by reference subject to the exceptions in subpart 2.

[The MPCA is creating a new rule part to include new requirements addressing air emission standards that will apply to tanks, surface impoundments and containers. The State rules previously provided air emission standards only for process vents (part 7045.0547) and equipment leaks (part 7045.0548). The new standards, referenced in subpart 1, are based on federal regulations found in required RCRA Amendment 154, 154-1, 154-2, 154-3, 154-4, 154-5, 154-6: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers," = 40 CFR 264.1080-1091. Further information can be found in 59 FR 62896-62953, December 6, 1994; as amended by 60 FR 26828-26829, May 19, 1995; 60 FR 50426-50430, September 29, 1995; 60 FR 56952-56954, November 13, 1995; 61 FR 4903-4916, February 9, 1996; 61 FR 28508-28511, June 5, 1996; and 61 FR 59932-59997, November 25, 1996. By adopting the federal regulations by reference, the MPCA also adopts language from required RCRA Amendment 163.11-18: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment" = 40 CFR 264.1080(b)(1); 264.1080(c); 264.1082(b); 264.1082(c)(2)(ix)(A-B); 264.1082(c)(3); 264.1082(c)(4)(ii); 264.1083(a)(2); 264.1083(b)(1); 264.1084(c)(2)(iii); 264.1084(c)(2)(iii)(B); 264.1084(c)(2)(iii)(B)(12); 264.1084(e)(4); 264.1084(f)(3)(i)(D)(4); 264.1084(f)(3)(iii); 264.1084(f)(4); 264.1084(j)(2)(iii); 264.1085(b)(2); 264.1085(d)(1)(iii); 264.1085(d)(2)(i)(B);

264.1085(e)(2)(iii); 264.1086(c)(2); 264.1086(c)(4)(i); 264.1086(d)(2); 264.1086(d)(4)(i); 264.1086(g); 264.1087(c)(3)(ii); 264.1087(c)(7); 264.1089(a); 264.1089(b)(1)(ii)(B); 264.1089(f)(1); and 264.1089(j)(1-2). Further information about these amendments can be found in 62 FR 64636-64671, December 8, 1997. Finally, in this subpart, the MPCA adopts language from required RCRA Amendment 177: "Organic Air Emission Standards: Clarification and Technical Amendments," = 40 CFR 264.1080(b)(5); 264.1083(a)(1)(i-ii); 264.1083(b)(1)(i-ii); 264.1084(h)(3)(i-ii). Further information about these amendments can be found in 64 FR 3382, January 21, 1999.]//

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.**

A. The agency does not incorporate the following Code of Federal Regulations, title 40, part 264, subpart CC provisions, as amended:

(1) Code of Federal Regulations, title 40, section 264.1080(d) to (g), governing specific exclusions; and

(2) Code of Federal Regulations, title 40, section 264.1082(c)(4)(ii), governing authority that EPA cannot delegate to states.

[In item A, the MPCA clarifies that it does not incorporate specific federal exclusions that do not apply in Minnesota. The exceptions to the adoption by reference are: (1) The MPCA does not adopt the exclusions for peroxide manufacturers or site specific exclusions for sites that are located in states other than Minnesota; and (2) The MPCA does not have the authority to grant variances to specific land disposal treatment standards.]//

B. Part 7045.0090, adoption and incorporation by reference, also applies.

[In item B, the MPCA clarifies that the conditions established in part 7045.0090 also apply to this incorporation by reference.]//

7045.0542 THERMAL TREATMENT.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Performance standards.** A thermal treatment facility thermally treating hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under subpart 6 it will comply with all federal and state air quality rules and regulations and will meet the performance standards of items A to E, whichever are applicable:

[For text of items A to D, see M.R.]

E. A thermal treatment facility thermally treating hazardous wastes F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must achieve a destruction and removal efficiency ("DRE") of 99.9999 percent for each principal organic hazardous constituent designated in its permit. This performance must be demonstrated on principal organic hazardous constituents that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each principal organic hazardous constituent from the equation in item A. In addition, the owner or operator of the thermal treatment facility must notify the commissioner of the intent to burn waste F020, F021, F022, F023, F026, or F027.

[In item E, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

[For text of subps 5 to 9, see M.R.]

7045.0543 APPENDICES TO FACILITY STANDARDS.

[The MPCA adds a new part 7045.0543.]//

Subpart 1. **Incorporation of federal regulations.** The following appendices found in Code of Federal Regulations, title 40, part 264, as amended, are incorporated by reference:

[In subpart 1, items A to E, the MPCA incorporates by reference the Appendices to Facility Standards that are found in 40 CFR 265. By adopting the federal appendices by reference as amended, the MPCA is adopting standards or tests that are referenced either in current rules or in rules that are being adopted or revised for interim status facilities in this rulemaking. By adopting these appendices by reference as amended, the MPCA will ensure that the most current version of these standards will be incorporated into the State rules. The MPCA's discussion of the reasonableness of incorporating federal regulations "as amended" is provided in Section IV of this Statement. A detailed explanation is provided below for the federal appendices that are being incorporated in this rulemaking.]//

A. Appendix I, Recordkeeping Instructions;

[In item A, the MPCA incorporates 40 CFR 264, Appendix I, which contains instructions on how hazardous waste records must be kept. These appendices were adopted by EPA as part of required RCRA Amendment 131.2: "Recordkeeping Instructions; Technical Amendment," = 40 CFR 264 Appendix I, Tables 1 and 2. Further information can be found in 59 FR 13891-13893, March 24, 1994.]//

B. Appendix IV, Cochran's Approximation to the Behrens-Fisher Students' T-test;

[In item B, the MPCA incorporates 40 CFR 264, Appendix IV, the Behrens Fisher T-test. The details of this test were formerly located in part 7045.0544 but are being adopted by reference in this rulemaking in order to accommodate future changes and also to more conveniently locate information regarding the federal Appendices in one rule part. However, a reference to the T-test in part 7045.0544 is being retained to accommodate existing cross references.]//

C. Appendix V, Examples of Potentially Incompatible Waste; and

[In item C, the MPCA incorporates 40 CFR 264, Appendix V, which is the list of examples of potentially incompatible waste. This list is referenced in an amendment to part 7045.0532 being added in this rulemaking. The MPCA believes it is reasonable to incorporate this list of examples, by reference, in order to accommodate future revisions.]//

D. Appendix IX, Ground Water Monitoring List.

[In item D, the MPCA incorporates 40 CFR 264, Appendix IX, the ground water monitoring list. This adoption by reference of Appendix IX replaces the list formerly provided in part 7045.0143. The MPCA believes, for the reasons provided in the discussion in part IV of this Statement, that incorporating the list by reference will provide better future accuracy of this list. Because the list in 7045.0143 is specifically referred to in two places in the existing rules (7001.0640 subpart 1, item D subitem (2) and subpart 13, item E), the MPCA is not repealing that existing rule part, but is instead deleting the existing list and providing a cross reference to the rule (7045.0543, item D (above) that incorporates the federal Appendix IX by reference.)//

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

[In subpart 2, the MPCA provides exceptions to its incorporations in subpart 1. The MPCA also refers readers to part 7045.0090 governing general adoption and incorporation by reference.]//

7045.0544 COCHRAN'S APPROXIMATION TO THE BEHRENS-FISHER STUDENTS' T-TEST.

Subpart 1. **In general.** ~~Subpart 2 describes Cochran's approximation to the Behrens-Fisher Students' t-test. Subpart 3 presents the standard t-tables at the 0.05 level of significance.~~ Part 7045.0543, subpart 1, item B, incorporates this test by reference.

Subp. 2. [See repealer.]

Subp. 3. [See repealer.]

[The MPCA amends this part by cross referencing to part 7045.0543, subp. 1, item B where the MPCA has incorporated the Cochran's Approximation from the federal rules. The MPCA retains part 7045.0544 as a reference point for existing cross references within the rules. The MPCA believes it is reasonable to minimize changes to cross references as much as possible by retaining this existing rule part.]//

7045.0550 CONTAINMENT BUILDINGS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of facilities that store or treat hazardous waste in containment buildings must comply with Code of Federal Regulations, title 40, part 264, subpart DD, Containment Buildings, sections 264.1100 to 264.1110, as amended, which is incorporated by reference subject to the exceptions in subpart 2.

[In subpart 1, of new part 7045.0550, the MPCA incorporates by reference language from required RCRA Amendment 109.17: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris," = 40 CFR 264.1100-1102, Subpart DD. Further information regarding this amendment can be found in 57 FR 37194-37282, August 18, 1992.]//

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

[In subpart 2, the MPCA provides any exceptions to its incorporation by reference and refers readers to the general part governing adoption and incorporation by reference.]//

7045.0552 FACILITIES GOVERNED BY INTERIM STATUS.

Subpart 1. **General requirements.** Parts 7045.0552 to ~~7045.0642~~ 7045.0651 establish minimum standards for the management of hazardous waste during the period of interim status and until certification of final closure or, if the facility is subject to postclosure requirements, until postclosure responsibilities are fulfilled. Except as provided in Code of Federal Regulations, title 40, section 265.1080(b), as incorporated in part 7045.0645, the standards in parts 7045.0552 to 7045.0651, and the standards for the corrective action management units in part 7045.0545, temporary units in part 7045.0546, and staging piles

in part 7045.0547, apply to: (1) owners and operators of facilities that treat, store, or dispose of hazardous waste who have fully complied with the requirements for interim status under chapter 7001 and section 3005(e) of the federal Resource Conservation and Recovery Act (RCRA) until either a permit is issued under chapter 7001 and section 3005 of RCRA or until applicable interim status closure and postclosure responsibilities are fulfilled and (2) those owners and operators of facilities in existence on November 19, 1980, who have failed to provide timely notification as required by section 3010(a) of RCRA or failed to file Part A of the permit application in chapter 7001. These standards, and those in parts 7045.0545 to 7045.0547, apply to owners and operators of existing facilities who have fully complied with the requirements for state or federal interim status until a permit is issued or until applicable interim status closure and postclosure responsibilities are fulfilled, and those who have failed to achieve state or federal interim status.

[In two places in subpart 1, the MPCA corrects citations to a range of rules that changed as parts were added. The MPCA also adopts language from required RCRA Amendment 154-1.22: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.1(b). Further information regarding this amendment can be found in 59 FR 62896-62953, December 6, 1994.]//

Parts 7045.0552 to ~~7045.0642~~ 7045.0651 apply to the owners and operators of all facilities that treat, store, or dispose of hazardous waste referred to in ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, land disposal restrictions, and those restrictions are considered material conditions or requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651, interim status standards.

[In this paragraph of subpart 1, the MPCA corrects citations to two ranges of rules that changed as parts were added. The MPCA also provides the correct citation, 7045.1390, for a repealed range of rules.]//

Subp. 1a. **Applicability for owners and operators of facilities not regulated as hazardous waste facilities by federal regulation.** Owners and operators of hazardous waste facilities that are not federally regulated as hazardous waste facilities that are, for example, regulated as facilities by state rule only, are subject to the applicable requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651 on the effective date of any rules that make the facility subject to regulation. The facility shall submit a Part B application for a hazardous waste facility permit to the commissioner within one year of the effective date of any rules that first make the facility subject to the requirement to obtain a hazardous waste facility permit.

[In subpart 1a, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subp 2, see M.R.]

Subp. 3. **Exemptions.** The requirements of parts 7045.0552 to ~~7045.0648~~ 7045.0651 do not apply to the following specific waste management units, facilities, or activities, although all other waste management activities of the owner or operator may be regulated:

[In subpart 3, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of item A, see M.R.]

B. a facility managing recyclable hazardous wastes subject to regulation under part 7045.0125, 7045.0665, 7045.0675, or 7045.0685; however, this exemption does not apply where part 7045.0125, 7045.0665, 7045.0675, or 7045.0685 makes the requirements of parts 7045.0552 to ~~7045.0648~~ 7045.0651 applicable by cross-reference;

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items C to E, see M.R.]

F. an elementary neutralization unit, a pretreatment unit, or a wastewater treatment unit, if the unit does not receive hazardous waste from generators other than the owner or operator of the unit, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 high TOC subcategory defined in Code of Federal Regulations, title 40, section 268.40, Table of Treatment Standards for Hazardous Wastes, as incorporated in part 7045.1390), or reactive (D003) waste, to remove the characteristic before land disposal, the owner or operator must comply with part 7045.0562, subpart 2;

[For text of items G to I, see M.R.]

[In item F, the MPCA adds qualifying conditions to an existing exclusion for elementary neutralization units, pretreatment units and wastewater treatment units. The conditions only apply to units treating two specific waste characteristics (ignitable and reactive) and reference existing requirements in part 7045.0562, subpart 2 (which addresses required precautions) for managing these wastes. The additional conditions correspond to requirements found in RCRA Amendment 137.13: "Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes" = 40 CFR 265.1(c)(10). Further information regarding the need for and reasonableness of this amendment can be found in 59 FR 47982-48110, September 19, 1994, as amended at 60 FR 242-302, January 3, 1995. Although the language being added at this time is essentially the same as the federal regulations (except for the substitution of cross references to State rule parts and the removal of a reference to the definitions part of the rules), this exclusion remains more restrictive than the federal counterpart because the existing language restricts this exemption to waste generated onsite. This is reasonable as the MPCA has consistently not allowed accepting waste from off-site at unpermitted facilities. This is an existing difference and is not being changed as a result of this rulemaking.]//

J. (1) except as provided in subitem (2), treatment or containment activities during immediate response to any of the following situations: a discharge of a hazardous waste, an imminent and substantial threat of a discharge of a hazardous waste, or a discharge of a material which, when discharged, becomes a hazardous waste;

(2) a facility otherwise regulated by parts 7045.0552 to ~~7045.0642~~ 7045.0651 shall comply with all applicable requirements of parts 7045.0395, 7045.0397, 7045.0558, and 7045.0566 to 7045.0576; or

[In subitem (2), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

(3) a person who is covered by subitem (1) and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651 and the agency's permitting procedures for those activities;

[In subitem (3), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

K. treatment of hazardous waste by the generator in the generator's accumulation tanks or containers in accordance with part 7045.0292. If the treatment involves evaporation of aqueous waste or polymerization of polyester or other chemical fixation treatment processes in open containers, the generator is exempt from parts 7045.0552 to ~~7045.0642~~ 7045.0651, but before beginning the treatment process must submit to the commissioner the information required under part 7045.0539, subpart 2, items A to C, that is relevant to the treatment activity and must be notified by the commissioner that the treatment activity is approved. The commissioner shall approve the treatment activity if the commissioner finds that the treatment activity will not endanger human health and the environment; or

[In item K, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of item L, see M.R.]

Subp. 4. **Restrictions.** Hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be managed at facilities governed by interim status unless:

[In subpart 4, the MPCA replaces a citation to a repealed subpart with the revised citation.]//

[For text of items A to C, see M.R.]

7045.0556 GENERAL FACILITY STANDARDS.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Required notices.** Notices are required in the following situations:

[For text of items A and B, see M.R.]

C. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the postclosure care period, the owner or operator shall notify the new owner or operator in writing of the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651. An owner's or operator's failure to notify the new owner or operator of these requirements does not relieve the new owner or operator of the obligation to comply with all applicable requirements.

[In item C, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of item D, see M.R.]

Subp. 4. **Security.** Security measures include the following:

A. The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless:

[For text of subitem (1), see M.R.]

(2) disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651.

[In subitem (2), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items B and C, see M.R.]

Subp. 5. **General inspection requirements.** General inspection requirements are listed in items A to E.

[For text of items A and B, see M.R.]

C. The frequency of inspection may vary for the items on the schedule. However, ~~it~~ the frequency must be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration ~~or~~, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies called for in parts 7045.0626, subpart 5; 7045.0628, subparts 4 and 7; 7045.0630, subpart 5; 7045.0632, subpart 9; 7045.0634, subpart 4; 7045.0638, subpart 2c; 7045.0640, subpart 4; and 7045.0642, subpart 4; and the process vent ~~and~~, equipment leak , and tank, surface impoundment, and container standards in Code of Federal Regulations, title 40, sections ~~264.1033, 264.1052, 264.1053, and 264.1058~~ 265.1033, 265.1052, 265.1053, and 265.1058, as amended, and sections 265.1084 to 265.1090(b), as incorporated in part 7045.0645.

[In the first sentences of item C, the MPCA has made several changes simply to clarify the meaning of existing language. These changes do not alter the effect of the rule and are not based on federal amendments. The MPCA also adopts references to newly added requirements addressing air emissions from tanks, surface impoundments and containers that are based on required RCRA Amendment 154-1.25: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.15(b)(4). Further information regarding the amendments can be found in 59 FR 62896-62953, December 6, 1994. This amendment also adopts language from required RCRA Amendment 163.20: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment" = 40 CFR 265.15(b)(4). A discussion of these amendments can be found in 62 FR 64636-64671, December 8, 1997.]//

[For text of items D and E, see M.R.]

[For text of subps 6 to 8, see M.R.]

7045.0564 WASTE ANALYSIS REQUIREMENTS.

Subpart 1. **Waste analysis.** The analysis must comply with the requirements in items A to D.

A. Before an owner or operator treats, stores, or disposes of any hazardous waste, or nonhazardous waste if applicable under part 7045.0596, subpart 2a, the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the waste. This analysis must contain all the information which must be known in order to treat, store, or dispose of the waste in accordance with the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390.

[In item A, the MPCA corrects a citation to a range of rules that changed as parts were added. The MPCA also provides the replacement citation for a repealed range of rules.]//

B. The analysis may include data developed under parts 7045.0102 to ~~7045.0143~~ 7045.0155, and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes, including data obtained from the generator.

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items C and D, see M.R.]

Subp. 2. **Waste analysis plan.** The owner or operator shall develop and follow a written waste analysis plan which describes the procedures the owner or operator will carry out to comply with subpart 1. The owner or operator shall keep this plan at the facility. The plan must specify:

[For text of items A to E, see M.R.]

F. Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in parts 7045.0628, subpart 12; 7045.0630, subpart 4; 7045.0632, subpart 3; 7045.0634, subpart 3; 7045.0638, subpart 7; 7045.0640, subpart 2; and 7045.0642, subpart 3; ~~and 7045.1315~~ Code of Federal Regulations, title 40, section 268.7, as incorporated in part 7045.1390; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures in Code of Federal Regulations, title 40, sections ~~264.1034(d) and 264.1063(d)~~ 265.1034(d) and 265.1063(d), as amended, and section 265.1084, as incorporated in part 7045.0645.

[In item F, the MPCA replaces citations to repealed land disposal restriction rules with citations to the new land disposal rules being adopted in this rulemaking. This amendment refers directly to the federal counterpart being adopted by reference in this rulemaking, because in part 7045.1390 where this information is being incorporated by reference, the incorporation does not provide the necessary level of specificity to identify the applicable section. This amendment corresponds to 40 CFR 265.13(b)(6). It is based on required RCRA Amendment 154-1.23: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers." Further information can be found in 59 FR 62896-62953, December 6, 1994.]//

G. For off-site facilities, the waste analysis plan must also specify the procedures ~~which~~ that will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. The plan must describe:

(1) the procedures ~~which~~ that will be used to determine the identity of each movement of waste managed at the facility; ~~and~~

(2) the sampling method ~~which~~ that will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling; and

[In item G, and subitems (1) and (2), the MPCA changes "which" to "that" for grammatical purposes. The MPCA also adds the word, "and" to accommodate this expanded list.]

(3) the procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

In subitem (3) the MPCA adds a requirement for a plan to contain information about the use of sorbents to eliminate free liquids in waste being landfilled. This requirement is from required RCRA Amendment 118.2: "Liquids in Landfills II" = 40 CFR 265.13(c)(3). Further information regarding the need for and reasonableness of this amendment can be found in 57 FR 54452-54461, November 18, 1992.]//

H. For surface impoundments exempted from the land disposal restrictions under ~~part 7045.1310~~ Code of Federal Regulations, title 40, section 268.4, as incorporated in part 7045.1390, the procedures and schedule for:

(1) the sampling of impoundment contents;

(2) the analysis of test data; and

(3) the annual removal of residues which are not delisted under part 7045.0075, subpart 2, or which exhibit a characteristic of hazardous waste under part 7045.0131, and either do not meet applicable treatment standards of ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part 7045.1390, or, where no treatment standards have been established, such residues are prohibited from land disposal under ~~parts 7045.1320 to 7045.1333~~ Code of Federal Regulations, title 40, sections 268.30 to 268.35, as incorporated in part 7045.1390, or RCRA section 3004(d).

[In item H, the MPCA replaces citations to repealed rules with citations to equivalent federal rules as incorporated by reference.]//

I. For owners and operators seeking an exemption to the air emission standards in part 7045.0540 in accordance with Code of Federal Regulations, title 40, section 265.1083, as incorporated in part 7045.0645:

(1) if direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis and the results of the analysis of test data to verify the exemption; and

(2) if knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off site, that is used as the basis for knowledge of the waste.

[In item I, subitems (1) and (2), the MPCA is adding requirements that apply to waste analysis at facilities that are subject to the air emission standards being added in this rulemaking. The adopted language is from required RCRA Amendments 154-1.24, and 154-5: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.13(b)(8). Further information may be found in 59 FR 62896-62953, December 6, 1994. The MPCA also adds language to clarify that air emission standards are found in part 7045.0540.]//

7045.0584 OPERATING RECORD.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Record information.** The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

[For text of items A and B, see M.R.]

C. A description and the quantity of each hazardous waste received, and the method and date of treatment, storage, or disposal at the facility in accordance with the

record-keeping instructions in Code of Federal Regulations, title 40, part 265, Appendix I, as incorporated in part 7045.0643.

[In item C, the MPCA initiates adding a reference to recordkeeping requirements that must be followed. This language corresponds to federal provisions in 40 CFR 265.73(b)(1).]//

[For text of item D, see M.R.]

E. Records and results of waste analyses, waste determinations, and trial tests performed as specified in parts 7045.0564; 7045.0628, subpart 12; 7045.0630, subpart 4; 7045.0632, subpart 3; 7045.0634, subpart 3; 7045.0638, subpart 7; 7045.0640, subpart 2; and 7045.0642, subpart 3; ~~7045.1310; and 7045.1315~~ Code of Federal Regulations, title 40, sections 268.4(a) and 268.7, as incorporated in part 7045.1390; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures in Code of Federal Regulations, title 40, sections ~~264.1034 and 264.1063~~ 265.1034 and 265.1063, as amended, and section 265.1084, as incorporated in part 7045.0645.

[In item E, the MPCA is adding requirements that apply to the operating records at facilities that are subject to the air emission standards being added in this rulemaking. This language is based on required RCRA Amendment 154-1.26: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.73(b)(3). Further information regarding this amendment can be found in 59 FR 62896-62953, December 6, 1994. The MPCA also replaces citations to repealed rules with citations to equivalent federal rules as incorporated by reference. Finally, the MPCA replaces two incorrect citations to two CFR sections in part 264 with the appropriate citations in part 265.]//

[For text of items F and G, see M.R.]

H. Monitoring, testing, or analytical data, and corrective action where required by parts 7045.0556, subpart 8; 7045.0590, subparts 1, 6, 7, and 8; 7045.0592, subparts 1 and 7; 7045.0628, subparts 2, 4, and 7; 7045.0630, subparts 2a, 3, and 5; 7045.0632, subparts 4b, 8, and 9; 7045.0634, subparts 4 and 6, item D, subitem (1); 7045.0636; 7045.0638, subparts 2a, 2b, and 2c; and 7045.0640, subpart 4, and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures and record keeping requirements in Code of Federal Regulations, title 40, sections ~~264.1034~~ 265.1034(c) to (f), ~~264.1035, 264.1063~~ 265.1035, 265.1063(d) to (i), and ~~264.1064~~ 265.1064, as amended, and sections 265.1083 to 265.1090, as incorporated in part 7045.0645. As required by parts 7045.0590, subparts 6 and 7; and 7045.0592, subpart 7, monitoring data at disposal facilities must be kept throughout the postclosure period.

[In item H, the MPCA is adding requirements that apply to the operating records at facilities that are subject to the air emission standards being added to this rulemaking. This amendment is based on required RCRA Amendment 154-1.26: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.73(b)(6). Further information can be found in 59 FR 62896-62953, December 6, 1994. This amendment also addresses changes based on required RCRA Amendment 163.21: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment" = 40 CFR 265.73(b)(6). Further information may be found in 62 FR 64636-64671, December 8,

1997. Finally, the MPCA replaces incorrect citations to federal regulations found in part 264 with the appropriate citations to related regulations in part 265.]//

[For text of item I, see M.R.]

J. Records of the quantities and date of placement of each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted ~~under part 7045.0075, subpart 8 or 9,~~ by the United States Environmental Protection Agency under Code of Federal Regulations, title 40, section 268.5, monitoring data required pursuant to a petition under part 7045.0075, subpart 9, or a certificate and demonstration under Code of Federal Regulations, title 40, section 268.8, as ~~amended~~ incorporated in part 7045.1390, and the notice required by a generator under ~~part 7045.1315, subpart 1, item C~~ Code of Federal Regulations, title 40, section 268.7(a)(3), as incorporated in part 7045.1390.

[In item J, the MPCA revises language to clarify that only the EPA can grant extensions to the effective dates for land disposal restrictions. In this rulemaking the MPCA is repealing part 7045.0075, subpart 8, and replacing citations to it with the applicable federal citation. The MPCA also replaces citations to other repealed rules with citations to equivalent federal regulations that are being incorporated in this rulemaking by reference.]//

K. For an off-site treatment facility, the notice, and the certification and demonstration, if applicable, required by a generator or the owner or operator under Code of Federal Regulations, title 40, ~~section~~ sections 268.7(a)(1) and 268.8, as ~~amended, and part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390.

[In item K, the MPCA replaces a citation to a repealed rule with citations to equivalent federal regulations as incorporated by reference.]//

L. For an on-site treatment facility, the information contained in the notice and the certification and demonstration, if applicable, required by a generator or the owner or operator under Code of Federal Regulations, title 40, ~~section~~ sections 268.7(a)(1) and 268.8, as ~~amended , and part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390, except for the manifest number required under ~~part 7045.1315, subpart 1, item A, subitem (3)~~ Code of Federal Regulations, title 40, section 268.7(a)(1)(i), as incorporated in part 7045.1390.

[In item L, the MPCA replaces citations to a repealed rule with citations to equivalent federal regulations as incorporated by reference.]//

M. For an off-site land disposal facility, the notice, certification and demonstration, if applicable, required by the generator, owner or operator of a treatment facility under Code of Federal Regulations, title 40, section 268.7(b)(1)(2) or 268.8, as ~~amended, or part 7045.1315, subpart 2, items A and B~~ incorporated in part 7045.1390, for the facility or ~~part 7045.1315, subpart 1, item B~~ Code of Federal Regulations, title 40, section 268.7(a)(3), as incorporated in part 7045.1390, for the generator, whichever is applicable.

[In item M, the MPCA replaces citations to a repealed rule with citations to equivalent federal regulations as incorporated by reference.]//

N. For an on-site land disposal facility, the information contained in the notice and the certification and demonstration, if applicable, required by a generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended~~ incorporated in part 7045.1390, ~~or part 7045.1315~~ except for the manifest number, whichever is applicable.

[In item N, the MPCA replaces citations to a repealed rule with citations to equivalent federal regulations as incorporated by reference.]//

O. For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

[In item O, the MPCA replaces citations to a repealed rule with citations to equivalent federal regulations as incorporated by reference.]//

P. For an on-site storage facility, the information contained in the notice, except the manifest number, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

[In item P, the MPCA replaces citations to a repealed rule with citations to equivalent federal regulations as incorporated by reference.]//

7045.0586 RETENTION AND DISPOSITION OF RECORDS.

[For text of subpart 1, see M.R.]

Subp. 2. **Retention of records.** The retention period for all records required under parts 7045.0552 to ~~7045.0642~~ 7045.0651 is three years and is extended automatically during the course of any unresolved enforcement action regarding the facility.

[In subpart 2, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subp 3, see M.R.]

7045.0588 REQUIRED REPORTS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Additional reports.** In addition to submitting the manifest discrepancy report described in part 7045.0582, subpart 3, and the annual report and the unmanifested waste reports described in subparts 2 and 3, the owner or operator shall also report to the commissioner and the Environmental Protection Agency Region V Administrator:

[For text of items A to C, see M.R.]

D. as otherwise required by the process vent ~~and,~~ equipment leak, and tank, surface impoundment, and container emission standards in ~~Code of Federal Regulations, title 40, part 265, subparts AA and BB, as amended~~ parts 7045.0645, 7045.0647, and 7045.0648.

[In item D, the MPCA is adopting requirements that apply to the reports required from facilities that are subject to the air emission standards being added in this rulemaking. This language is based on required RCRA Amendment 154-1.27: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.77(d). Further information about the air emission standards can be found at 59 FR 62896-62953, December 6, 1994.]//

7045.0594 CLOSURE.

[For text of subpart 1, see M.R.]

Subp. 2. **Closure performance standard.** The owner or operator shall close the facility in a manner minimizing the need for further maintenance. Closure procedures must result in controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, in accordance with all closure requirements including the requirements of parts 7045.0628, subpart 9; 7045.0630, subpart 6; 7045.0632, subpart 7; 7045.0634, subpart 6; 7045.0638, subpart 4; 7045.0640, subpart 5; and 7045.0642, subpart 5; and Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649.

[In subpart 2, the MPCA adds a reference to closure and post closure requirements that apply to containment buildings. The amendment is based on required RCRA Amendment 109.20: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.111(c). Further information can be found in 57 FR 37194-37282, August 18, 1992. Finally, the MPCA replaces an incorrect CFR citation to part 264 with the appropriate citation to related regulations in part 265.]//

Subp. 3. **Submittal of closure plan.** The closure plans must be submitted as follows:

A. A copy of the written closure plan and all revisions to the plan must be furnished to the commissioner upon request, including request by mail until final closure is completed and certified. For facilities without approved closure plans, the plan must also be provided to the commissioner as requested, during site inspections on the day of the inspection. The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include:

(1) A description of how each hazardous waste management unit will be closed, if applicable, and how the facility will be finally closed, in accordance with subpart 2. The description must identify the maximum extent of the operation which will be unclosed during the active life of the facility and how the facility will meet the requirements of ~~subpart 2, part~~ parts 7045.0590; 7045.0592; 7045.0594; 7045.0596 ~~, and the applicable closure requirements of parts~~; 7045.0626, subpart 8; 7045.0628, subpart 9; 7045.0630, subpart 6; 7045.0632, subpart 7; 7045.0634, subpart 6; 7045.0638, subpart 4; 7045.0640, subpart 5; 7045.0642, subpart 5; and 7045.0655, subpart 6, ~~will be met~~ and Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649;

[In subitem (1), the MPCA adopts cross references to specific closure requirements for various types of facilities. These amendments are based on required RCRA Amendment 109.20: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.112(d)(4). Further information can be found in 57 FR 37194-37282, August 18, 1992. The MPCA also provides a cross reference to federal requirements that are being incorporated in part 7045.0649.]//

[For text of subitems (2) to (6), see M.R.]

[For text of items B to F, see M.R.]

[For text of subp 4, see M.R.]

7045.0596 CLOSURE ACTIVITIES.

[For text of subps 1 and 2, see M.R.]

Subp. 2a. **Conditions for receiving nonhazardous waste.** The commissioner shall allow an owner or operator to receive only nonhazardous waste in a landfill, land treatment, or surface impoundment unit after the final receipt of hazardous waste at that unit if:

A. the owner or operator submits an amended Part B application, or a Part B application, if not previously required, and demonstrates that:

[For text of subitems (1) and (2), see M.R.]

(3) the nonhazardous waste will not be incompatible with any remaining wastes in the unit, or with the facility design and operating requirements of the unit or facility under parts 7045.0552 to ~~7045.0642~~ 7045.0651;

[In subitem (3), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subitems (4) and (5), see M.R.]

[For text of items B to D, see M.R.]

[For text of subps 3 and 4, see M.R.]

7045.0600 POSTCLOSURE.

Subpart 1. **Scope.** This part and parts 7045.0602 to 7045.0606 apply to the owners and operators of all hazardous waste disposal facilities, including surface impoundments and waste piles from which the owner or operator intends to remove the wastes at closure, to the extent that the owner or operator is required to provide postclosure care in part 7045.0630, subpart 6, or ~~in part~~ 7045.0632, subpart 7~~, and also~~; tank systems that are required under part 7045.0628, subpart 9, to meet the requirements for landfills~~,~~; and containment buildings that are required under Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649, to meet the requirement for landfills, except as provided otherwise in part 7045.0552.

[In subpart 1, the MPCA adds language to apply the post closure care requirements to the owner or operator of containment buildings. The amendment is based on required RCRA Amendment 109.19: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.110(b)(4). Further information can be found in 57 FR 37194-37282, August 18, 1992.]//

Subp. 2. **Submittal of postclosure plan.** The postclosure plan must be submitted as follows:

[For text of items A to C, see M.R.]

D. The commissioner shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments, to request modification, or to request a public information meeting on the postclosure plan or substantive amendments to the postclosure plan within 30 days of the date of the notice. In response to a request or at his or her own discretion, the commissioner shall hold a public information meeting whenever a meeting might clarify one or more issues concerning the postclosure plan. The commissioner shall approve, modify, or disapprove postclosure plans for facilities having interim status within 90 days of the receipt of the plan. If the commissioner does not approve the plan, he or she shall provide the owner or operator with a detailed written statement of reasons for the refusal, and the owner or operator shall submit a modified or new plan for approval within 30 days after receiving this

written statement. The commissioner shall approve or modify this plan in writing within 60 days. If the commissioner modifies the plan, this modified plan becomes the approved postclosure plan. A copy of the modified plan and a detailed statement of reasons for the modifications shall be mailed to the owner or operator. The commissioner shall ensure that the approved postclosure plan is consistent with ~~part~~ this part and with the postclosure care and use of property requirements in parts 7045.0602, 7045.0604, and 7045.0606.

[In item D, the MPCA revises language to add references to the requirements for providing notification to local land authorities (part 7045.0604) and notification in property deeds (part 7045.0606). Although the phrasing of this part of the State rules does not exactly correspond to the requirements of the final sentences in 40 CFR 265.118(f), the MPCA believes that it addresses the same aspects of regulation. These additions are based on required RCRA Amendment 109.21: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.118(f). Further information can be found in 57 FR 37194-37282, August 18, 1992.]//

[For text of subp 3, see M.R.]

7045.0608 FINANCIAL REQUIREMENTS.

[In this rulemaking the MPCA has made a number of amendments to the requirements for providing financial assurance, both for permitted facilities and for facilities governed by the interim status requirements. A discussion of the reasonableness of the MPCA's general decisions regarding the use of particular financial assurance mechanisms is provided in the discussion for the amendments to part 7045.0498 (financial assurance for permitted hazardous waste facilities) and is also applicable to the amendments being made to the following financial assurance rules for interim status hazardous waste facilities.]//

Subpart 1. **Scope.** The requirements of parts 7045.0610, 7045.0612, and 7045.0620 to 7045.0624 apply to owners and operators of hazardous waste facilities except as provided otherwise in this part or in part 7045.0552.

The requirements of parts 7045.0614 to 7045.0618 apply only to owners and operators of disposal facilities ~~and~~; tank systems that are required under part 7045.0628, subpart 9, to meet the requirements for landfills; and containment buildings that are required under Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649, to meet the requirements for landfills.

The state and the federal government are exempt from the requirements of parts 7045.0608 to 7045.0624.

[In subpart 1, the MPCA applies post closure care financial assurance requirements to the owners and operators of containment buildings that are required to close as landfills. Requirements for containment buildings are being added in this rulemaking. These requirements are based on required RCRA Amendment 109.22: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.140(b)(1-3). Further information can be found in 57 FR 37194-37282, August 18, 1992.]//

[For text of subp 2, see M.R.]

7045.0610 COST ESTIMATE FOR FACILITY CLOSURE.

Subpart 1. **Cost estimate requirements.** The owner or operator shall prepare a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the closure plan in part 7045.0594 and applicable closure requirements in parts 7045.0626, subpart 8; 7045.0630, subpart 6; 7045.0632, subpart 7; 7045.0634, subpart 6; 7045.0638, subpart 4; 7045.0640, subpart 5; and 7045.0642, subpart 5; and Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649. The closure cost estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. The closure cost shall be estimated as follows:

[In subpart 1, the MPCA adds a reference to the requirements being adopted in this rulemaking that apply to containment buildings. The reference in this part is based on required RCRA Amendment 109.23: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.142(a). Further information can be found in 57 FR 37194-37282, August 18, 1992.]//

[For text of items A to C, see M.R.]

[For text of subps 2 to 4, see M.R.]

7045.0612 FINANCIAL ASSURANCE FOR FACILITY CLOSURE.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Financial test and corporate guarantee for closure.** The financial test and corporate guarantee for closure is as follows:

[For text of items A to K, see M.R.]

L. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owner or operator in items A to J; and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[In item L, the MPCA clarifies that the owner or operator must send a certified copy of the corporate guarantee to the commissioner. The rule formerly implied that the original document had to be sent to the commissioner. This change is based on RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 265.143(e)(10). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

[For text of subitems (1) to (3), see M.R.]

[For text of subps 7 to 9, see M.R.]

7045.0616 FINANCIAL ASSURANCE FOR POSTCLOSURE CARE.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Financial test and corporate guarantee for postclosure care.** The following is the financial test and corporate guarantee for postclosure care:

[For text of items A to L, see M.R.]

M. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in items A to K, and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[In item M, the MPCA clarifies that the owner or operator must send a certified copy of the corporate guarantee to the commissioner. The rule formerly implied that the original document had to be sent to the commissioner. This change is based on RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 265.143(e)(10). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

[For text of subitems (1) to (3), see M.R.]

[For text of subps 7 to 9, see M.R.]

7045.0620 LIABILITY REQUIREMENTS.

[The MPCA has made a number of amendments to the requirements for liability coverage, both for permitted facilities and for facilities governed by the interim status requirements. A discussion of the reasonableness of the MPCA's general decisions regarding the use of particular financial assurance mechanisms is provided in the discussion for the amendments to part 7045.0518 (liability requirements for hazardous waste facilities) and is applicable to the amendments being made to the following rules on liability requirements for interim status hazardous waste facilities.]//

Subpart 1. **Coverage for sudden accidental occurrences.** An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of ~~these~~ such facilities, ~~shall~~ must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator ~~shall~~ must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1,000,000 per occurrence with an annual aggregate of at least $2,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated ~~in one of three ways,~~ as specified in items A~~, B, and C~~ to F:

A. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in subitems (1) and (2):

(1) Each insurance policy must be amended by attachment of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in part 7045.0524, subpart 9. The wording of the certificate of insurance must be identical to the

wording specified in part 7045.0524, subpart 10. The owner or operator ~~shall~~ must submit a signed duplicate original of the endorsement or the certificate of insurance to the commissioner. If requested by the commissioner, the owner or operator shall provide a signed duplicate original of the insurance policy.

(2) Each insurance policy must be issued by an insurer which is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

B. An owner or operator may meet the requirements of this part by passing a financial test or using the corporate guarantee for liability coverage as specified in subparts 5 and 6.

C. An owner or operator may meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 7.

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 8.

E. An owner or operator may demonstrate the required liability coverage through the use of ~~the~~ combinations of insurance, financial test, ~~insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance as these mechanisms are specified in this part~~ corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by ~~subpart 1~~ this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator must specify other assurance as "excess" coverage.

F. An owner or operator must notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

[In subpart 1, the MPCA amends the rule to clearly identify the expanded range of options being provided in this rulemaking for demonstrating liability coverage for sudden, accidental occurrences and to add new requirements for liability coverage based on the corresponding federal regulations in 40 CFR 265.147(a). The changes are based on RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 265.147(a). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844,

September 16, 1992. The MPCA has also made minor, clarifying changes that do not change the effect of this provision. The MPCA has also changed "shall" to "must," and "these" to "such."]//

Subp. 2. **Coverage for nonsudden accidental occurrences.** An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of ~~these~~ such facilities, ~~shall~~ must demonstrate financial responsibility for bodily ~~damage~~ injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator ~~shall~~ must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3,000,000 per occurrence with an annual aggregate of at least $6,000,000, exclusive of legal defense costs. An owner or operator who must meet the requirements of this part may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least $4,000,000 per occurrence and $8,000,000 annual aggregate. This liability coverage may be demonstrated ~~in one of three ways~~ as specified in items A~~, B, and C~~ to F:

[For text of item A, see M.R.]

B. An owner or operator may meet the requirements of this part by passing a financial test or using the corporate guarantee for liability coverage as specified in subparts 5 and 6.

C. An owner or operator may meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 7.

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 8.

E. An owner or operator may demonstrate the required liability coverage through use of ~~the~~ combinations of insurance, financial test, ~~insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance as these mechanisms are specified in this part~~ corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by ~~subpart 1~~ this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

~~D. The required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates specified in subitems (1), (2), (3), and (4). The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding July 16, 1984, will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues determines the date by which the coverage must be demonstrated. The following dates apply:~~

~~(1) for an owner or operator not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) with sales or revenues totaling $10,000,000 or more, six months after July 16, 1984;~~

~~(2) for an owner or operator not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) with sales or revenues greater than $5,000,000 but less than $10,000,000, 18 months after July 16, 1984;~~

~~(3) all other owners or operators not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) 30 months after July 16, 1984;~~

~~(4) for an owner or operator subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) on the date he or she is required to demonstrate coverage under Code of Federal Regulations, title 40, section 265.147 (1983).~~

~~E. By the date six months after July 16, 1984, an owner or operator who is within either of the categories in subitem (2) or (3) shall, unless he or she has demonstrated liability coverage for nonsudden accidental occurrences, send a letter to the commissioner, stating the date by which he or she plans to establish the coverage.~~

F. An owner or operator shall notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

[In subpart 2, the MPCA amends the rule to clearly identify the expanded range of options being provided in this rulemaking for demonstrating liability coverage for non-sudden, accidental occurrences and to add new requirements for liability coverage based on the corresponding federal regulations in 40 CFR 147(b). The changes are based on adopts optional language from RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 265.147(b). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992. The MPCA has also made minor, clarifying changes to change "shall" to "must" that do not change the effect of this provision.]//

[For text of subps 3 and 4, see M.R.]

Subp. 5. **Financial test for liability coverage.** The financial test for liability coverage is as follows:

[For text of items A to G, see M.R.]

H. If the owner or operator no longer meets the requirements of item A, he or she ~~shall~~ must obtain insurance, a letter of credit, a trust fund, or a corporate guarantee for the entire amount of required liability coverage as specified in this part. Evidence of

~~insurance~~ liability coverage must be submitted to the commissioner within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

[In item H, the MPCA makes minor changes to change "shall" to "must" and to address the types of insurance that will be allowed for liability coverage. The amendments addressing the changes to the liability insurance options are based on RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 265.147(f)(6). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

[For text of item I, see M.R.]

Subp. 6. **Corporate guarantee for liability coverage.** The corporate guarantee for liability coverage is as follows:

A. Subject to item B, an owner or operator may meet the requirements of this part by obtaining a written corporate guarantee. The guarantor must be the parent corporation of the owner or operator. The ~~guarantee~~ guarantor must meet the requirements for owners or operators in subpart 5. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8a. The guarantee must be signed by two corporate officers of the parent corporation. A corporate resolution authorizing the parent corporation to provide the corporate guarantee for the subsidiary must be attached to the guarantee. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in subpart 5, item E. The terms of the corporate guarantee must provide that:

[In subpart 6, the MPCA makes a minor correction to use the correct term 'guarantor,' rather than 'guarantee.' This is the same term used in parallel provisions for liability requirements for facility standards in part 7045.0518, subpart 7.]//

[For text of subitems (1) and (2), see M.R.]

[For text of item B, see M.R.]

Subp. 7. **Letter of credit for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by obtaining an irrevocable standby letter of credit that conforms to the requirements of this subpart and submitting a copy of the letter of credit to the commissioner.

B. The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.

C. The wording of the letter of credit must be identical to the wording in part 7045.0524, subpart 11.

D. An owner or operator who uses a letter of credit to satisfy the requirements of this part may also establish a standby trust fund. Under the terms of a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

E. The wording of the standby trust fund must be identical to the wording in part 7045.0524, subpart 13.

[In subpart 7, the MPCA adds a new subpart that provides the option of using a letter of credit for liability coverage. This option is based on federal language for use by interim status facilities. The MPCA believes this is a reasonable financial assurance mechanism. The adopted language is based on optional RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 265.147(h). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

Subp. 8. **Trust fund for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by establishing a trust fund that conforms to the requirements of this subpart and submitting an originally signed duplicate of the trust agreement to the commissioner.

B. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

C. The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this part. If at any time after the trust fund is created, the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided or obtain other financial assurance as specified in this part to cover the difference. For purposes of this subpart, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden or nonsudden occurrences required to be provided by the owner or operator by this part, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

D. The wording of the trust fund must be identical to the wording in part 7045.0524, subpart 13.

[In subpart 8, the MPCA adds a new subpart that provides the option of using a trust fund for liability coverage. This option is based on federal language for use by interim status facilities. The MPCA believes this is a reasonable financial assurance mechanism. The adopted language is based on optional RCRA Amendment 113: "Consolidated Liability Requirements" = 40 CFR 265.147(j). Further information can be found in 53 FR 33938-33960, September 1, 1988; as amended by 56 FR 30200, July 1, 1991; and 57 FR 42832-42844, September 16, 1992.]//

7045.0626 USE AND MANAGEMENT OF CONTAINERS.

Subpart 1. **Scope.** This part applies to owners and operators of hazardous waste facilities that store containers of hazardous waste, except as part 7045.0552 provides otherwise. Under ~~parts~~ part 7045.0127, subparts 2 to 4, and ~~7045.0135, subpart 4, item C~~ Code of Federal Regulations, title 40, section 261.33(c), as incorporated in part 7045.0135, if a hazardous waste is emptied from a container, the residue remaining in the container is not considered a hazardous waste if the container is empty, as defined in part

7045.0127, subparts 2 to 4. In that event, management of the container is exempt from the requirements of this part.

[In subpart 1, the MPCA replaces citations to repealed rules with citations to equivalent federal rules as incorporated by reference.]//

[For text of subps 2 to 6, see M.R.]

Subp. 7. **Special requirements for ignitable or reactive waste.** Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line, when physically possible based on the dimensions of the property. When it is not physically possible to place containers at least 50 feet from the property line, based on the dimensions of the property, the ignitable or reactive waste must be placed at least as far as the specified minimum distance from property line found in ~~Table Number 79.503 F of~~ the Minnesota ~~Uniform~~ State Fire Code ~~as incorporated by reference in part 7510.3510~~, chapter 7510. Nothing in this subpart shall relieve the facility owner or operator from the obligation to comply with any local, state, or federal law governing storage of these wastes.

[In subpart 7, the MPCA corrects a reference and cite to a State Fire Code that has been amended by another rulemaking since originally adopted.]//

[For text of subp 8, see M.R.]

Subp. 9. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a container in accordance with the applicable requirements of parts 7045.0645, 7045.0647, and 7045.0648.

[In subpart 9, the MPCA adopts language referring to the air emission standards that are being applied to containers at interim status facilities as a result of this rulemaking. The reference is from required RCRA Amendment 154, 154-1.28: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.178. Further information regarding the air emission standards can be found in 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

7045.0628 TANK SYSTEMS.

Subpart 1. **Scope.** This part applies to owners and operators of facilities that use tank systems, including tank systems, sumps, and other such collection devices or systems used in conjunction with drip pads, as defined in part 7045.0020 and regulated under part 7045.0644, to treat or store hazardous waste, except as items A and B and part 7045.0552 provide otherwise.

A. Tank systems that are used to store or treat hazardous waste containing no free liquids and that are located inside a building with an impermeable floor are exempt from the requirements of subpart 4. To demonstrate the absence or presence of free liquids in the stored or treated waste, ~~EPA~~ the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," ~~(~~EPA publication ~~No.~~ SW-846 ~~) must be used~~, incorporated by reference in part 7045.0065, item D.

[In item A, the MPCA corrects the name of the EPA test method for verifying the presence of liquids in order to correspond to the federal counterpart in 40 CFR 265.190(a). The amendment is based on required RCRA Amendment 126.15:

"Testing and Monitoring Activities." Further information can be found in 58 FR 46040-46051, August 31, 1993; as amended at 59 FR 47980-47982, September 19, 1994. The MPCA also provides language to clarify where to find the prescribed test method, which has changed as a result of these amendments.]//

[For text of item B, see M.R.]

[For text of subps 2 to 9, see M.R.]

Subp. 10. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a tank unless:

[For text of items A and B, see M.R.]

C. the tank is used solely for emergencies.

The owner or operator of a facility which treats or stores ignitable or reactive waste in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in the buffer zone requirements for tanks, contained in ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510.

[In item C, the MPCA corrects a reference to a previously amended State Fire Code.]//

[For text of subps 11 and 12, see M.R.]

Subp. 13. **Air emission standards.** The owner or operator of a facility must manage all hazardous waste placed in a tank in accordance with parts 7045.0645, 7045.0647, and 7045.0648.

[In subpart 13, the MPCA adopts language referring to the air emission standards that are being applied to tanks at interim status facilities as a result of this rulemaking. The reference is from required RCRA Amendment 154, 154-1.29: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.202. Further information can be found in 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

7045.0629 REQUIREMENTS FOR SMALL QUANTITY AND VERY SMALL QUANTITY GENERATORS THAT ACCUMULATE HAZARDOUS WASTE IN TANKS.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Ignitable and reactive wastes.** Generators regulated under this part must comply with the following special requirements for ignitable or reactive waste:

[For text of item A, see M.R.]

B. The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks contained in ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510.

[In item B, the MPCA corrects a reference to a previously amended State Fire Code.]//

[For text of subp 6, see M.R.]

7045.0630 SURFACE IMPOUNDMENTS.

[For text of subps 1 and 1a, see M.R.]

Subp. 2. **General operating requirements.**

A. A surface impoundment must maintain enough freeboard to prevent any overtopping of the dike by overfilling, wave action or a storm. There must be at least 60 centimeters (two feet) of freeboard. Any point source discharge from a surface impoundment to waters of the United States is subject to the requirements of the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1342, as amended. Spills may be subject to the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1312, as amended.

B. Surface impoundments that are newly subject to RCRA section 3005(j)(1) due to the promulgation of additional listings or characteristics for the identification of hazardous waste must be in compliance with subpart 1a not later than 48 months after the promulgation of the additional listing or characteristic. This compliance period shall not be cut short as the result of the promulgation of land disposal prohibitions under Code of Federal Regulations, title 40, part 268, as amended, or the granting of an extension to the effective date of a prohibition pursuant to Code of Federal Regulations, title 40, section 268.5, as incorporated in part 7045.1390, within this 48-month period.

[In item A, the MPCA adopts language to address wastes that are newly regulated under the land disposal restrictions. The adopted language is based on required RCRA Amendment 109.24: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.221(h). Further information about the land disposal restrictions can be found in 57 FR 37194-37282, August 18, 1992.]//

[For text of subps 2a to 5, see M.R.]

Subp. 6. **Closure and postclosure care.** The requirements of closure and postclosure care are as follows:

[For text of item A, see M.R.]

B. If the owner or operator removes or decontaminates all the impoundment materials described in item A, the impoundment is not further subject to the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651. At closure and throughout the operating period, unless the owner or operator can demonstrate that any waste removed from the surface impoundment is not a hazardous waste, he or she becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of parts 7045.0205 to 7045.0397 and 7045.0552 to ~~7045.0642~~ 7045.0651.

[In item B, the MPCA corrects citations to ranges of rules that changed as parts were added.]//

[For text of items C and D, see M.R.]

Subp. 7. **Special requirements for ignitable or reactive wastes.** Ignitable or reactive waste must not be placed in a surface impoundment unless the waste and the impoundment satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[In subpart 7, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of items A and B, see M.R.]

Subp. 8. **Special requirements for incompatible wastes.** Incompatible waste, or incompatible wastes and materials, must not be placed in the same surface impoundment

unless part 7045.0562, subpart 2, is followed. For examples of potentially incompatible wastes, or incompatible waste and materials, see part 7045.0643, subpart 1, item D.

[In subpart 8, the MPCA initiates providing a citation to a rule that incorporates an appendix which lists examples of potentially incompatible wastes and materials. This citation corresponds to parenthetical information provided in the federal counterpart to this rule found at 40 CFR 265.230. The reference to part 7045.0643, subpart 1, item D is to the rule being added in this rulemaking that incorporates appendices from the federal regulations.]//

Subp. 9. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a surface impoundment in accordance with parts 7045.0645 and 7045.0648.

[In subpart 9, the MPCA requires surface impoundments to comply with the requirements for air emissions being adopted in this rulemaking. The language is based on required RCRA Amendment 154, 154-1.30: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.231. Further information can be found in 59 FR 62896-62953, December 6, 1994; as amended by 61 FR 59932-59997, November 25, 1996.]//

7045.0632 WASTE PILES.

[For text of subps 1 to 4b, see M.R.]

Subp. 5. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a pile unless the waste and pile satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390:

[In subpart 5, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of items A and B, see M.R.]

[For text of subps 6 to 9, see M.R.]

7045.0634 LAND TREATMENT.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Special requirements for ignitable or reactive waste.** Ignitable or reactive wastes must not be land treated, unless the waste and treatment zone meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and the waste is immediately incorporated into the soil so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under parts 7045.0131, subpart 2 or 5; and 7045.0562, subpart 2 is complied with.

[In subpart 7, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of subp 8, see M.R.]

7045.0638 LANDFILLS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Closure and postclosure.** Closure and postclosure requirements are as follows:

[For text of item A, see M.R.]

B. After final closure, the owner or operator shall comply with all postclosure requirements contained in parts 7045.0600 to 7045.0606 including maintenance and monitoring throughout the postclosure care period. The owner or operator must:

[For text of subitem (1), see M.R.]

(2) maintain and monitor the leak detection system in accordance with part 7045.0538, subparts 3, item C, subitems (3), unit (d), and (4); and 2c, item B, and comply with all other applicable leak detection system requirements of ~~this part~~ parts 7045.0552 to 7045.0651 governing interim status facility standards;

[In subitem (2), the MPCA adopts language referring to the leak detection system requirements that can be found in the entire range of interim status rules. The existing language referred only to the leak detection requirements that apply to landfills. However, in an EPA program authorization review, the EPA identified the fact that the corresponding federal regulations in 40 CFR 264.310(b)(2) reference the entire part of the federal regulations that regulate interim status. The MPCA is making the changes in this subpart to correct this error. The language of this amendment is based on required RCRA Amendment 100: "Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units" = 40 CFR 264.310(b)(2). Further information can be found in 57 FR 3462-3497, January 29, 1992.]//

[For text of subitems (3) to (5), see M.R.]

Subp. 5. **Special requirements for ignitable or reactive waste.** Special requirements for ignitable or reactive waste are as follows:

A. Except as provided in item B, and subparts 7 and 9, ignitable or reactive waste must not be placed in a landfill unless the waste and landfill meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under part 7045.0131, subpart 2 or 5, and compliance with part 7045.0562, subpart 2, is maintained.

[In item A, the MPCA provides the replacement citation for a repealed range of rules.]//

B. Except for prohibited wastes which remain subject to treatment standards in ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part 7045.1390, ignitable wastes in containers may be landfilled without meeting the requirements of item A if the wastes are disposed so that they are protected from any material or conditions which may cause them to ignite. Ignitable wastes must be disposed in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and must not be disposed in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the wastes.

[In item B, the MPCA replaces citations to repealed rules with citations to equivalent federal rules as incorporated by reference.]//

[For text of subp 6, see M.R.]

Subp. 7. **Special requirements for liquid waste.** Bulk or noncontainerized liquid waste or waste containing free liquids, whether or not ~~absorbents~~ sorbents have been added, must not be placed in a landfill.

A. A container holding liquid waste or waste containing free liquids must not be placed in a landfill, unless:

(1) all free standing liquid has been removed by decanting, or other methods; has been mixed with ~~absorbent~~ sorbent or solidified so that free standing liquid is no longer observed; or has been otherwise eliminated;

[For text of subitems (2) to (4), see M.R.]

B. To demonstrate the ~~presence or~~ absence or presence of free liquids in either a containerized or a bulk waste, the following test must be ~~demonstrated using the Paint Filter Liquids Test,~~ used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," EPA publication ~~number~~ SW-846, incorporated in part 7045.0065, item D.

[In item B, the MPCA rephrases existing language and makes corrections to information regarding the name of the EPA test methods for determining the presence of free liquids. The amendment is based on required RCRA Amendment 126.15: "Testing and Monitoring Activities" = 40 CFR 265.314(d). Further information can be found in 58 FR 46040-46051, August 31, 1993; as amended at 59 FR 47980-47982, September 19, 1994.]//

C. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are materials listed or described in subitem (1) or materials that pass one of the tests in subitem (2).

(1) Nonbiodegradable sorbents:

(a) inorganic minerals, other inorganic materials, and elemental carbon (for example, aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, and zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), and diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; and activated charcoal/activated carbon);

(b) high molecular weight synthetic polymers (for example, polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(c) mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents must use the following methods. The methods are incorporated by reference under part 7045.0538, subpart 10, item D, subitem (2):

(a) the sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a), Standard Practice for Determining Resistance of Synthetic Polymer Material to Fungi;

(b) the sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b), Standard Practice for Determining Resistance of Plastics to Bacteria; or

(c) the sorbent material is determined to be nonbiodegradable under OECD test 301B: [CO_2 Evolution (Modified Sturm Test)].

[In subpart 7, the MPCA makes a number of changes to the regulations governing landfills. At several points, the MPCA changes the word "absorbent" to the broader term "sorbent," based on federal language. The MPCA also adopts specific requirements regarding the use of sorbents to treat free liquids. These changes are reasonable for the reasons discussed in part 7045.0538, subpart 10 and are based on language from required RCRA Amendment 118.3: "Liquids in Landfills II" = 40 CFR 265.314. Further information can be found in 57 FR 54452-54461, November 18, 1992.]//

[For text of subp 8, see M.R.]

Subp. 9. **Special requirements for disposal of laboratory packs.** Small containers of hazardous waste in overpacked drums, or laboratory packs, may be placed in a landfill if the requirements of items A to F are met:

A. Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the waste held therein. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type ~~specified~~ authorized in the United States Department of Transportation hazardous materials regulations under Code of Federal Regulations, title 49, parts 173, 178, ~~and~~ 179, and 180, as amended, if those regulations specify a particular inside container for the waste.

[In item A, the MPCA is amending the State rules on the advice of Minnesota's Department of Transportation. The amendments revise language to conform with amended U.S. Department of Transportation regulations. The language of this item is slightly different than the federal counterpart found at 40 CFR 265.316, but the MPCA believes it is the more accurate and current reference to the applicable United States Department of Transportation requirements.]//

B. The inside containers must be overpacked in ~~an open~~ a removable head metal shipping container as specified in United States Department of Transportation regulations under Code of Federal Regulations, title 49, section 173.12 and parts 178 ~~and~~, 179, and 180, as amended~~, of no more than 416 liter (110 gallon) capacity, and~~. The inside containers must be surrounded by a sufficient quantity of ~~absorbent~~ chemically compatible sorbent material, determined to be nonbiodegradable in accordance with subpart 7, item C, to completely ~~absorb~~ sorb all of the liquid contents of the inside containers. The gross weight of the complete package must not exceed 205 kilograms (452 pounds). The metal outer container must be full after ~~packing~~ it has been packed with inside containers and ~~absorbent~~ sorbent material.

[In item B, the MPCA adopts language addressing changes to the corresponding federal EPA regulation regarding overpacking of containers and also to address changes made to the federal Department of Transportation regulations. The changes are based on required RCRA Amendment 118.4: "Liquids in Landfills II" = 40 CFR 265.316(b). Further information can be found in 57 FR 54452-54461, November 18,

1992. The MPCA is revising the federal language slightly to reflect revisions in the cited U.S. Department of Transportation regulations. The MPCA believes that these differences, taken on the advice of the Minnesota Department of Transportation, are a more accurate reference to the rules that actually apply.]//

C. The ~~absorbent~~ sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with part 7045.0562, subpart 2.

[In item C, the MPCA changes "absorbent" to "sorbent" for the same reasons discussed in subpart 7 of this part.]//

[For text of items D and E, see M.R.]

F. The disposal complies with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390. Persons who incinerate lab packs ~~according to part 7045.1360~~ in accordance with Code of Federal Regulations, title 40, section 268.42(c)(1), as incorporated in part 7045.1390, may use fiber drums in place of metal outer containers. The fiber drums must meet the United States Department of Transportation specifications in Code of Federal Regulation, title 49, section 173.12, as amended, and be overpacked ~~according to~~ in accordance with item B.

[In item F, the MPCA replaces a reference to a repealed range of rules with the correct citation being adopted or incorporated by reference in this rulemaking. The MPCA also is amending the rules at this time to include the phrase "as amended" in regard to future changes to Department of Transportation specifications. This type of prospective adoption is reasonable for the reasons discussed in part IV of this Statement of Need and Reasonableness. Finally, the MPCA revises language at the end of the item for grammatical purposes.]//

7045.0643 APPENDICES TO INTERIM STATUS FACILITY STANDARDS.

Subpart 1. **Incorporation of federal regulations.** The following appendices found in Code of Federal Regulations, title 40, part 265, as amended, are incorporated by reference:

[In subpart 1, items A to E, the MPCA incorporates by reference the appendices to Interim Facility Standards that are found in 40 CFR 265. In these appendices, the MPCA is adopting standards or tests that are referenced either in current rules or in rules that are being adopted or revised for interim status facilities in this rulemaking. By adopting these appendices by reference as amended, the MPCA will ensure that the most current standards are incorporated into the State rules. The MPCA's discussion of the reasonableness of incorporating federal regulations "as amended" is provided in Section IV of this Statement of Need and Reasonableness. Note: the EPA repealed its former Appendix II from the federal regulations which is why it is not included the these incorporated appendices.]//

A. Appendix I, Recordkeeping Instructions;

[In item A, the MPCA incorporates Appendix I, regarding recordkeeping. This Appendix was amended as described in required RCRA Amendment 131.2: "Recordkeeping Instructions; Technical Amendment" = 40 CFR 265 Appendix I, Tables 1 and 2. Further information can be found in 59 FR 13891-13893, March 24, 1994.]//

B. Appendix III, EPA Interim Primary Drinking Water Standards;

[In item B, the MPCA incorporates Appendix III, a listing of drinking water standards. The MPCA believes it is reasonable to incorporate these standards, which are referred to in part 7045.0590, subpart 6, by reference in order to accommodate future revisions.]//

C. Appendix IV, Tests for Significance;

[In item C, the MPCA incorporates Appendix IV, which establishes tests to determine significance. The MPCA believes it is reasonable to incorporate this test, which is referred to in part 7045.0592, subpart 2, by reference in order to accommodate future revisions.]//

D. Appendix V, Examples of Potentially Incompatible Waste; and

[In item D, the MPCA incorporates Appendix V, which provides examples of incompatible wastes. The MPCA believes it is reasonable to incorporate this list of examples, which are referred to in part 7045.0630, subpart 8, by reference in order to accommodate future revisions.]//

E. Appendix VI, Compounds with Henry's Law Constant Less Than 0.1 Y/X.

[In item E, the MPCA adopts language regarding the use of Henry's Law Constant. This Appendix was amended as described in required RCRA Amendment 163.38: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment" = 40 CFR 265 Appendix VI. Further information can be found in 62 FR 64636-64671, December 8, 1997. Appendix VI is referenced in 265.1081 which the MPCA is incorporating in this rulemaking as part of the air emission standards.]//

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

[In subpart 2, the MPCA provides a reference to part 7045.0090 which applies whenever regulations are incorporated by reference. Part 7045.0090, subpart 1f, specifically applies when federal interim status facility standards are incorporated by reference.]//

7045.0645 AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of interim status facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers must comply with Code of Federal Regulations, title 40, part 265, subpart CC, air emission standards for tanks, surface impoundments, and containers, sections 265.1080 to 265.1091, as amended, which are incorporated by reference subject to the exceptions in subpart 2.

[In part 7045.0645, the MPCA incorporates federal requirements addressing air emission standards that apply to interim status facilities that treat, store or dispose of hazardous waste in tanks, surface impoundments or containers. The State rules previously only provided air emission standards for process vents and equipment leaks. The new standards, referenced in subpart 1 are based on federal regulations found in 40 CFR 265, subpart CC (40 CFR 265.1080 through 265.1090), "Air Emission Standards for Tanks, Surface Impoundments, and Containers." By incorporating these standards by reference, the MPCA also effectively incorporates language from these related RCRA Amendments:

- **RCRA Amendments 154, 154-1.26, 154-2, 154-3, 154-4, 154-5, 154-6: "Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers" = 40 CFR 265.1080-1091. Further information can be found in 59 FR 62896-62953, December 6, 1994; as amended by 60 FR 26828-26829, May 19, 1995; 60 FR 50426-50430, September 29, 1995; 60 FR 56952-56954, November 13, 1995; 61 FR 4903-4916, February 9, 1996; 61 FR 28508-28511, June 5, 1996; and 61 FR 59932-59997, November 25, 1996.]**
- **RCRA Amendment 177: "Organic Air Emission Standards: Clarification and Technical Amendments" = 40 CFR 265.1080(b)(5); 265.1084(a)(1)(i-ii); 265.1084(a)(3)(ii)(B,D); 265.1084(a)(3)(iii); 265.1084(b)(1)(i-ii); 265.1084(b)(3)(ii)(B,D); 265.1084(b)(3)(iii); 265.1085(h)(3)(i-ii); and 265.1087(e)(6). Further information can be found in 64 FR 3382, January 21, 1999.**
- **RCRA Amendment 163.28-37: "Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment" = 40 CFR 265.1080; 265.1081; 265.1082; 265.1083; 265.1084; 265.1085; 265.1086; 265.1087; 265.1088; and 265.1090. Further information can be found in 62 FR 64636-64671, December 8, 1997.]//**

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.**

A. The agency does not incorporate the following Code of Federal Regulations, title 40, part 265, subpart CC, provisions, as amended:

(1) Code of Federal Regulations, title 40, section 265.1080(d) to (g), governing specific exclusions; and

(2) Code of Federal Regulations, title 40, section 265.1083(c)(4)(ii), governing authority that EPA cannot delegate to states.

[In item A, the MPCA clarifies that it does not incorporate parts of the federal regulations governing specific exclusions and authority that does not apply in Minnesota. The exceptions to the adoption by reference are: (1) the MPCA does not adopt specific exclusions relating to peroxide manufacturers (described in 265.1080 (d)), and sites located in other states (described in 265.1080 (e) to (g)); and (2) the MPCA does not have the authority to grant variances to specific land disposal treatment standards (described in 265.1083 (c)(4)(ii)). See the discussion of the similar exclusion in part 7045.1390, subpart 5, item A of this document.]//

B. Part 7045.0090, adoption and incorporation by reference, also applies.

[In item B, the MPCA refers readers to the general State rule part governing adoption and incorporation by reference.]//

7045.0649 CONTAINMENT BUILDINGS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of interim status facilities that store or treat hazardous waste in containment buildings must comply with Code of Federal Regulations, title 40, part 265, subpart DD, Containment Buildings, sections 265.1100 to 265.1110, as amended, which are incorporated by reference subject to the exceptions in subpart 2.

[In part 7045.0649, the MPCA incorporates the requirements of 40 CFR 265, subpart DD, "Containment Buildings" by reference, as amended. The MPCA believes that it is efficient and reasonable to adopt this section of the federal regulations by reference as amended. In the incorporated federal regulations, sections 265.1103-1110 are

"reserved." Since the MPCA incorporates these sections of RCRA as amended, if the EPA incorporates regulations into these reserved sections, they would be automatically incorporated into the State rules unless the MPCA amends its rules to provide exceptions to particular provisions. By adopting this rule, the MPCA also adopts amendments based on required RCRA Amendment 109.25: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 265.1100-1110. Further information can be found in 57 FR 37194-37282, August 18, 1992.]//

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

[In subpart 2, the MPCA provides exceptions to its incorporation by reference in subpart 1 by referring readers to the general State rule part governing adoption and incorporation by reference.]//

7045.0652 FACILITIES GOVERNED BY FACILITY STANDARDS.

Subpart 1. **General requirements.** Parts 7045.0652 and 7045.0655 apply in lieu of parts 7045.0450 to ~~7045.0642~~ 7045.0651 to the owner or operator of the following types of units or facilities:

[In subpart 1, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of items A to D, see M.R.]

[For text of subp 2, see M.R.]

7045.0655 GENERAL FACILITY STANDARDS.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Closure.** At closure, the owner or operator of an elementary neutralization unit, pretreatment unit, or wastewater treatment unit shall remove all hazardous waste and hazardous waste residues from the unit.

At closure, the owner or operator of a combustion waste facility shall analyze the waste present in the facility ~~according to~~ in accordance with parts 7045.0102 to ~~7045.0143~~ 7045.0155 and shall submit the waste analysis results and proposed closure methods to the commissioner. Based on the waste analysis and proposed closure methods, the agency shall determine which closure standards from parts 7045.0450 to 7045.0551, if any, apply to the facility.

[In subpart 6, the MPCA makes a grammatical change that does not alter the meaning of the rules. The MPCA also corrects citations to ranges of rules that changed as parts were added.]//

[For text of subp 7, see M.R.]

7045.0665 ~~USE~~ HAZARDOUS WASTES USED IN A MANNER CONSTITUTING DISPOSAL.

[In part 7045.0665, the MPCA revises the title to clarify the subject of this part.]//

Subpart 1. **Scope.** ~~Items A and B apply~~ This part applies to hazardous wastes that are used in a manner constituting disposal.

[In subpart 1, the MPCA revises language to clarify to what this entire part applies.]//

[For text of item A, see M.R.]

B. Hazardous wastes are not used in a manner constituting disposal if:

[For text of subitems (1) and (2), see M.R.]

(3) the products meet the applicable treatment standards in ~~parts 7045.1350 to 7045.1360 or applicable prohibition levels in part 7045.1330~~ Code of Federal Regulations, title 40, sections 268.40 to 268.49, as incorporated in part 7045.1390, or, if no treatment standards have been established, meet the applicable prohibition levels in Code of Federal Regulations, title 40, section 268.32, as incorporated in part 7045.1390, or RCRA section 3004(d) where no treatment standards have been established, for each ~~recyclable material~~ hazardous waste that they contain.

[In subitem (3), the MPCA is deleting citations to repealed State rules and replacing them with citations to equivalent federal rules that are being incorporated by reference in this rulemaking. The references to the deleted and replaced citations refer to the land disposal restrictions that are discussed in more detail in this Statement at part 7045.1390. This language in subpart 1, item B, now corresponds to 40 CFR 266.20(b) with the following exception. In the last sentence the MPCA has changed the term "recyclable material," which is used in the federal counterpart, to "hazardous waste." The MPCA believes that the treatment standards referred to only apply to hazardous wastes and would not necessarily apply to recyclable materials that may or may not be hazardous wastes. The term "hazardous waste" is more accurate and appropriate to this application.]//

~~Commercial fertilizers that are produced for the general public's use that contain recyclable materials also are not presently subject to regulation provided they meet the same treatment standards or prohibition levels for each recyclable material that they contain. However, zinc-containing fertilizers using hazardous waste K061 that are produced for the general public's use are not presently subject to regulation.~~

[The MPCA is deleting the last paragraph of item B addressing the regulation of fertilizers and is providing new requirements addressing fertilizers in item D, subitems (1) and (2) below.]//

C. Antiskid/deicing uses of slags, which are generated from high temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, in a manner constituting disposal are not covered by the exemption in item B and remain subject to regulation.

[In item C, the MPCA adopts language from required RCRA Amendment 136.2: "Removal of the Conditional Exemption for Certain Slag Residues" = 40 CFR 266.20(c); Further information about the Amendment can be found at 59 FR 43496-43500, August 24, 1994.]//

D. Fertilizers that contain recyclable materials are not subject to regulation provided that:

(1) they are zinc fertilizers that meet the requirements in Code of Federal Regulations, title 40, section 261.4(a)(21), as amended; or

(2) they meet the applicable treatment standards in Code of Federal Regulations, title 40, sections 268.40 to 268.49, as incorporated in part 7045.1390, for each hazardous waste that they contain.

[Item D, addressing the use of fertilizers, is added to incorporate a paragraph that was formerly at the end of item B, subitem (3), along with certain modifications to

make it consistent with the federal counterpart found at 40 CFR 266.20(d). The change is based on RCRA Amendment 200: "Zinc Fertilizers Made from Recycled Hazardous Secondary Materials" = 40 CFR 266.20(d). Further information can be found at 67 FR 48393-48415, July 24, 2002.]//

[For text of subps 1a to 3, see M.R.]

Subp. 4. **Standards applicable to facilities managing wastes that are to be used in a manner that constitutes disposal.** Facilities managing wastes in a manner that constitutes disposal are subject to the following requirements:

A. owners or operators of facilities that store recyclable wastes that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the wastes are subject to all applicable provisions of parts ~~7023.9000 to 7023.9050,~~ 7045.0450 to ~~7045.0534, 7045.0544~~ 7045.0551, and 7045.0552 to ~~7045.0632~~ 7045.0651, and chapter 7001; and

[In item A, the MPCA deletes a citation to chapter 7023 that the MPCA repealed in a prior rulemaking. The MPCA also corrects citations to ranges of rules that changed as parts were added.]//

B. owners or operators of facilities that use recyclable wastes that are to be used in a manner that constitutes disposal are subject to all applicable provisions of parts ~~7023.9000 to 7023.9050,~~ 7045.0450 to ~~7045.0538, 7045.0544~~ 7045.0551, 7045.0552 to ~~7045.0638~~ 7045.0651, and 7045.1390 and chapter 7001.

[In item B, the MPCA makes several changes. First, the MPCA deletes a citation to chapter 7023 that the MPCA repealed in a prior rulemaking. Second, the MPCA corrects a citation to a range of rules that changed as parts were added in this rulemaking. Finally, the MPCA adopts a reference to the land disposal restrictions that would also apply to facilities managing wastes to be used in a manner that constitutes disposal using the cite revised in this rulemaking.]//

7045.0686 SPECIAL REQUIREMENTS FOR MANAGEMENT OF SPENT OR WASTE HOUSEHOLD BATTERIES.

Subpart 1. **Scope.** The requirements of this part apply to operators who collect, store, transport, or reclaim spent or waste household batteries as a part of a household battery management program.

[For text of item A, see M.R.]

B. Operators who collect, transport, or store spent or waste household batteries which are sent for recycling but who do not reclaim them are subject to regulation under subparts 2 and 3, but are not otherwise subject to regulation under parts ~~7023.9000 to 7023.9050,~~ 7045.0205 to ~~7045.1380~~ 7045.1390, and chapter 7001 for such collection, transportation, and storage.

[In item B, the MPCA deletes a citation to chapter 7023 that the MPCA repealed in a prior rulemaking. The MPCA also corrects a citation to a range of rules that changed as parts were added.]//

[For text of items C and D, see M.R.]

[For text of subps 2 to 4, see M.R.]

7045.0692 HAZARDOUS WASTE BURNED FOR ENERGY RECOVERY.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Standards applicable to marketers of hazardous waste fuel.** Marketers are subject to the requirements in items A to F.

[For text of items A and B, see M.R.]

C. If a marketer is a generator, or becomes a generator by initiating a shipment of hazardous waste fuel, the marketer must comply with parts 7045.0205 to 7045.0320. If the marketer operates a facility, the marketer must comply with parts 7045.0450 to ~~7045.0534~~ 7045.0551. If the marketer is operating a facility under interim status, the marketer must comply with parts 7045.0552 to ~~7045.0632~~ 7045.0651. If the marketer stores hazardous waste, the marketer must comply with the agency's permitting procedures in chapter 7001 ~~and parts 7023.9000 to 7023.9050~~ for storage of hazardous waste.

[In item C, the MPCA corrects two citations to ranges of rules that changed as parts were added. The MPCA also deletes a citation to chapter 7023 that the MPCA repealed in a prior rulemaking.]//

[For text of items D and E, see M.R.]

F. In addition to the applicable record keeping requirements of parts 7045.0205 to 7045.0320, 7045.0450 to ~~7045.0534~~ 7045.0551, and 7045.0552 to ~~7045.0632~~ 7045.0651, a marketer must keep a copy of each certification notice received or sent for three years from the date the marketer last engaged in a hazardous waste fuel marketing transaction with the person who sent or received the certification notice.

[In item F, the MPCA corrects citations to ranges of rules that changed as parts were added.]//

Subp. 6. **Standards applicable to burners of hazardous waste fuel.** Owners and operators of industrial furnaces and boilers identified in subpart 2, item B, that burn hazardous fuel are subject to the requirements in items A to F.

[For text of items A to D, see M.R.]

E. Generators who accumulate waste for longer than the time periods in item D, and burners who receive waste from off-site and store it, must comply with the following requirements:

(1) the agency's permitting procedures in chapter 7001 ~~and parts 7023.9000 to 7023.9050~~ for hazardous waste storage facilities, parts 7045.0205 to 7045.0536, 7045.0544, 7045.0552 to 7045.0632, 7045.1000 to 7045.1030, and ~~7045.1300 to 7045.1380~~ 7045.1390; and

[In subitem (1), the MPCA deletes a citation to chapter 7023 that the MPCA repealed in a prior rulemaking. The MPCA also provides the replacement citation for a repealed range of rules.]//

[For text of subitem (2), see M.R.]

[For text of item F, see M.R.]

7045.0800 MIXTURES OF USED OIL AND HAZARDOUS WASTE.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Rebuttable presumption of mixing.** Except as provided in items A to C, used oil containing more than 1,000 ppm total halogens is presumed to have been mixed with a halogenated hazardous waste listed in part 7045.0135, and thus is subject to

regulation as a listed hazardous waste. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste. Demonstration must either involve applying knowledge of the source of halogens or the use of an analytical method from Environmental Protection Agency document SW-846, ~~Edition III, (such as method 8010A or 8021)~~ as incorporated by reference in part 7045.0065, item D, to show that the used oil does not contain greater than 100 ppm of any individual halogenated hazardous constituent listed in part 7045.0139.

[In subpart 3, the MPCA revises language to more accurately identify the prescribed analytic method. The MPCA also provides a clearer reference to where it is incorporated into these rules.]//

[For text of items A to C, see M.R.]

Subp. 4. **Characteristic waste.** Mixtures of used oil and hazardous waste that solely exhibits one or more of the hazardous waste characteristics identified in part 7045.0131 and mixtures of used oil and hazardous waste that is listed in part 7045.0135 solely because it exhibits one or more of the characteristics of hazardous waste identified in part 7045.0131 are subject to:

[For text of item A, see M.R.]

B. except as provided in item C, regulation as used oil under parts 7045.0790 to 7045.0990 and regulation under the land disposal restrictions of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, if the resultant mixture does not exhibit any characteristic of hazardous waste identified in part 7045.0131; or

[In item B, the MPCA provides the replacement citation for a repealed range of rules.]//

[For text of item C, see M.R.]

7045.0805 WASTE CONTAINING OR CONTAMINATED WITH USED OIL.

A. Waste contaminated with used oil that is destined for disposal is subject to evaluation under parts 7045.0102 to ~~7045.0143~~ 7045.0155 to determine if it is hazardous waste, and the appropriate solid or hazardous waste management standards based on the results of the evaluation, unless the waste is:

[In item A, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subitems (1) and (2), see M.R.]

[For text of items B to E, see M.R.]

7045.0855 STANDARDS FOR USED OIL GENERATORS.

[For text of subpart 1, see M.R.]

Subp. 2. **Storage.**

A. Used oil generators shall comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this part. Used oil generators shall also comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280,~~ chapter 7150 for used oil stored in underground tanks, whether or not the

used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

[In item A, the MPCA deletes a reference to the federal underground storage tank standards and replaces it with language to clarify that the State rules governing storage tank standards found in chapter 7150 apply to used oil generators who store used oil in underground tanks. The federal regulations governing underground tanks were in effect before the adoption of the State rules governing underground tanks and a reference to the federal regulations was reasonable. However, now that the State rules are in effect, it is reasonable to delete the redundant reference to the federal regulations. None of these references to existing rules and statutes change the effect of this item.]//

B. Used oil generators who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to 7100.0090~~ chapter 7151, in addition to the requirements of this part. Used oil generators who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil generators shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

[In item B, the MPCA removes obsolete and superfluous time and size limits. Appropriate limits are provided in applicable chapter 7151 rules. The MPCA also corrects a citation to repealed chapter 7100 rules that were previously changed and moved to chapter 7151. The MPCA also corrects an obsolete reference to provide the current State Fire Code. These changes maintain the original intent of the rule that above ground storage tank rules, spill prevention and response rules, and State Fire Codes apply to those storing used oil.]//

[For text of items C and D, see M.R.]

Subp. 3. **On-site burning in small burning units designed to burn used oil.** Generators who store used oil in vessels directly connected to burning units shall comply with ~~article 61 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510. Generators may burn used oil in burning units designed to burn used oil provided that:

[In subpart 3, the MPCA corrects a reference to the State Fire Code.]//

[For text of items A to D, see M.R.]

E. the unit ~~is used in accordance~~ and its operation comply with the Minnesota ~~Statutes, section 299F.015~~ Fire Code.

[For text of subps 4 and 5, see M.R.]

Subp. 6. **Closure.**

A. Generators who store or process used oil in aboveground tanks must to the extent practical, at closure of the tank system, remove or decontaminate visible residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[In item A, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

B. Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subp 7, see M.R.]

7045.0865 STANDARDS FOR USED OIL TRANSPORTERS AND TRANSFER FACILITIES.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Used oil discharges.**

[For text of items A to C, see M.R.]

D. An air, rail, highway, or water transporter who has discharged used oil must give notice, if required by Code of Federal Regulations, title 49, section 171.15, as amended, to the National Response Center (800) 424-8802, and report in writing as required by Code of Federal Regulations, title 49, section 171.16, as amended, to the ~~Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau~~ Information Systems Manager, PHH-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001, or submit an electronic hazardous materials incident report to the Information Systems Manager, DHM-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001 at http://hazmat.dot.gov.

[In item D, the MPCA follows advice from Minnesota's Department of Transportation to revise language to conform with amended U.S. Department of Transportation regulations.]//

[For text of subp 8, see M.R.]

Subp. 9. **Used oil storage at transfer facilities.** This subpart applies to used oil transfer facilities where used oil is stored for more than 24 hours and no more than 35 days. Transfer facilities where used oil is stored for more than 35 days are subject to regulation under part 7045.0875.

A. Used oil transporters shall comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this part. Used oil transporters shall also comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280, as amended,~~ chapter 7150 for used oil stored in underground tanks, whether or not the used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

[In item A, the MPCA deletes a reference to the federal underground storage tank standards and replaces it with language to clarify that the State rules governing storage tank standards found in chapter 7150 apply to used oil transporters who store

used oil in underground tanks. The federal regulations governing underground tanks were in effect before the adoption of the State rules governing underground tanks and a reference to the federal regulations was reasonable. However, now that the State rules are in effect, it is reasonable to delete the redundant reference to the federal regulations. None of these references to existing rules and statutes change the effect of this item.]//

B. Used oil transporters who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to 7100.0090~~ chapter 7151, in addition to the requirements of this part. Used oil transporters who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil transporters shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

[In item B, the MPCA removes obsolete and superfluous time and size limits. Appropriate limits are provided in applicable chapter 7151 rules. The MPCA also corrects a citation to repealed chapter 7100 rules that were previously changed and moved to chapter 7151. The MPCA also corrects an obsolete reference to provide the current State Fire Code. These changes maintain the original intent of the rule that above ground storage tank rules, spill prevention and response rules, and State Fire Codes apply to transporters who store used oil.]//

C. Used oil transporters shall not store used oil in units other than containers or tanks and shall ensure that the following requirements for containers and tanks are met. Containers and tanks used to store used oil at transfer facilities must be in good condition, not leaking, and closed. Containers must be equipped with a secondary containment system consisting of dikes, berms, or retaining walls and a floor that covers the entire area within the dikes, berms, or retaining walls, or an equivalent secondary containment system. The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water. Containers, aboveground tanks, and fill pipes of underground tanks used to store used oil at transfer facilities must be marked with the words "Used Oil." Aboveground tanks used to store used oil at transfer facilities ~~are~~ may also be subject to the secondary containment requirements ~~of parts 7100.0010 to 7100.0090~~ and other requirements in chapter 7151. ~~Double-walled tanks meet this secondary containment requirement.~~

[In item C, the MPCA clarifies that the storage tank standards found in chapter 7151 apply to transfer facilities that store used oil in aboveground tanks. This change does not add new regulation but only clarifies that certain requirements of the above ground tank standards may also apply. The MPCA also is removing a statement that double walled tanks meet the secondary containment requirement for above ground tanks. The requirements for the application of secondary containment are addressed in more detail in chapter 7151 and the MPCA believes it is more appropriate to refer readers to that chapter rather than to simply identify double walled tanks, which is only one of the options allowed for secondary containment.]//

[For text of item D, see M.R.]

[For text of subps 10 to 12, see M.R.]

Subp. 13. **Closure.**

A. Owners and operators who store or process used oil in aboveground tanks must, at closure of the tank system, remove or decontaminate residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in this item, then the owner or operator must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements of part 7045.0638, subpart 4, that apply to hazardous waste landfills.

[In item A, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

B. Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subp 14, see M.R.]

7045.0875 STANDARDS FOR USED OIL PROCESSORS AND REREFINERS.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Used oil storage and management.**

A. Used oil processors/rerefiners shall comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this part. Used oil processors/rerefiners shall also comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280, as amended,~~ chapter 7150 for used oil stored in underground tanks, whether or not the used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

[In item A, the MPCA deletes a reference to the federal underground storage tank standards and replaces it with language to clarify that the State rules governing storage tank standards found in chapter 7150 apply to used oil processors and rerefiners who store used oil in underground tanks. The federal regulations governing underground tanks were in effect before the adoption of the State rules governing underground tanks and a reference to the federal regulations was reasonable. However, now that the State rules are in effect, it is reasonable to delete the redundant reference to the federal regulations. None of these references to existing rules and statutes change the effect of this item.]//

B. Used oil processors/rerefiners who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to~~

~~7100.0090~~ chapter 7151, in addition to the requirements of this part. Used oil processors/rerefiners who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil processors/rerefiners shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

[In item B, the MPCA removes obsolete and superfluous time and size limits. Appropriate limits are provided in applicable chapter 7151 rules. The MPCA also corrects a citation to repealed chapter 7100 rules that were previously changed and moved to chapter 7151. The MPCA also corrects an obsolete reference to provide the current State Fire Code. These changes maintain the original intent of the rule that above ground storage tank rules, spill prevention and response rules, and State Fire Codes apply to those storing used oil.]//

C. Used oil processors/rerefiners shall not store used oil in units other than containers or tanks and shall ensure that the following requirements for containers and tanks are met. Containers and tanks used to store used oil at processing/rerefining facilities must be in good condition, not leaking, and closed. Containers must be equipped with a secondary containment system. The secondary containment system must consist of, at a minimum, dikes, berms, or retaining walls, and a floor which covers the entire area within the dike, berm, or retaining wall. An equivalent secondary containment system may be used for containers. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water. Containers, aboveground tanks, and fill pipes of underground tanks used to store used oil at transfer facilities must be marked with the words "Used Oil." Aboveground tanks used to store used oil at transfer facilities ~~are~~ may also be subject to the secondary containment requirements ~~of parts 7100.0010 to 7100.0090~~ and other requirements in chapter 7151. ~~Double-walled tanks meet this secondary containment requirement.~~

[In item C, the MPCA clarifies that the storage tank standards found in chapter 7151 apply to used oil processors and rerefiners that store used oil in aboveground tanks. This change does not add new regulation but only clarifies that certain requirements of the aboveground tank standards may also apply in accordance with the requirements of those rules. The MPCA also is removing a statement that double walled tanks meet the secondary containment requirement for above ground tanks. The requirements for the application of secondary containment are addressed in more detail in chapter 7151 and the MPCA believes it is more appropriate to refer readers to that chapter rather than to list just one of the options.]//

[For text of item D, see M.R.]

E. Closure:

(1) Owners and operators who store or process used oil in aboveground tanks must, at closure of the tank system, remove or decontaminate residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155. If the owner or operator demonstrates that not all contaminated soils can be practicably

removed or decontaminated as required in this subitem, then the owner or operator must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements of part 7045.0638, subpart 4, that apply to hazardous waste landfills.

[In subitem (1), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

(2) Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[In subitem (2), the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subps 6 to 11, see M.R.]

7045.0885 STANDARDS FOR USED OIL BURNERS WHO BURN OFF-SPECIFICATION USED OIL FOR ENERGY RECOVERY.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Used oil storage.**

A. Applicability of federal storage regulations. Used oil burners must comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this subpart. Used oil burners must comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280, as amended,~~ chapter 7150 for used oil stored in underground tanks, whether or not the used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

[In item A, the MPCA deletes a reference to the federal underground storage tank standards and replaces it with language to clarify that the State rules governing storage tank standards found in chapters 7150 apply to used oil burners who store off-specification used oil for energy recovery in underground tanks. The federal regulations governing underground tanks were in effect before the adoption of the State rules governing underground tanks and a reference to the federal regulations was reasonable. However, now that the State rules are in effect, it is reasonable to delete the redundant reference to the federal regulations. None of these references to existing rules and statutes change the effect of this item.]//

B. Used oil burners who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to 7100.0090~~ chapter 7151, in addition to the requirements of this subpart. Used oil burners who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil burners shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

[In item B, the MPCA removes obsolete and superfluous time and size limits. Appropriate limits are provided in applicable chapter 7151 rules. The MPCA also corrects a citation to repealed chapter 7100 rules that were previously changed and moved to chapter 7151. The MPCA also corrects an obsolete reference to provide the current State Fire Code. These changes maintain the original intent of the rule that above ground storage tank rules, spill prevention and response rules, and State Fire Codes apply to those storing used oil.]//

C. Used oil burners shall not store used oil in units other than containers or tanks and must ensure that the following requirements for containers and tanks are met. Containers and tanks used to store used oil at burning facilities must be in good condition, not leaking, and closed. Containers must be equipped with a secondary containment system. The secondary containment system must consist of, at a minimum, dikes, berms, or retaining walls, and a floor which covers the entire area within the dike, berm, or retaining wall. An equivalent secondary containment system may be used for containers. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water. Containers, aboveground tanks, and fill pipes of underground tanks used to store used oil at transfer facilities must be marked with the words "Used Oil." Aboveground tanks used to store used oil at burning facilities ~~are~~ may also be subject to the secondary containment requirements ~~of parts 7100.0010 to 7100.0090~~ and other requirements in chapter 7151. ~~Double-walled tanks meet this secondary containment requirement.~~

[In item C, the MPCA clarifies that the storage tank standards found in chapter 7151 apply to used oil burners who store used oil in aboveground tanks. This change does not add new regulation but only clarifies that certain requirements of the aboveground tank standards may also apply in accordance with the requirements of those rules. The MPCA also is removing a statement that double walled tanks meet the secondary containment requirement for above ground tanks. The requirements for the application of secondary containment are addressed in more detail in chapter 7151 and the MPCA believes it is more appropriate to refer readers to that chapter rather than to simply identify double walled tanks, which is only one of the options allowed for secondary containment.]//

[For text of item D, see M.R.]

[For text of subps 7 to 9, see M.R.]

Subp. 10. **Closure.**

A. Owners and operators who store or process used oil in aboveground tanks must, at closure of the tank system, remove or decontaminate residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in this item, then the owner or operator must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements of part 7045.0638, subpart 4, that apply to hazardous waste landfills.

[In item A, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

B. Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[In item B, the MPCA corrects a citation to a range of rules that changed as parts were added.]//

[For text of subp 11, see M.R.]

7045.1390 LAND DISPOSAL RESTRICTIONS.

Subpart 1. **Incorporation of federal land disposal restrictions.** Code of Federal Regulations, title 40, part 268, as amended, land disposal restrictions, is incorporated by reference, except as provided in subparts 2 to 5.

[In subpart 1, the MPCA incorporates 40 CFR 268, Land Disposal Restrictions, by reference, as amended. The MPCA has gone through a long process of addressing the federal land disposal restrictions in the State rules. The MPCA has amended the rules several times over many years to add new elements of the federal land disposal restrictions to the State rules as they were issued by EPA. Up to this point the MPCA has used a combination of incorporation by references and adopting the federal language into the State rules. In this rulemaking, the MPCA has decided to repeal the previously adopted land disposal restriction language and to simply incorporate all of the federal land disposal restrictions by reference. The MPCA believes this is reasonable for three reasons.//

First, the MPCA is required to adopt the land disposal restrictions to maintain hazardous waste program authorization. The land disposal restrictions are more stringent elements of the hazardous waste program and therefore required (while the MPCA may decline to adopt federal amendments that reduce the stringency of existing land disposal restrictions, the main body of land disposal restrictions is a required element). Secondly, the federal land disposal restrictions are at this time essentially complete. Although the EPA will continue to amend and refine the requirements, there are no longer any major elements that remain to be adopted. The MPCA's piecemeal process of addressing different elements of the land disposal restrictions can now be more appropriately replaced by a single incorporation by reference to the full set of federal land disposal restrictions. Finally, for the reasons discussed in Part IV of this Statement, the MPCA believes that incorporating by reference is a reasonable and effective way to keep the State rules consistent with those aspects of the federal regulations that the MPCA does not anticipate modifying to meet State only concerns.//

One significant exception to the MPCA's incorporating the land disposal restrictions by reference is that the MPCA considered and rejected the federal language found at 40 CFR 268.2(g) and 268.2(h), the definitions of debris and hazardous debris, and in other sections of 40 CFR part 268 that would allow hazardous debris to be disposed in landfills. The MPCA is concerned that hazardous debris may easily be contaminated

with mercury that would be listed or TCLP hazardous waste and that disposal of such mercury contaminated debris in landfills is not adequately protective. Minnesota's environment is sensitive to mercury contamination. The MPCA has placed a high priority on efforts to reduce mercury in the environment. The MPCA believes that it is reasonable to decline to adopt these federal amendments that would reduce the management standards for hazardous debris which could easily be contaminated with mercury. Even though the federal regulations that address the management of hazardous debris are not optional provisions, RCRA allows authorized states to be more stringent than EPA. Since the MPCA finds unacceptable the potential risk for releasing mercury allowed by the EPA's hazardous debris exclusion, it is choosing not to incorporate that exclusion.//

In this rulemaking to amend the land disposal restrictions, the MPCA is incorporating language from the following RCRA Amendments except as described in subparts 2-5 (note that later RCRA amendments has supplanted certain content of earlier amendments):

- **Required RCRA Amendment 95: "Land Disposal Restrictions for Electric Arc Furnace Dust (K061)" = 40 CFR 268.41(a)/Table CCWE, 268.41(b), and 268.42(a)/Table 2; regarding the need for and reasonableness of this amendment, the MPCA agrees with and is relying on the EPA's rationale found in 56 FR 41164-41178, August 19, 1991. Some tables and other content from this amendment have been supplanted by subsequent amendments. For example, the information formerly in 40 CFR 268.41 is now in 40 CFR 268.40. Also, some tables have since been repealed.//**
- **Required RCRA Amendment 109: "Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris" = 40 CFR 268.5(h)(2)(ii, iv-vi); 268.7(a)(1)(iii-v); 268.7(a)(2); 268.7(a)(3)(iv-vi); 268.7(a)(4); 268.7(b)(4); 268.7(b)(5); 268.7(d); 268.7(d)(1); 268.7(d)(1)(i-iii); 268.7(d)(2); 268.7(d)(3); 268.7(d)(3)(i-iii); 268.9(d); 268.9(d)(1)(i-iii); 268.9(d)(2); 268.14(a-c); 268.36(a-h); 268.36(h)(1-4); 268.36(i); 268.40(b, d); 268.41(a); 268.41(a)/Table CCWE; 268.41(c); 268.42/Table 2; 268.42(b-d); 268.43/Table CCW; 268.45(a); 268.45(a)(1-5); 268.45(b); 268.45(b)(1-3); 268.45(c); 268.45(d)(1); 268.45(d)(1)(i-ii); 268.45(d)(2-5); 268.45/Table 1; 268.46; 268.46/Table 1; 268.50(a)(1-2); 268 Appendix II. Further information can be found in 57 FR 37194-37282, August 18, 1992.//**
- **Required RCRA Amendment 116: "Hazardous Soil Case-By-Case Capacity Variance" = 40 CFR 268.35(c-e) and 268.35(e)(1-2). Further information can be found in 57 FR 47772-47776, October 20, 1992.//**
- **Required RCRA Amendment 123: "Land Disposal Restrictions; Renewal of the Hazardous Waste Debris Case-by-Case Capacity Variance" = 40 CFR 268.35(e)(1-5); 268.35(e)(5)(i-ii); and 268.35(e)(5)(ii)(A-H). Further information can be found in 58 FR 28506-28511, May 14, 1993.//**
- **Required RCRA Amendment 124: "Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated" = 40 CFR 268.1(e)(4-5); 268.2(i); 268.7(a); 268.7(a)(1)(ii); 268.7(b)(4)(ii); 268.9(a); 268.37(a); 268.37(b); 268.40(b); 268.41(a)/Table CCWE; 268.42(a)/Table 2; and 268.43(a) Table CCW. Further information can be found in; 58 FR 29860-29887,**

May 24, 1993.//

- **Required RCRA Amendment 126: "Testing and Monitoring Activities" = 40 CFR 268.7(a); 268.40(a); 268.41(a); 268 Appendix I; and 268 Appendix IX. Further information can be found in 58 FR 46040-46051, August 31, 1993.//**
- **Required RCRA Amendment 134: "Correction of Beryllium Powder (P015) Listing" = 40 CFR 268.42(a)/Table 2. Further information can be found in 59 FR 31551-31552, June 20, 1994.//**
- **Required RCRA Amendment 136: "Removal of the Conditional Exemption for Certain Slag Residues" = 40 CFR 268.41(a)/Table CCWE. Further information can be found in 59 FR 43496-43500, August 24, 1994.//**
- **Required RCRA Amendment 137: "Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes" = 40 CFR 268.1(c)(3)(ii-iii); 268.1(e)(4-5); 268.2(g, i); 268.7(a); 268.7(a)(1); 268.7(a)(1)(i-vi); 268.7(a)(2)(i); 268.7(a)(2)(i)(A-D); 268.7(a)(2)(ii); 268.7(a)(3); 268.7(a)(3)(i-v); 268.7(a)(3)(v)(A-B); 268.7(a)(3)(vii-vii); 268.7(a)(4); 268.7(a)(4)(i-iii); 268.7(a)(5-10); 268.7(b)(4)(ii); 268.7(b)(5)(iv); 268.7(d); 268.7(d)(1); 268.9(a); 268.9(d)(1)(i-ii); 268.9(d)(2)(i-ii); 268.38(a-d); 268.38(d)(1-4); 268.38(e); 268.40(a); 268.40(a)(1-3); 268.40(b-d); 268.40(d)(1-3); 268.40(e-f); 268.40/Table; 268.41 and Table CCWE; 268.42 note; 268.42(a); 268.42(a)/Tables 1-3; 268.42(c)(2); 268.42(d); 268.43; 268.43/Table CCW; 268.45(b)(2); 268.46; 268.48(a); 268.48/Table UTS; 268/Appendix IV; 268/Appendix V; and 268/Appendix X. Further information can be found in 59 FR 47982-48110, September 19, 1994 as amended at 60 FR 242-302, January 3, 1995.//**
- **Required RCRA Amendment 151, 151-1, 151-2, 151-3, 151-4, 151-5, and 151-6: "Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners" = 40 CFR 268.1(c)(3); 268.1(c)(3)(i-iii); 268.1(c)(4); 268.1(c)(4)(i-iv); 268.1(e)(3-4); 268.1(e)(4)(i-ii); 268.1(e)(5); 268.2(f); 268.2(f)(1-3); 268.2(i-l); 268.3(a-c); 268.3(c)(1-6); 268.7(a); 268.7(a)(1)(ii); 268.7(a)(1)(iv-vi); 268.7(a)(2)(i)(B); 268.7(a)(3)(ii); 268.7(b)(4)(ii); 268.7(b)(5)(iv-v); 268.8; 268.9(a); 268.9(d); 268.9(d)(1)(i)-(ii); 268.9(d)(3); 268.9(d)(3)(i)-(iv); 268.9(e-g); 268.39(a-f); 268.39(f)(1-4); 268.39(g); 268.40(a, e); 268.40(e)(1-4); 268.40(g); 268.40/Table; 268.42 Table 1; 268.44(a); 268.48(a)/Table UTS; and 268 Appendix XI. Further information can be found in 61 FR 15566-15660, April 8, 1996; as amended at 61 FR 15660-15668, April 8, 1996; 61 FR 19117, April 30, 1996; 61 FR 33680-33690, June 28, 1996; 61 FR 36419-36421, July 10, 1996; 61 FR 43924-43931, August 26, 1996; and 62 FR 7502-7600, February 19, 1997.//**
- **Required RCRA Amendment 155**Error! Bookmark not defined.**: "Land Disposal Restrictions Phase III -- Emergency Extension of the K088 National Capacity Variance" = 40 CFR 268.39(c). Further information can be found in 62 FR 1992-1997, January 14,1997.//**
- **Required RCRA Amendment 160: "Land Disposal Restrictions Phase III -- Emergency Extension of the K088 National Capacity Variance, Amendment" = 40 CFR 268.39(c). Further information can be found in 62 FR 37694-37699, July 14,1997.//**
- **Required RCRA Amendment 161: "Emergency Revision of the Carbamate Land Disposal Restrictions" = 268.40(g) and 268.48(a)/Table. Further information can**

be found in 62 FR 45568, August 28, 1997.//

- **Optional RCRA Amendment 162: "Clarification of Standards for Hazardous Waste LDR Treatment Variances" = 40 CFR 268.44(a) intro and 268.44(a)(1); 268.44(a)(2) intro and (i-ii); 268.44(h) intro; 268.44(h)(1); 268.44(h)(2) intro; 268.44(h)(2)(i-ii); 268.44(h)(3); 268.44(m); and 268.44(p). Further information can be found in 62 FR 64504-64509, December 5, 1997.//**
- **Required RCRA Amendment 167a: "Land Disposal Restrictions Phase IV – Treatment Standards for Metal Wastes and Mineral Processing Wastes" = 40 CFR 268.2(i); 268.3(d); 268.34(a); 268.34(b); 268.34(c); 268.34(d) intro; 268.34(d)(1-4); 268.40(e); 268.40(h); 268.40/Table Treatment Standards for Hazardous Wastes; and 268.48(a)/Table UTS. Further information can found in 63 FR 28556-28753, May 26, 1998. The revised numerical Universal Treatment Standards (UTS) for metal constituents Barium, Lead, Selenium, Beryllium, Nickel, Thallium, and Vanadium are less stringent than existing standards and are optional for State adoption. The revised UTS for Cadmium, Chromium, Silver, Antimony and Zinc are more stringent so are required. In this rulemaking the MPCA is adopting both the required and optional treatment standards.//**
- **Optional RCRA Amendment 167b: "Land Disposal Restrictions Phase IV – Hazardous Soils Treatment Standards and Exclusions" = 40 CFR 268.2(k); 268.7(a)(1); 268.7(a)(2); 268.7(a)(2)(i); 268.7(a)(2)(ii); 268.7(a)(3) intro; 268.7(a)(3)(ii); 268.7(a)(4); 268.7(a)(4)/table; 268.7(a)(5); 268.7(a)(6); 268.7(b)(1-3); 268.7(b)(3)(ii)/Table; 268.7(b)(4) intro; 268.7(e) intro; 268.7(e)(1-2); 268.44(h)(3) intro; 268.44(h)(3)(i); 268.44(h)(3)(i)(A-B); 268.44(h)(3)(ii); 268.44(h)(4-5); 268.49(a-b); 268.49(c) intro; 268.49(c)(1) intro; 268.49(c)(1)(A-C); 268.49(c)(2); 268.49(c)(3) intro; 268.49(c)(3)(A-B); 268.49(d); 268.49(e) intro; 268.49(e)(1); 268.49(e)(2) intro; and 268.49(e)(2)(A-B). Further information can be found in 63 FR 28556-28753, May 26, 1998.//**
- **Conditionally required RCRA Amendment 167c: "Land Disposal Restrictions Phase IV – Corrections" = 40 CFR 268.4(a)(2)(ii-iii); 268.7(a)(4)/table; 268.7(a)(7); 268.7(b)(3)(ii)/Table; 268.7(b)(4)(iv); 268.7(b)(4)(v); 268.7(b)(5-6); 268.40(e); 268.40/table Treatment Standards for Hazardous Wastes; 268.42(a); 268.42(a)(1–3); 268.45(a) intro; 268.45(d)(3); 268.45(d)(4); 268.48(a)/table UTS; Appendix VII Table 1-2; and Appendix VIII. Further information can be found in 63 FR 28556-28753, June 8, 1998. These changes are conditionally required. If, as Minnesota has done, the State has adopted the optional revisions to the recordkeeping and paperwork requirements in Revision Checklist 157, then the State is required to adopt the changes to 40 CFR 268.7 in this checklist with the exception of adding the entries for contaminated soils in the Tables at 268.7(a)(4) and 268.7(b)(3)(iii).//**
- **Optional RCRA Amendment 170: "Land Disposal Restrictions Phase IV -- Zinc Micronutrient Fertilizers, Amendment" = 40 CFR 268.40(i) (first entry). Further information can be found in 63 FR 46332-46334, August 31, 1998.//**
- **Required RCRA Amendment 171: "Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards for Listed Hazardous Wastes from Carbamate Production" = 40 CFR 268.40(g), 268.40(i), 268.40/Table, and 268.48(a)/Table. Further information can be found in 63 FR 47410-47418, September 4, 1998.//**

- **Optional RCRA Amendment 172: "Land Disposal Restrictions Phase IV -- Extension of Compliance Date for Characteristic Slags" = 40 CFR 268.34(b)-(f). Further information can be found in 63 FR 48124-48127, September 9, 1998.//**
- **Required RCRA Amendment 173: "Land Disposal Restrictions; Treatment Standards for Spent Potliners from Primary Aluminum Reduction (K088); Final Rule" = 40 CFR 268.39(c) and 268.40/Table. Further information can be found in 63 FR 51254-51267, September 24, 1998.//**
- **Required RCRA Amendment 179: "Land Disposal Restrictions Phase IV -- Technical Corrections and Clarifications to Treatment Standards" = 40 CFR 268.2(h, k); 268.7(a)(4)/Table; 268.7(b)(3)(ii)/Table; 268.7(b)(4)(iv); 268.9(d)(2) intro; 268.9(d)(2)(i); first 268.40(i-j); 268.40/Table; 268.48(a)/Table; 268.49(c)(3) intro; 268.49(c)(3)(A); 268.49(c)(3)(B). Further information can be found in 64 FR 25408-25417, May 11, 1999.//**
- **Optional RCRA Amendment 183: "Land Disposal Restrictions Phase IV -- Technical Corrections" = 40 CFR 268.7(a)(3)(iii); 268.40(j); 268.40/Table; and 268.49(c)(1)(A-B). Further information can be found in 64 FR 56469-56472, October 20, 1999.//**
- **Optional RCRA Amendment 185: "Organobromine Production Wastes Vacatur" = 40 CFR 268.33; 268.40/table; and 268.48(a)/table. Further information can be found in 65 FR 14472-14475, March 17, 2000.//**
- **Required RCRA Amendment 187: "Petroleum Refining Process Wastes – Clarification" = 40 CFR 268 Appendix VII. Further information can be found in 64 FR 36365-36367, June 8, 2000.//**
- **Required RCRA Amendment 189: "Chlorinated Aliphatics Listing and LDRs for Newly Identified Wastes" = 40 CFR 268.33(a); 268.33(b) intro; 268.33(b)(1-5); 268.33(c); 268.33(d) intro; 268.33(d)(1-2); 268.40/Table; and 268.48(a)/Table. Further information can be found in 65 FR 67068-67133, November 8, 2000.//**
- **Optional RCRA Amendment 190: "Land Disposal Restrictions Phase IV -- Deferral for PCBs in Soil" = 40 CFR 268.32(a); 268.32(b) intro; 268.32(b)(1)(i-ii); 268.32(b)(2)(i-ii); 268.32(b)(3-4); 268.48(a)/Table UTS; 268.49(d); and 268 Appendix III. Further information can be found in 65 FR 81373-81381, December 26, 2000.//**
- **Required RCRA Amendment 192b: "Land Disposal Restrictions Correction" = 40 CFR 268 Appendix VII, Table 1. Further information can be found in 66 FR 27266-27297, May 16, 2001.]//**

Subp. 2. **General additions, modifications, or exceptions to incorporation of regulations.**

[In subpart 2, the MPCA provides general exceptions to its incorporations in subpart 1.]//

A. Part 7045.0090, adoption and incorporation by reference, also applies.

[In item A, the MPCA refers readers to the general rule part that governs adoption and incorporation by reference.]//

B. The agency does not incorporate the definitions of debris or hazardous debris in Code of Federal Regulations, title 40, section 268.2, or the regulations related to debris and hazardous debris throughout Code of Federal Regulations, title 40, part 268, including the treatment standards for hazardous debris in section 268.45. Wastes that

would be federally regulated as debris or hazardous debris are regulated as hazardous waste.

[In item B, as discussed in the introduction to this part, the MPCA is specifically declining to incorporate the land disposal restrictions relating to hazardous debris. The effect of this will be that hazardous debris will not be excluded from land disposal treatment standards in Minnesota.]//

Subp. 3. **Exceptions or additions to Code of Federal Regulations, title 40, subpart A.**

A. The agency does not incorporate Code of Federal Regulations, title 40, section 268.1(c)(3), allowing disposal into an injection well.

[In item A, the MPCA is declining to allow the subsurface injection of hazardous waste because of Minnesota's existing laws banning disposal of waste into the saturated or unsaturated zones (see the discussion in Part 7045.0071). The use of an injection well for waste disposal is not allowed in Minnesota. Thus, it is reasonable to clarify that although injection is referenced in the EPA's land disposal restrictions, Minnesota prohibits this practice and is not adopting the EPA regulations in 40 CFR part 268 related to injection wells.]//

B. References to "EPA" in Code of Federal Regulations, title 40, sections 268.1(e)(3) and 268.2(j) mean the federal Environmental Protection Agency.

[In item B, the MPCA clarifies that in the cited sections, 40 CFR 267.1(e)(3), Wastes identified or listed as hazardous after November 8, 1984 for which EPA has not promulgated land disposal prohibitions or treatment standards, and 40 CFR 268.2(j), Inorganic metal-bearing waste is one for which EPA has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content which are referenced in 40 CFR 268.3(c)(1), and is specifically listed in appendix XI of this part. In these sections, the term 'EPA' will continue to refer to the EPA and will not, through operation of part 7045.0090, be considered to refer to the MPCA. This is reasonable because the activities referenced at each of these two provisions (establishing treatment standards) are EPA actions that cannot be conducted by a state.]//

C. The agency does not incorporate the definitions found in Code of Federal Regulations, title 40, section 268.2, paragraph a, c, d, e, f, g, or h.

[In item C, the MPCA is not adopting certain definitions found in 40 CFR 268.2. For the definitions in 268.2(a-f), the MPCA already has definitions of these terms in part 7045.0020. In some instances, those definitions differ from the EPA'S definitions in 40 CFR 268.2. The MPCA believes that it is appropriate to continue to use in the land disposal restrictions the same definitions that the MPCA uses for its other hazardous waste rules to ensure that the same types of waste are consistently regulated. The MPCA is also not adopting the EPA's definitions for the terms "debris" or "hazardous debris," in 40 CFR 268.2 (g) and (h). As noted in subpart 2 above, the MPCA is not adopting the EPA's exclusions related to debris and hazardous debris. The MPCA is incorporating the EPA's definitions of the terms in 40 CFR 268.2(i-k) because the MPCA does not have definitions for these terms. These definitions are related to required RCRA Amendment 151: "Land Disposal Restrictions Phase III-Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners" = 40 CFR 268.2; as supported at 61 FR 15566-15660, April 8, 1996; as amended at 61 FR 15660-

15668, April 8, 1996; 61 FR 19117, April 30, 1996; 61 FR 33680-33690, June 28, 1996; 61 FR 36419-36421, July 10, 1996; 61 FR 43924-43931, August 26, 1996; and 62 FR 7502-7600, February 19, 1997.]//

D. References in Code of Federal Regulations, title 40, section 268.7(a)(9)(iii), to D001 to D043 do not include D009.

[In item D, the MPCA follows the EPA's advice to states incorporating federal regulations by reference to correct an error that appeared in 40 CFR 268.7(s)(9)(iii). The EPA is in the process of correcting a number of errors in the CFR. Until that process is completed, this simply clarifies the EPA's intent for this range or waste codes in this provision.]//

E. The agency does not incorporate Code of Federal Regulations, title 40, section 268.5, governing procedures for case-by-case extensions to an effective date. That section is administered by the EPA.

[In item E, the MPCA cannot incorporate 40 CFR 268.5, because the RCRA does not allow the EPA to delegate to the states its authority to issue these extensions.]//

F. The agency does not incorporate Code of Federal Regulations, title 40, section 268.6, governing petitions to allow land disposal of a waste prohibited under subpart C. Part 7045.0075, subpart 9, applies.

[In item F, the MPCA cannot incorporate 40 CFR 268.6, because the RCRA does not allow the EPA to delegate to the states its authority to issue no-migration petitions. While the EPA approves federal petitions, State rules require that no-migration petitions also be approved by the MPCA through a petition process found in part 7045.0075, subpart 12.]//

G. The agency does not incorporate Code of Federal Regulations, title 40, section 268.4(a)(3)(ii) and (iii), relating to waivers or modifications of surface impoundment requirements.

[In item G, the MPCA chooses not to incorporate 40 CFR 268.4(a)(3)(ii) to allow waivers or modifications of the liner requirements applicable to surface impoundments. The MPCA believes that existing part 7045.0532, subpart 3, provides an equivalent standards to those offered under 268.4(3)(ii). The MPCA does not want to establish a new process by which it will issue waivers to those requirements. In Minnesota, a person can seek a variance to hazardous waste rule requirements through the process established in part 7045.0060. Similarly, the MPCA chooses not to incorporate 40 CFR 268.4(a)(3)(iii) which allows waivers based on a demonstration of no migration. Existing State rules provide the owners or operators of any land disposal facility the ability to demonstrate no migration through the petition process in part 7045.0075, subpart 12. The MPCA finds it unnecessary to duplicate this existing mechanism, so is declining to incorporate 40 CFR 268.4(a)(3)(iii) by reference.]//

Subp. 4. **Exceptions or additions to Code of Federal Regulations, title 40, subpart B.** The agency does not incorporate the EPA schedule in Code of Federal Regulations, title 40, section 268.13, for wastes identified or listed after November 8, 1984. That section is administered by the Environmental Protection Agency.

[In subpart 4, the MPCA cannot incorporate 40 CFR 268.13, because the RCRA does not allow the EPA to delegate to the states its authority to provide the schedule by which the EPA must evaluate wastes for land disposal restrictions.]//

Subp. 5. **Exceptions or additions to Code of Federal Regulations, title 40, subpart D.**

A. The agency does not incorporate Code of Federal Regulations, title 40, section 268.42(b), governing the demonstration of an alternative treatment method. That section is administered by the EPA.

[In item A, the MPCA cannot incorporate 40 CFR 268.42(b), because the RCRA does not allow the EPA to delegate to the states its authority to review and approve alternative treatment methods.]//

B. The agency does not incorporate Code of Federal Regulations, title 40, section 268.44, paragraphs (a) to (g) or (o), governing variance from a treatment standard and wastes excluded in various states. That section is administered by the EPA.

[In item B, the MPCA cannot incorporate 40 CFR 268.44(a)-(g), because the RCRA does not allow the EPA to delegate to the states its authority to provide generators the option of seeking a variance from a specific treatment standard. The MPCA chooses not to incorporate 40 CFR part 268.44(o) relating to other state activities because it is not relevant to any MPCA function.]//

REPEALER. Minnesota Rules, parts 7045.0020, subpart 45a; 7045.0075, subparts 8 and 10; 7045.0135, subparts 1, 2, 2a, 3, and 4; 7045.0139, subpart 2; 7045.0141, subparts 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 23; 7045.0143, subparts 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14, 15, 17, 20, 21, 23, 25, and 27; 7045.0544, subparts 2 and 3; 7045.1300; 7045.1305; 7045.1309; 7045.1310; 7045.1315; 7045.1320; 7045.1325; 7045.1330; 7045.1333; 7045.1334; 7045.1335; 7045.1339; 7045.1350; 7045.1355; 7045.1358; 7045.1360; and 7045.1380, are repealed.

[Finally, in the REPEALER, the Revisor of Minnesota Statutes, who's office is responsible for keeping the official source of Minnesota Rules, provides a compilation of the provisions removed during the course of this rulemaking.]//

Pollution Control Agency

Proposed Permanent Rules Relating to Hazardous Waste

7001.0150 TERMS AND CONDITIONS OF PERMITS.

[For text of subpart 1, see M.R.]

Subp. 2. **Special conditions.** Each draft and final permit must contain conditions necessary for the permittee to achieve compliance with applicable Minnesota or federal statutes or rules, including each of the applicable requirements in parts 7045.0450 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390, and any conditions that the agency determines to be necessary to protect human health and the environment. If applicable to the circumstances, the conditions must include:

[For text of items A to D, see M.R.]

Subp. 3. **General conditions.** Unless specifically exempted by statute or rule, each draft and final permit must include the following general conditions and the agency shall incorporate these conditions into all permits either expressly or by specific reference to this part:

[For text of items A to O, see M.R.]

P. Compliance with ~~an~~ a RCRA permit during its term constitutes compliance, for purposes of enforcement, with subtitle C of RCRA except for those requirements not included in the permit which:

(1) become effective by statute;

(2) are adopted under ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, restricting the placement of hazardous wastes in or on the land; ~~or~~

(3) are adopted under parts 7045.0450 to 7045.0551 regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units. The

leak detection system requirements include double liners, construction quality assurance programs, monitoring, action leakage rates, and response action plans, and will be implemented through the procedures of part 7001.0730, minor permit modifications; or

(4) are adopted under parts 7045.0645, 7045.0647, and 7045.0648, limiting air emissions.

7001.0501 UNDERGROUND INJECTION.

References to underground injection of waste throughout this chapter are subject to Minnesota statutes and rules prohibiting the discharge of waste or pollutants to the saturated or unsaturated zones.

7001.0520 PERMIT REQUIREMENTS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Termination of eligibility for permit by rule.** The eligibility of an owner or operator of an elementary neutralization unit, a pretreatment unit, a wastewater treatment unit, or a combustion waste facility to be permitted under this part is subject to termination by the agency after notice and opportunity for a contested case hearing or a public informational meeting if the agency makes any of the findings set forth in items A to D. An owner or operator whose eligibility to be permitted under this part has been terminated shall apply for and obtain an individual permit under these parts. The following findings constitute justification for the commissioner to commence proceedings to terminate eligibility:

[For text of items A to C, see M.R.]

D. that under the circumstances, in order to protect human health or the environment, the permitted facility should be subject to the requirements of parts ~~7045.0452 to 7045.0544~~ 7045.0450 to 7045.0551.

Subp. 5. **Closure by removal.** Owners or operators of surface impoundments, land treatment units, and waste piles closing by removal or decontamination under parts 7045.0552 to ~~7045.0642~~ 7045.0651 must obtain a postclosure permit unless they can demonstrate to the agency that the closure met the requirements for closure by removal or decontamination in part 7045.0532, subpart 7; 7045.0534, subpart 7; or 7045.0536, subpart 8. The demonstration may be made in the following ways:

[For text of items A and B, see M.R.]

[For text of subps 6 and 7, see M.R.]

7001.0550 CONTENTS OF PART A OF APPLICATION.

Part A of the application must contain the following information:

[For text of items A to D, see M.R.]

E. a list of the waste designated under parts 7045.0102 to ~~7045.0143~~ 7045.0155 as hazardous to be treated, stored, or disposed of by the applicant and an estimate of the quantity of each hazardous waste to be treated, stored, or disposed of annually by the applicant;

[For text of items F to J, see M.R.]

7001.0560 GENERAL INFORMATION REQUIREMENTS FOR PART B OF APPLICATION.

Part B of the application must contain the following information:

[For text of item A, see M.R.]

B. Chemical and physical analyses of the hazardous wastes to be handled at the facility. At a minimum, these analyses must contain all the information that ~~is necessary~~ must be known to treat, store, or dispose of the wastes properly in accordance with parts 7045.0450 to 7045.0551.

[For text of items C and D, see M.R.]

E. A copy of the general inspection schedule required by part 7045.0452, subpart 5, item B, including, if applicable, the information in parts 7045.0526, subpart 5; 7045.0528, subpart 7; 7045.0532, subpart 5; 7045.0534, subparts 5 and 6; 7045.0536, subpart 4; 7045.0538, subpart 5; 7045.0539, subpart 3; and 7045.0542, subpart 7; and the process vent and equipment leak standards in Code of Federal Regulations, title 40, sections 264.1033, 264.1052, 264.1053, ~~and~~ 264.1058, as amended, and sections 264.1084, 264.1085, 264.1086, and 264.1088, as incorporated in part 7045.0540.

[For text of items F to U, see M.R.]

V. For land disposal facilities, if a case-by-case extension has been approved ~~under part 7045.0075, subpart 8~~ by the United States Environmental Protection Agency, under Code of Federal Regulations, title 40, section 268.5, or a petition has been granted under part 7045.0075, subpart 9, a copy of the notice of approval for the extension or petition is required.

7001.0570 PART B INFORMATION REQUIREMENTS FOR FACILITIES THAT STORE CONTAINERS OF HAZARDOUS WASTE.

Except as otherwise provided in part 7045.0526, subpart 1, if the applicant proposes to store containers of hazardous waste, the applicant shall furnish the following information in addition to the information required by part 7001.0560:

[For text of items A to F, see M.R.]

G. Information on air emission controls as required in part 7001.0635.

7001.0580 PART B INFORMATION REQUIREMENTS FOR STORAGE OR TREATMENT TANKS.

Except as otherwise provided in part 7045.0528, subpart 1, if the applicant proposes to use tanks to store or treat hazardous waste, the applicant shall furnish the following information, in writing, in addition to the information required by part 7001.0560:

[For text of items A to H, see M.R.]

I. description of controls and practices to prevent spills and overflows, as required under part 7045.0528, subpart 6, item B; ~~and~~

J. for tank systems in which ignitable, reactive, or incompatible wastes are to be stored or treated, a description of how operating procedures and tank system and facility design will achieve compliance with the requirements of part 7045.0528, subparts 10 and 11 ; and

K. information on air emission controls as required in part 7001.0635.

7001.0590 PART B INFORMATION REQUIREMENTS FOR SURFACE IMPOUNDMENTS.

Except as otherwise provided in part 7045.0532, subpart 1, if the applicant proposes to store, treat, or dispose of hazardous waste in surface impoundment facilities, the applicant shall submit detailed plans and specifications accompanied by an engineering report which collectively includes the following information in addition to the information required by part 7001.0560:

[For text of items A to J, see M.R.]

K. A waste management plan for hazardous waste F028 and treatment residues and soil contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how the surface impoundment is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0532, subpart 10. This plan must address the following items as specified in part 7045.0532, subpart 10:

[For text of subitems (1) to (4), see M.R.]

[For text of items L and M, see M.R.]

N. Information on air emission controls as required in part 7001.0635.

7001.0600 PART B INFORMATION REQUIREMENTS FOR WASTE PILES.

Except as otherwise provided by part 7045.0534, subpart 1, if the applicant proposes to store or treat hazardous waste in waste piles, the applicant shall furnish the information required by items A to M in addition to the information required by part 7001.0560:

[For text of items A to K, see M.R.]

L. A waste management plan for hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how a waste pile that is not enclosed is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0534, subpart 10. This submission must address the following items as specified in part 7045.0534, subpart 10:

[For text of subitems (1) to (4), see M.R.]

[For text of item M, see M.R.]

7001.0610 PART B INFORMATION REQUIREMENTS FOR LAND TREATMENT.

Except as otherwise provided by part 7045.0536, subpart 1, if the applicant proposes to use land treatment to dispose of hazardous waste, the applicant shall furnish the information designated in items A to I in addition to the information required by part 7001.0560:

[For text of items A to H, see M.R.]

I. A waste management plan for hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how a land treatment facility is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0536, subpart 11. This plan must address the following items as specified in part 7045.0536, subpart 11:

[For text of subitems (1) to (4), see M.R.]

7001.0620 PART B INFORMATION REQUIREMENTS FOR LANDFILLS.

Except as otherwise provided by part 7045.0538, subpart 1, if the applicant proposes to dispose of hazardous waste in a landfill, the applicant shall furnish the information designated in items A to L in addition to the information required by part 7001.0560:

[For text of items A to I, see M.R.]

J. A waste management plan for hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, describing how a landfill is or will be designed, constructed, operated, and maintained to meet the requirements of part 7045.0538, subpart 13. This plan must address the following items as specified in part 7045.0538, subpart 13:

[For text of subitems (1) to (4), see M.R.]

[For text of items K and L, see M.R.]

7001.0630 PART B INFORMATION AND SPECIAL PROCEDURAL REQUIREMENTS FOR THERMAL TREATMENT FACILITIES.

Except as provided in part 7045.0542, subpart 1, if the applicant proposes to treat or dispose of hazardous waste by using thermal treatment, the applicant shall fulfill the requirements of item A, B, or C in addition to the information requirements of part 7001.0560, and the commissioner shall fulfill the requirements of item D:

[For text of items A and B, see M.R.]

C. The applicant shall perform an analysis of each waste or mixture of waste to be treated by using the analytical techniques set forth in the Environmental Protection Agency document SW-846, as ~~referenced~~ incorporated in part 7045.0065, or by using

techniques found by the commissioner to be equivalent to them. The applicant shall submit all of the following information:

(1) The results of each waste analysis performed, including:

[For text of units (a) to (d), see M.R.]

(e) an approximate quantification of the hazardous constituents identified in the waste, within the precision specified by Environmental Protection Agency document SW-846, as incorporated in part 7045.0065;

[For text of units (f) and (g), see M.R.]

[For text of subitems (2) to (8), see M.R.]

[For text of item D, see M.R.]

7001.0635 SPECIFIC PART B INFORMATION REQUIREMENTS FOR AIR EMISSION CONTROLS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS.

Except as otherwise provided in part 7045.0450, owners and operators of tanks, surface impoundments, or containers that use air emission controls in accordance with the requirements of part 7045.0540 must provide the additional information described in items A to G.

A. Documentation for each floating roof cover installed on a tank subject to Code of Federal Regulations, title 40, section 264.1084(d)(1) or (d)(2), as incorporated in part 7045.0540, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the applicable design specifications under Code of Federal Regulations, title 40, section 264.1084(e)(1) or (f)(1), as incorporated in part 7045.0540.

B. Identification of each container area subject to the requirements of part 7045.0540 and certification by the owner or operator that the requirements of this part are met.

C. Documentation for each enclosure used to control air pollutant emissions from tanks or containers in accordance with the requirements of Code of Federal Regulations, title 40, section 264.1084(d)(5) or 264.1086(e)(1)(ii), as incorporated in part 7045.0540, that includes records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in "Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure" under Code of Federal Regulations, title 40, section 52.741, Appendix B, as amended.

D. Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of Code of Federal Regulations, title 40, section 264.1085(c), as incorporated in part 7045.0540, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications under Code of Federal Regulations, title 40, section 264.1085(c)(1), as incorporated in part 7045.0540.

E. Documentation for each closed-vent system and control device installed in accordance with the requirements of Code of Federal Regulations, title 40, section 264.1087, as incorporated in part 7045.0540, that includes design and performance information as specified in Code of Federal Regulations, title 40, section 270.24(c) and (d), as amended.

F. An emission monitoring plan for both Code of Federal Regulations, title 40, part 60, Appendix A, Method 21, as amended, and control device monitoring methods. This plan shall include the following information: monitoring points, monitoring methods

for control devices, monitoring frequency, procedures for documenting exceedances, and procedures for mitigating noncompliances.

G. The schedule of implementation required under Code of Federal Regulations, title 40, section 265.1082, as incorporated in part 7045.0645, when an owner or operator of a facility subject to part 7045.0645 cannot comply with part 7045.0540 by the date of permit issuance.

7001.0650 INTERIM STATUS.

Subpart 1. **Qualifying for interim status.** Except as provided in subpart 2, during the period after the submission of Part A of a hazardous waste facility permit application to the Environmental Protection Agency or to the commissioner and before a final determination by the agency on the permit application, the owner or operator of an existing hazardous waste facility or a facility in existence on the effective date of statutory or regulatory amendments under the Resource Conservation and Recovery Act that render the facility subject to the requirement to have a hazardous waste facility permit shall be considered to be in compliance with the requirement to obtain a permit if the commissioner finds that the Environmental Protection Agency has granted the owner or operator interim status or if the commissioner finds:

[For text of item A, see M.R.]

B. that the owner or operator is in compliance with parts 7045.0552 to ~~7045.0642~~ 7045.0651;

[For text of items C and D, see M.R.]

[For text of subps 2 and 3, see M.R.]

Subp. 4. **Prohibitions.** During the interim status period, an owner or operator shall not:

[For text of items A to C, see M.R.]

D. alter a hazardous waste facility in a manner that amounts to a reconstruction of the facility. For the purpose of this part, reconstruction occurs when the capital investment in the modification of the facility exceeds 50 percent of the capital cost of a comparable new hazardous waste facility. Reconstruction does not include changes made solely for the purpose of complying with the requirements of part 7045.0628, subpart 4, for tanks and ancillary equipment, or to treat or store in containers ~~or~~, tanks, or containment buildings hazardous wastes subject to the land disposal restrictions under ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004, if the changes are made solely to comply with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004.

Subp. 5. **Changes during interim status.** Except as provided in item F, an owner or operator who has interim status may conduct the activities prescribed in items A to F.

[For text of items A and B, see M.R.]

C. The owner or operator may add new processes or change the processes for the treatment, storage, or disposal of hazardous waste if, before implementation of the addition or change, the owner or operator submits a revised Part A of the permit application and an explanation of the need for the addition, and if the commissioner approves the addition or change in writing. The commissioner shall approve the addition or change if the commissioner finds that:

[For text of subitem (1), see M.R.]

(2) the addition or change is necessary for the owner or operator to comply with federal, Minnesota, or local requirements, including the interim status standards in parts 7045.0552 to ~~7045.0642~~ 7045.0651.

[For text of items D and E, see M.R.]

F. Except as specifically allowed under this item, changes listed under items A to E may not be made if they amount to reconstruction of the hazardous waste management

facility. Reconstruction occurs when the capital investment in the changes to the facility exceeds 50 percent of the capital cost of a comparable entirely new hazardous waste management facility. If all other requirements are met, the following changes may be made even if they amount to reconstruction:

[For text of subitems (1) to (5), see M.R.]

(6) changes to treat or store, in tanks ~~or~~, containers, or containment buildings, hazardous wastes subject to land disposal restrictions imposed by ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004, provided that ~~the~~ such changes are made solely for the purpose of complying with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004.

Subp. 6. **Compliance with interim status standards.** During the interim status period the owner or operator shall comply with the interim status standards in parts 7045.0552 to ~~7045.0642~~ 7045.0651.

Subp. 7. **Termination of interim status.** Interim status terminates automatically when the agency has taken final administrative action on the permit application or when terminated by Code of Federal Regulations, title 40, section 270.73(c) to (g), as amended. The following constitute justification for the commissioner to commence proceedings to terminate interim status:

[For text of item A, see M.R.]

B. the commissioner finds that the owner or operator is in violation of any of the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651.

7001.0690 EMERGENCY PERMITS.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Requirements.**The emergency permit must incorporate, to the extent possible under the circumstances, all applicable requirements of parts 7001.0500 to 7001.0730, ~~7045.0452 to 7045.0544~~ 7045.0450 to 7045.0551, 7045.0652, and 7045.0655.

[For text of subps 7 and 8, see M.R.]

7001.0700 HAZARDOUS WASTE THERMAL TREATMENT FACILITY PERMITS.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Trial burn plan.** An applicant shall submit to the commissioner a trial burn plan with Part B of the permit application. The trial burn plan must include the following information:

A. the results of an analysis of each waste or mixture of wastes to be burned, that uses the analytical techniques set forth in the United States Environmental Protection Agency document SW-846 as ~~referenced~~ incorporated in part 7045.0065 or that uses analytical techniques found by the commissioner to be equivalent to them. This analysis must include:

[For text of subitems (1) to (4), see M.R.]

(5) an approximate quantification of the hazardous constituents identified in the waste, within the precision specified by Environmental Protection Agency ~~document~~ publication SW-846, as incorporated in part 7045.0065;

[For text of items B to I, see M.R.]

[For text of subps 4 to 11, see M.R.]

7001.0710 LAND TREATMENT DEMONSTRATION PERMITS.

Subpart 1. **Letters of approval.** A person who desires to conduct controlled laboratory demonstrations of hazardous waste land treatment for the purpose of collecting preliminary data shall request a letter of approval from the agency.

The agency shall issue a letter of approval if the demonstration will be conducted under supervised conditions in a closed system capable of providing adequate protection to human health and the environment, and if the data obtained will not be used as the only basis for the issuance of a facility permit. The letter of approval must specify the general conditions for conducting demonstrations, the duration of approval, and the specific waste types.

The letter of approval may only provide approval for controlled laboratory demonstrations of hazardous waste treatment and does not provide exemptions from the hazardous waste management and disposal requirements of chapter 7045. Materials resulting from the demonstration that meet the criteria of parts 7045.0102 to ~~7045.0143~~ 7045.0155 must be managed as hazardous waste.

[For text of subps 2 to 6, see M.R.]

7001.0730 MODIFICATION OF PERMITS; REVOCATION AND REISSUANCE OF PERMITS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Minor modifications of permits.** In addition to the corrections or allowances listed in part 7001.0190, subparts 2 and 3, if the permittee consents, the commissioner may modify a permit to make the corrections or allowances listed below without following the procedures in parts 7001.0100 to 7001.0130:

[For text of items A to K, see M.R.]

L. to allow treatment of hazardous wastes not previously specified in the permit if the following conditions are met:

(1) the hazardous waste has been prohibited from one or more methods of land disposal under ~~parts 7045.1320 to 7045.1330~~ Code of Federal Regulations, title 40, sections 268.30 to 268.39, as incorporated in part 7045.1390, or RCRA section 3004;

(2) treatment is in accordance with ~~part 7045.1310~~ Code of Federal Regulations, title 40, section 268.4, as incorporated in part 7045.1390, if applicable, and ~~part 7045.1305~~ section 268.3, as incorporated in part 7045.1390, and applicable standards established under ~~parts 7045.1355 to 7045.1360 and part 7045.0075, subpart 10~~ Code of Federal Regulations, title 40, sections 268.41 to 268.49, and 268.5, as incorporated in part 7045.1390, or, where no treatment standards have been established, treatment renders the waste no longer subject to the applicable prohibitions of ~~part 7045.1330~~ Code of Federal Regulations, title 40, section 268.32, as incorporated in part 7045.1390, or RCRA section 3004;

[For text of subitems (3) and (4), see M.R.]

M. to allow permitted facilities to change their operations to treat or store hazardous wastes subject to land disposal restrictions imposed by ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004, provided the treatment or storage occurs in containers or tanks and the permittee:

(1) requests a major permit modification under subparts 1 to 3;

(2) demonstrates in the request for a major permit modification that the treatment or storage is necessary to comply with the land disposal restrictions of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 or RCRA section 3004; and

(3) ensures that the treatment or storage units comply with the applicable standards of parts 7045.0552 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390 pending final administrative disposition of the major modification request. The authorization to make the changes conferred in this item terminates upon final

administrative disposition of the permittee's major modification request under subparts 1 to 3 or termination of the permit under part 7001.0180.

[For text of subps 5 and 6, see M.R.]

7045.0020 DEFINITIONS.

[For text of subps 1 to 9a, see M.R.]

Subp. 9b. **Combustible liquid.** "Combustible liquid" has the meaning given in Code of Federal Regulations, title 49, section ~~173.115~~ 173.120, paragraph (b), as amended.

[For text of subps 9c to 11, see M.R.]

Subp. 11a. **Containment building.** "Containment building" means a hazardous waste management unit that is used to store or treat hazardous waste under the provisions of parts 7045.0550 and 7045.0649.

[For text of subps 12 to 22a, see M.R.]

Subp. 22b. **Excluded scrap metal.** "Excluded scrap metal" means processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal.

Subp. 22c. **Existing drip pad.** "Existing drip pad" means a drip pad that:

A. is or was used to manage hazardous waste with the waste code of F032 and was constructed, or for which the owner or operator had a design and had entered into binding financial or other agreements for construction, before December 6, 1990; or

B. is used to manage hazardous waste with the waste code of F034 or F035 and was constructed, or for which the owner or operator had a design and had entered into binding financial or other agreements for construction, before July 25, 1994.

Subp. ~~22c.~~ 22d. **Existing hazardous waste management facility or existing facility.** "Existing hazardous waste management facility" or "existing facility" means

a facility which was in operation or for which construction commenced on or before November 19, 1980. See subpart 10b for definition of "construction commenced."

[For text of subps 23 to 24a, see M.R.]

Subp. 24b. **Flammable liquid.** "Flammable liquid" has the meaning given in Code of Federal Regulations, title 49, section ~~173.115~~ 173.120, as amended.

[For text of subps 25 to 30, see M.R.]

Subp. 31. **Generator.**"Generator" means any person, by site, whose act or process produces hazardous waste identified or listed in parts 7045.0102 to ~~7045.0143~~ 7045.0155, or whose act first causes a hazardous waste to become subject to regulation. "Generator" means all size generators including large quantity generators, small quantity generators, and very small quantity generators, unless specifically stated otherwise.

[For text of subps 32 to 37, see M.R.]

Subp. 37a. **Home scrap metal.**"Home scrap metal" means scrap metal as generated by steel mills, foundries, and refineries, such as turnings, cuttings, punchings, and borings.

Subp. 37b. **Household.** "Household" has the meaning given in Minnesota Statutes, section 115A.96, subdivision 1, paragraph (a).

Subp. ~~37b.~~ 37c. **Household battery.** "Household battery" means a disposable or rechargeable dry cell, generated by a household and commonly used as a power source for household products. "Household battery" includes nickel-cadmium, alkaline, mercuric oxide, silver oxide, zinc oxide, zinc-air, lithium, and zinc-carbon batteries, but excludes lead-acid batteries.

Subp. ~~37c.~~ 37d. **Household hazardous waste.** "Household hazardous waste" has the meaning given in Minnesota Statutes, section 115A.96, subdivision 1, paragraph (b).

Subp. ~~37d.~~ 37e. **Household hazardous waste collection site or collection site.** "Household hazardous waste collection site" or "collection site" as used in part 7045.0310

has the meaning established under Minnesota Statutes, section 115A.96, subdivision 1, paragraph (c).

Subp. ~~37c.~~ 37f. **Household waste.** "Household waste" means any material including garbage, trash, and sanitary waste in septic tanks derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas.

[For text of subps 38 to 45, see M.R.]

Subp. 45a. [See repealer.]

[For text of subps 45b to 64a, see M.R.]

Subp. 65. **Partial closure.** "Partial closure" means the closure of a hazardous waste management unit in accordance with the applicable closure requirements of parts 7045.0450 to ~~7045.0642~~ 7045.0651 at a facility that contains other active hazardous waste management units. For example, partial closure may include the closure of a tank, including its associated piping and containment systems, a landfill cell, surface impoundment, waste pile, or other hazardous waste management unit, while other units of the same facility continue to operate.

[For text of subps 66 to 69, see M.R.]

Subp. 70. **Pile.** "Pile" means any noncontainerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage and that is not a containment building.

[For text of subps 70a to 71, see M.R.]

Subp. 71a. **Polychlorinated biphenyls, PCB, or PCB's.** "Polychlorinated biphenyls," "PCB," or "PCB's" ~~are halogenated organic compounds defined~~ have the meaning given "PCB" in ~~accordance with Code of Federal Regulations, title 40, section 761.3, as amended~~ Minnesota Statutes, section 116.36, subdivision 4.

Subp. 72. **Pretreatment unit.** "Pretreatment unit" means a device which:

[For text of item A, see M.R.]

B. receives and treats or stores an influent wastewater which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; and

C. meets the definition of "tank" as defined in subpart 90.

[For text of subp 72a, see M.R.]

Subp. 72b. **Processed scrap metal.** "Processed scrap metal" means scrap metal that has been manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes, but is not limited to, scrap metal that has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted) and fines, drosses, and related materials that have been agglomerated. Shredded circuit boards being sent for recycling are not processed scrap metal. When recycled, shredded circuit boards are governed by part 7045.0125, subpart 4, item P.

Subp. 72c. **Prompt scrap metal.** "Prompt scrap metal" means scrap metal as generated by the metal working or fabrication industries and includes such scrap metal as turnings, cuttings, punchings, and borings. Prompt scrap metal is also known as industrial or new scrap metal.

[For text of subps 73 to 84, see M.R.]

Subp. 84a. **Sorbent or sorb.** "Sorbent" means a material that is used to soak up free liquids by either adsorption or absorption, or both. "Sorb" means to either adsorb or absorb, or both.

Subp. 84b. **Speculative accumulation.** "Speculative accumulation" means accumulation of a hazardous waste before it is recycled. Speculative accumulation does not include accumulation of a waste if there is a feasible method of recycling for the waste and at least 75 percent by volume or weight of the waste is recycled during a calendar year. The 75 percent requirement applies to each waste of the same type that is recycled in the same way.

Subp. ~~84b.~~ 84c. **Spent material.** "Spent material" means a material that has been used and as a result of contamination can no longer serve the purpose for which it was produced without processing.

[For text of subps 85 to 98a, see M.R.]

Subp. 98b. **Underlying hazardous constituent.** "Underlying hazardous constituent" means any constituent listed in Code of Federal Regulations, title 40, section 268.48, Table UTS - Universal Treatment Standards, as incorporated in part 7045.1390, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards.

Subp. 98c. **Unfit for use tank system.** "Unfit for use tank system" means a tank system that has been determined through an integrity assessment or other inspection to be no longer capable of storing or treating hazardous waste without posing a threat of release of hazardous waste to the environment.

Subp. ~~98c.~~ 98d. **Universal waste.** "Universal waste" has the meaning given at Code of Federal Regulations, title 40, section 273.9.

Subp. ~~98d.~~ 98e. **Universal waste handler.** "Universal waste handler" has the meaning given at Code of Federal Regulations, title 40, section 273.9.

Subp. ~~98c.~~ 98f. **Universal waste transporter.** "Universal waste transporter" has the meaning given at Code of Federal Regulations, title 40, section 273.9.

[For text of subps 99 to 102b, see M.R.]

Subp. 102c. **Wastewater.** "Wastewater" means waste that contains less than one percent by weight total organic carbon (TOC) and less than one percent by weight total suspended solids (TSS), with the following exceptions:

A. F001, F002, F003, F004, or F005 wastewaters are solvent-water mixtures that contain less than one percent by weight total organic carbon or less than one percent by weight total F001, F002, F003, F004, or F005 solvent constituents listed in ~~part 7045.1355~~ Code of Federal Regulations, title 40, section 268.40, as incorporated in part 7045.1390;

[For text of items B and C, see M.R.]

Subp. 103. **Wastewater treatment unit.** "Wastewater treatment unit" means a device which:

[For text of item A, see M.R.]

B. receives and treats or stores an influent wastewater which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or generates and accumulates a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; or treats or stores a wastewater treatment sludge which is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155; and

[For text of item C, see M.R.]

[For text of subps 104 to 109, see M.R.]

7045.0065 INCORPORATION AND AVAILABILITY OF REFERENCES.

The documents referred to in this ~~chapter may be obtained by contacting the appropriate offices as listed in this part.~~ part are incorporated by reference. The documents

are not subject to frequent change, unless otherwise noted, and are available online or through the Minitex interlibrary loan system, unless otherwise noted:

~~A. standards of the American Society for Testing and Materials, in the Annual Book of ASTM Standards, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, available at the Engineering Library of the University of Minnesota;~~

~~B. Minnesota Uniform Fire Code, as incorporated by reference in part 7510.3510;~~

~~C.~~ A. the implicit price deflator for gross ~~national~~ domestic product ~~in~~ from the ~~Survey of Current Business,~~ Bureau of Economic Analysis, United States Department of Commerce~~, 110 4th Street South, Minneapolis, Minnesota 55401, available at the Saint Paul Public Library~~. This document is subject to frequent change and is readily available at the Bureau of Economic Analysis Web site: www.bea.gov;

~~D. The Manual on Disposal of Refinery Wastes, volume 1, issued by the American Petroleum Institute, (Washington, D.C., 1969), available at the state of Minnesota Law Library;~~

~~E. Methods for Chemical Analysis of Water and Wastes, publication number 600/4-79-020, March 1979, issued by the Environmental Monitoring and Support Laboratory, 26 West St. Clair, Cincinnati, Ohio 45268, available at the state of Minnesota Law Library;~~

~~F. Standard TM-01-69 of the National Association of Corrosion Engineers, P.O. Box 218340, Houston, Texas 77218, available at the state of Minnesota Law Library;~~

~~G. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, publication number SW 846 (Second Edition, 1982, as amended by Update I, April 1984, and Update II, April 1985) of the Office of Solid Waste, United States Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460. The Second Edition~~

~~of SW-846 and Updates I and II available at the Minnesota Law Library and from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161, (703) 487-4600 as Document number PB 87-120-291;~~

~~H.~~ B. the most recent edition of the Uniform Customs and Practice for Documentary Credits ~~(Publication 290), 1975:~~, published by the International Chamber of Commerce ~~Publishing Corporation, Incorporated, 156 5th Avenue, Suite 820, New York, New York 10017~~; ~~and~~

~~I.~~ C. Standard Industrial Classification Manual issued by the Office of Management and Budget, Executive Office of the President of the United States~~, available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161~~ (1987); and

D. the documents found in Code of Federal Regulations, title 40, section 260.11, as amended.

7045.0071 UNDERGROUND INJECTION.

References to underground injection of waste throughout this chapter are subject to Minnesota statutes and rules prohibiting the discharge of waste or pollutants to the saturated or unsaturated zones.

7045.0075 PETITIONS.

Subpart 1. **Petitions for equivalent testing or analytical methods.** Any person seeking to use a testing or analytical method other than those described in parts 7045.0102 to ~~7045.0143,~~ 7045.0155 or 7045.0450 to ~~7045.0642~~ 7045.0651 may petition under these provisions. The person must demonstrate to the satisfaction of the commissioner that the proposed method is equal to or superior to the corresponding method prescribed in parts 7045.0102 to ~~7045.0143,~~ 7045.0155 or 7045.0450 to ~~7045.0642~~ 7045.0651 in terms of its sensitivity, accuracy, precision, and reproducibility. Each petition must include:

[For text of items A to D, see M.R.]

E. comparative results obtained from using the proposed method with those obtained from using the relevant or corresponding methods prescribed in parts ~~7045.0100~~ 7045.0102 to ~~7045.0143,~~ 7045.0155 or 7045.0450 to ~~7045.0642~~ 7045.0651;

[For text of items F and G, see M.R.]

Subp. 2. **Petitions to exclude a waste produced at a particular facility.** Petitions to exclude a waste produced at a particular facility are as follows:

[For text of items A to D, see M.R.]

E. If the waste is listed with code "T" in part 7045.0135, subitems (1) to (4) apply.

(1) The petitioner must demonstrate that the waste:

(a) does not contain the constituent or constituents in part 7045.0141 that caused the agency to list the waste, using the appropriate test methods prescribed in ~~Code of Federal Regulations, title 40, part 261, appendix III, as amended~~ "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0065, item D; or

[For text of unit (b), see M.R.]

[For text of subitems (2) to (4), see M.R.]

[For text of items F to H, see M.R.]

Subp. 3. **Petition for reduced regulation of hazardous waste being speculatively accumulated or reclaimed prior to use.** The agency may, upon presentation of a petition for those purposes, reduce any of the requirements of chapter 7045 applicable to reclamation, reuse, or recycling. The agency shall apply the standards and criteria set forth

below in determining whether to grant a petition to reduce the regulatory requirements for the following recycled hazardous wastes.

[For text of item A, see M.R.]

B. Any person seeking a reduction in regulation of hazardous wastes that are reclaimed and then reused as feedstock within the original ~~primary~~ production process in which the hazardous wastes were generated if the reclamation is an essential part of the production process may petition under these provisions. The agency's decision regarding the petition shall be based on the following standards and criteria:

[For text of subitems (1) to (8), see M.R.]

[For text of item C, see M.R.]

[For text of subp 4, see M.R.]

Subp. 5. **Petition for use of alternate manifest.** A person who meets the criteria in item A may submit a petition to the commissioner for approval of the use of an alternate manifest system as described in item B. The criteria the commissioner shall use in determining whether to approve the use of the alternate manifest system are provided in item C.

[For text of item A, see M.R.]

B. Upon approval, an alternate manifest system may be used in lieu of the manifest system described in parts 7045.0261 ~~to~~ and 7045.0265. The commissioner shall only approve alternate manifest systems meeting the following criteria:

(1) The alternate manifest system must include a manifest form to be used by the generator to notify the commissioner each time waste is transported under this subpart. The manifest form must include: a space for the generator's name, mailing address, telephone number, and identification number; a space for the transporter's name and identification number; a space for the name, address, telephone number, and

identification number of the recycling facility; a space for the United States Department of Transportation shipping name, hazard class, ~~and~~ identification number, and packing group of the waste as specified in the United States Department of Transportation Code, title 49, parts 171 to ~~179~~ 199; a space for the number and type of containers and total volume of the waste being shipped; a space for the waste identification number as specified in part 7045.0131, 7045.0135, or 7045.0137; a space for the signature of the generator or the generator's authorized representative affirming the correctness of the information; the mailing address of the commissioner; and a statement advising the generator to complete the form and submit it to the commissioner within five working days of transporting waste.

[For text of subitems (2) and (3), see M.R.]

[For text of item C, see M.R.]

[For text of subps 6 and 7, see M.R.]

Subp. 8. [See repealer.]

Subp. 9. **Petitions to allow land disposal of a prohibited waste.** A person seeking an exemption from a prohibition for the disposal of a restricted hazardous waste in a particular unit or units must submit a petition to the agency and to the EPA demonstrating, to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous. The demonstration to the EPA must include the provisions in Code of Federal Regulations, title 40, section 268.6. The demonstration to the agency must include an identification of the specific waste and the specific unit for which the demonstration will be made, a waste analysis to describe fully the chemical and physical characteristics of the subject waste, and a comprehensive characterization of the disposal unit site including an analysis of background air, soil, and water quality. The demonstration must also include a monitoring plan that detects migration at the earliest practicable time, and sufficient information to assure the commissioner that the owner or operator of a land disposal unit

receiving restricted wastes will comply with other applicable federal, state, and local laws. The person seeking the exemption must also comply with items A to L.

[For text of items A to C, see M.R.]

D. If the owner or operator determines that there is migration of hazardous constituents from the unit, the owner or operator must immediately suspend receipt of prohibited waste at the unit and notify the commissioner in writing within ten days of the determination that a release has occurred. Within 60 days of receiving the notification, the commissioner shall determine whether the owner or operator can continue to receive prohibited waste in the unit and whether the variance is to be revoked. The commissioner shall also determine whether further examination of any migration is warranted under applicable provisions of parts 7045.0450 to ~~7045.0642~~ 7045.0651.

[For text of items E to I, see M.R.]

J. Before the agency's decision, the applicant must comply with all restrictions on land disposal under ~~parts 7045.1300 to 7045.1380~~ part 7045.1390 when the effective date for the waste has been reached.

[For text of items K and L, see M.R.]

Subp. 10. [See repealer.]

[For text of subps 11 and 12, see M.R.]

7045.0090 ADOPTION AND INCORPORATION BY REFERENCE.

Subpart 1. **Applicability.** Except as specified in subparts 2 and 3, the terms and standards identified in subparts 1a to ~~1c~~ 1h apply whenever federal regulations are ~~adopted or~~ incorporated by reference in this chapter whether or not this part is specifically referenced. Terms used in incorporated Code of Federal Regulations, title 40, and defined in part 7045.0020 or in Minnesota Statutes have the meaning given in part 7045.0020 or in Minnesota Statutes.

Subp. 1a. ~~**General**~~ **Specific terms.** ~~Terms defined in Minnesota Rules and Minnesota Statutes that are also defined in Code of Federal Regulations, title 40,~~ The following terms and phrases have the meaning given ~~in part 7045.0020 and the applicable Minnesota statute~~.

A. "EPA" and "agency" mean the Pollution Control Agency ~~and its commissioner~~.

~~B. "Generator" has the meaning given in part 7045.0020.~~

~~C. "Hazardous waste" has the meaning given in part 7045.0020.~~

~~D.~~ B. "Regional administrator," "administrator," and "director" mean the commissioner of the Pollution Control Agency.

~~E.~~ C. "State," "authorized state," "approved state," or "approved program" means Minnesota.

~~F. "Waste" has the meaning given in part 7045.0020.~~

D. "Generator," "hazardous waste," and "waste" have the meanings given in part 7045.0020.

Subp. 1b. **Hazardous waste management system general standards; Code of Federal Regulations, title 40, part 260.** References to the petition processes established in ~~"~~Code of Federal Regulations, title 40, part 260, subpart C,~~" or "Code of Federal Regulations, title 40,~~ or Code of Federal Regulations, title 40, sections 260.20 to 260.41,~~"~~ mean the petition processes established in part 7045.0075.

Subp. 1c. **Identification and listing standards; Code of Federal Regulations, title 40, part 261.**

A. References to any section in ~~"~~Code of Federal Regulations, title 40, part 261, ~~subpart C," "~~ subparts A to C, or to Code of Federal Regulations, title 40, sections ~~261.20~~

261.1 to 261.24,~~" or "characteristic hazardous waste"~~ mean ~~the characteristics established in part~~ parts 7045.0102 to 7045.0131 or part 7045.0214, subpart 3.

B. References to ~~"~~Code of Federal Regulations, title 40, section 261.4,~~"~~ mean the exclusions listed in part 7045.0120.

C. References to ~~"~~Code of Federal Regulations, title 40, section 261.6,~~"~~ mean the use, reuse, recycling, and reclamation requirements of part 7045.0125.

D. References to any section in Code of Federal Regulations, title 40, part 261, subpart D, or to Code of Federal Regulations, title 40, sections 261.30 to 261.38, mean parts 7045.0135 to 7045.0145.

Subp. 1d. **Standards applicable to generators of hazardous waste, Code of Federal Regulations, title 40, part 262.** References to Code of Federal Regulations, title 40, part 262, or to any section in Code of Federal Regulations, title 40, sections 262.10 to 262.70, mean parts 7045.0205 to 7045.0325.

Subp. 1e. **Standards applicable to transporters of hazardous waste, Code of Federal Regulations, title 40, part 263.** References to any section in Code of Federal Regulations, title 40, sections 263.10 to 263.31, mean parts 7045.0351 to 7045.0397.

Subp. ~~1d~~ 1f. **Permitted and interim status standards for owners and operators of hazardous waste treatment, storage, and disposal facilities; Code of Federal Regulations, title 40, parts 264 and 265.**

A. References to ~~"~~Code of Federal Regulations, title 40, part 264, subpart F,~~"~~ ~~"Code~~ Code of Federal Regulations, title 40, sections 264.90 to 264.101,~~" "Code~~ Code of Federal Regulations, title 40, part 265, subpart F,~~"~~ or ~~"~~Code of Federal Regulations, title 40, sections 265.90 to 265.94,~~"~~ mean the requirements of parts 7045.0484, 7045.0485, 7045.0590, and 7045.0592 relating to groundwater protection, monitoring, and corrective action for releases.

B. References to ~~"~~Code of Federal Regulations, title 40, part 264, subpart H,~~"~~ ~~"Code~~ Code of Federal Regulations, title 40, sections 264.140 to 264.151,~~" "Code~~ Code of Federal Regulations, title 40, part 265, subpart H,~~"~~ or ~~"~~Code of Federal Regulations, title 40, sections 265.140 to 265.150,~~"~~ mean the financial assurance requirements of parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624.

C. References to ~~"~~Code of Federal Regulations, title 40, part 264, subpart O,~~"~~ ~~"Code~~ Code of Federal Regulations, title 40, sections 264.340 to 264.351,~~" "Code~~ Code of Federal Regulations, title 40, part 265, subpart O,~~"~~ or ~~"~~Code of Federal Regulations, title 40, sections 265.340 to 265.352,~~"~~ mean the thermal treatment standards of parts 7045.0542 and 7045.0640.

D. References to ~~"~~Code of Federal Regulations, title 40, part 264, subpart N,~~"~~ ~~"Code~~ Code of Federal Regulations, title 40, sections 264.300 to 264.317,~~" "Code~~ Code of Federal Regulations, title 40, part 265, subpart N,~~"~~ or ~~"~~Code of Federal Regulations, title 40, sections 265.300 to 265.316,~~"~~ mean the landfill standards of parts 7045.0538 and 7045.0638.

Subp. ~~1c~~ 1g. **Permit requirements; Code of Federal Regulations, title 40, part 270.** References to ~~"~~Code of Federal Regulations, title 40, part 270, subparts A to H,~~"~~ ~~"Code~~ Code of Federal Regulations, title 40, sections 270.1 to 270.230,~~"~~ or any other reference to a hazardous waste facility permit mean the hazardous waste facility permit requirements in parts 7001.0500 to 7001.0730.

Subp. 1h. **Other standards.**

A. References to Code of Federal Regulations, title 40, part 273, mean part 7045.1400 (universal waste).

B. References to Code of Federal Regulations, title 40, part 279, mean parts 7045.0692 to 7045.0990 (used oil).

C. References to underground injection of waste in any Code of Federal Regulations incorporated in this chapter are subject to Minnesota Statutes and rules prohibiting the discharge of waste or pollutants to the saturated or unsaturated zones.

D. References to Code of Federal Regulations, title 40, part 266, subpart C, mean part 7045.0665 (uses constituting disposal).

E. References to Code of Federal Regulations, title 40, part 266, subpart F, mean part 7045.0675 (precious metal recovery).

F. References to Code of Federal Regulations, title 40, part 266, subpart G, mean part 7045.0685 (spent lead-acid batteries being reclaimed).

[For text of subps 2 and 3, see M.R.]

Subp. 4. **Applicable law.** When federal regulations incorporated into this chapter cite additional federal regulations and when this chapter does not address whether the cited federal regulations or corresponding state rules apply, state rules shall apply.

7045.0102 MIXTURES OF WASTES.

Subpart 1. **Scope.** Except as provided in part 7045.0665, subpart 1, mixtures of wastes are ~~listed in subparts 2 and 3~~ identified in subpart 2.

Subp. 2. **Mixtures of hazardous and nonhazardous wastes.** The mixing of a hazardous waste with a nonhazardous waste as described in this subpart constitutes treatment. Generators who mix hazardous and nonhazardous wastes on site must meet the requirements of part 7045.0211 for generators with on-site facilities. Mixtures excluded under part 7045.0075, subpart 2, are excluded from regulation. Wastes excluded under this subpart are subject to part 7045.1390, even if they no longer exhibit a characteristic at the point of land disposal.

A. A mixture is a hazardous waste if it ~~is a mixture of nonhazardous waste and any waste which is hazardous solely because it exhibits the characteristic of ignitability,~~

~~corrosivity, oxidativity, or reactivity as described in part 7045.0131, unless the resulting mixture does not exhibit any of the characteristics of hazardous waste as defined in part 7045.0131~~ contains a waste that is hazardous solely because it exhibits any of the characteristics of ignitability, corrosivity, oxidativity, or reactivity identified in part 7045.0131, or contains a hazardous waste listed in part 7045.0135 solely because of ignitability, corrosivity, or reactivity, and the resulting mixture exhibits any characteristic of a hazardous waste identified in part 7045.0131.

B. Except as provided in item D or E, a mixture is a hazardous waste if it ~~is a mixture of nonhazardous waste and any waste listed in part 7045.0135 solely because of ignitability, corrosivity, or reactivity, unless:~~ contains a waste listed for toxicity in part 7045.0135.

~~(1) the resulting mixture does not exhibit any of the characteristics of hazardous waste as defined in part 7045.0131;~~

~~(2) the resulting mixture has been excluded from regulation pursuant to part 7045.0075, subpart 2; or~~

~~(3) the nonhazardous waste is exempt from regulation under part 7045.0120, item I, and the resultant mixture no longer exhibits any characteristic of hazardous waste as defined in part 7045.0131 for which the hazardous waste listed in part 7045.0135 was listed.~~

C. Except as provided in item D, a mixture is a hazardous waste if it ~~is a nonsewered mixture of nonhazardous waste and any waste listed in part 7045.0135 (other than wastes listed solely because of ignitability, corrosivity, or reactivity) or any waste which is hazardous because it exhibits the characteristics of toxicity or lethality as identified in part 7045.0131 unless the resulting mixture has been excluded from regulation pursuant to part 7045.0075, subpart 2~~ contains a waste that exhibits the characteristic of toxicity or lethality identified in part 7045.0131.

D. A mixture is a hazardous waste if it is a sewered mixture of nonhazardous waste and any waste which is hazardous because it exhibits the characteristics of toxicity or lethality as defined in part 7045.0131 unless:

(1) prior to entering the sewer the resulting mixture no longer exhibits the characteristic of toxicity or lethality; and

(2) the sewering of the mixture has been approved by the agency pursuant to parts 7045.0221 to 7045.0255.

This provision does not apply to those mixtures defined as nonhazardous under item ~~F~~ E.

~~E. Except as provided in item F, a mixture is a hazardous waste if it is a sewered mixture of nonhazardous waste and any waste listed in part 7045.0135 (other than wastes listed solely because of ignitability, corrosivity, or reactivity) unless the resulting mixture has been excluded from regulation under part 7045.0075, subpart 2.~~

~~F.~~ E. ~~Except as otherwise provided in item A, B, or D, the following sewered mixtures of nonhazardous wastes and hazardous wastes listed in part 7045.0135~~ Except as otherwise provided in item A, B, or D, the following sewered mixtures are not hazardous wastes if the generator can demonstrate that the mixture consists of wastewater, the discharge of which is subject to regulation under ~~the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1317(b) or 1342, as amended~~ either section 307(b) or 402 of the Clean Water Act, including wastewater at facilities which have eliminated the discharge of wastewater; and

(1) one or more of the following spent solvents listed in part 7045.0135, subpart 1a, item B: carbon tetrachloride, tetrachloroethylene, trichloroethylene; provided that the solvents are discharged into the wastewater stream as a result of normal manufacturing operations and provided further that the maximum total weekly usage of these solvents, other than the amounts that can be demonstrated not to be discharged to

wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed one part per million;

(2) one or more of the following spent solvents listed in part 7045.0135, subpart 1a, item B: methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents; provided that the solvents are discharged into the wastewater stream as a result of normal manufacturing operations and provided further that the maximum total weekly usage of these solvents, other than the amounts that can be demonstrated not to be discharged to wastewater, divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million;

(3) heat exchanger bundle cleaning sludge from the petroleum refining industry, EPA Hazardous Waste No. K050 as listed in part 7045.0135, subpart 1a, item C;

(4) a discarded commercial chemical product, or chemical intermediate listed in part 7045.0135, subpart 1a, item D, arising from de minimis losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. De minimis losses include those from normal material handling operations (such as spills from the unloading or transfer of materials from bins or other containers or leaks from pipes, valves, or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and ~~rinsing~~ rinsate from empty containers or from containers that are rendered empty by that rinsing; ~~or~~

(5) wastewater resulting from laboratory operations containing toxic wastes listed in part 7045.0135, provided that the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pretreatment system, or provided the waste's combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pretreatment facility. Toxic wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation;

(6) one or more of the following wastes listed in part 7045.0135, subpart 1a, item C: wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157), provided that the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine, including all amounts that can not be demonstrated to be reacted in the process, destroyed through treatment, or is recovered (i.e., what is discharged or volatilized), divided by the average weekly flow of process wastewater prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of five parts per million by weight; or

(7) wastewaters derived from the treatment of one or more of the following wastes listed in part 7045.0135, subpart 1a, item C: organic waste, including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates, from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156), provided that the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of five milligrams per liter.

~~G.~~ For the purpose of this ~~part~~ item, headworks refers to the influent plumbing of a privately owned national pollutant discharge elimination system, state disposal system,

or pretreatment facility or to the facility's point of discharge to a municipal collection system when the treatment facility is a publicly owned wastewater treatment facility.

F. A mixture of used oil and a hazardous waste is a hazardous waste except as provided in part 7045.0800.

~~H.~~ G. Any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under part 7045.0120, subpart 1, item I, and any other waste exhibiting a characteristic of hazardous waste under part 7045.0131 is a hazardous waste only if:

[For text of subitems (1) and (2), see M.R.]

[For text of subp 3, see M.R.]

7045.0120 EXEMPTIONS AND SPECIAL REQUIREMENTS.

Subpart 1. **Exempt types of waste.** The following waste may be stored, labeled, transported, treated, processed, and disposed of without complying with the requirements of this chapter:

[For text of items A to H, see M.R.]

I. waste from the extraction, beneficiation, and processing of ores and minerals, including coal, ~~and including~~ phosphate rock, and overburden from the mining of uranium ore. For purposes of this item, beneficiation of ores and minerals is restricted to the following activities: crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining to remove water or carbon dioxide; roasting, autoclaving, or chlorination in preparation for leaching (except where the roasting, autoclaving, or chlorination/leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing); gravity concentration; magnetic separation; electrostatic separation; flotation; ion exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat,

tank, and in situ leaching. For the purposes of this item, waste from the processing of ores and minerals includes only the following wastes as generated:

(1) slag from primary copper processing;

(2) slag from primary lead processing;

(3) red and brown muds from bauxite refining;

(4) phosphogypsum from phosphoric acid production;

~~(2)~~ (5) slag from elemental phosphorus production;

~~(3)~~ (6) gasifier ash from coal gasification;

~~(4)~~ (7) process wastewater from coal gasification;

(8) calcium sulfate wastewater treatment plant sludge from primary copper processing;

~~(5)~~ (9) slag tailings from primary copper processing;

~~(6)~~ (10) fluorogypsum from hydrofluoric acid production;

(11) process wastewater from hydrofluoric acid production;

(12) air pollution control dust or sludge from iron blast furnaces;

~~(7)~~ (13) iron blast furnace slag;

~~(8)~~ (14) treated residue from the roasting/leaching of chrome ore; ~~and~~

(15) process wastewater from primary magnesium processing by the anhydrous process;

(16) process wastewater from phosphoric acid production;

(17) basic oxygen furnace and open hearth furnace air pollution control dust or sludge from carbon steel production;

~~(9)~~ (18) basic oxygen furnace and open hearth furnace slag from carbon steel production;

(19) chloride process waste solids from titanium tetrachloride production; and

(20) slag from primary zinc processing.

A residue derived from coprocessing mineral processing secondary materials with normal beneficiation raw materials or with normal mineral processing raw materials remains excluded under this subpart if the owner or operator processes at least 50 percent by weight normal beneficiation raw materials or normal mineral processing raw materials and legitimately reclaims the secondary mineral processing materials;

[For text of items J to S, see M.R.]

T. spent wood preserving solutions that have been reclaimed and reused for their original intended purpose, and wastewaters from the wood preserving process that have been reclaimed and are reused to treat wood~~;~~ if, prior to reuse, the wood preserving wastewaters and spent wood preserving solutions described in this item meet all of the following conditions:

(1) the wood preserving wastewaters and spent wood preserving solutions are reused on site at waterborne plants in the production process for their original intended purpose;

(2) prior to reuse, the wood preserving wastewaters and spent wood preserving solutions are managed to prevent release to land resources or waters of the state;

(3) any unit used to manage wood preserving wastewaters or spent wood preserving solutions prior to reuse can be visually or otherwise determined to prevent such releases;

(4) any drip pad used to manage the wood preserving wastewaters or spent wood preserving solutions prior to reuse complies with the standards governing drip pads in part 7045.0644; and

(5) prior to operating pursuant to this exclusion, the plant owner or operator submits to the commissioner a onetime notification stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: "I have read the applicable regulation establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation." The plant must maintain a copy of that document in its on-site records until closure of the facility. The exclusion applies only so long as the plant meets all of the conditions. If the plant goes out of compliance with any condition, the plant owner or operator may apply to the commissioner for reinstatement. Reinstatement is conditioned on the commissioner finding that the plant has returned to compliance with all conditions and that violations are not likely to recur;

[For text of item U, see M.R.]

V. used oil rerefining distillation bottoms that are used as feedstock to manufacture asphalt products; ~~or~~

W. sorbents, soil, and debris contaminated with petroleum fuel from spills and emergencies that are contained and reported in accordance with Minnesota Statutes, section 115.061, except for used oil spills and emergencies~~.~~; or

X. spent materials, other than hazardous wastes listed in part 7045.0135, generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered by mineral processing or by beneficiation, provided that:

(1) the spent material is legitimately recycled to recover minerals, acids, cyanide, water, or other values;

(2) the spent material is not accumulated speculatively;

(3) except as provided in subitem (4), the spent material is stored in tanks, containers, or buildings meeting the following minimum integrity standards: a building must be an engineered structure with a floor, walls, and a roof, all of which are made of nonearthen materials providing structural support (except smelter buildings may have partially earthen floors provided the spent material is stored on the nonearthen portion), and have a roof suitable for diverting rainwater away from the foundation; a tank must be freestanding, not be a surface impoundment, and be manufactured of a material suitable for containment of its contents; a container must be freestanding and be manufactured of a material suitable for containment of its contents. If tanks or containers contain any particulate that may be subject to wind dispersal, the owner or operator must operate these units in a manner that controls fugitive dust. Tanks, containers, and buildings must be designed, constructed, and operated to prevent releases to the environment of these materials;

(4) the commissioner may make a site-specific determination, upon application by the owner or operator and after public review and comment, that only solid mineral processing spent material may be placed on pads rather than in tanks, containers, or buildings. Solid mineral processing spent materials must not contain any free liquid. The commissioner must affirm that pads are designed, constructed, and operated to prevent releases of the spent material into the environment. Pads must provide the same degree of containment afforded by the tanks, containers, and buildings eligible for exclusion in subitem (3):

(a) the commissioner must also consider if storage on pads poses the potential for releases via groundwater, surface water, and air exposure pathways. Factors

to be considered for assessing the groundwater, surface water, and air exposure pathways are the volume and physical and chemical properties of the spent material, including its potential for migration off the pad; the potential for human or environmental exposure to hazardous constituents migrating from the pad via each exposure pathway; and the possibility and extent of harm to human and environmental receptors via each exposure pathway;

(b) pads must meet the following minimum standards: be designed of nonearthen material that is compatible with the chemical nature of the mineral processing spent material, be capable of withstanding physical stresses associated with placement and removal, have run-on/runoff controls, be operated in a manner that controls fugitive dust, and have integrity assurance through inspections and maintenance programs; and

(c) before making a determination under this subitem, the commissioner must provide notice and the opportunity for comment to all persons potentially interested in the determination in accordance with part 7001.0100, subpart 5;

(5) the owner or operator provides a notice to the commissioner, providing the following information: the types of materials to be recycled, the type and location of the storage units and recycling processes, and the annual quantities expected to be placed in land-based units. This notification must be updated when there is a change in the type of materials recycled or the location of the recycling process; and

(6) for purposes of this item, mineral processing spent materials must be the result of mineral processing and may not include any listed hazardous wastes. Listed hazardous wastes and characteristic hazardous wastes generated by nonmineral processing industries are not eligible for the exemption in this item.

Subp. 2. **Special requirements.** The following waste is exempt from the general requirements of this chapter if managed as specified:

A. waste collected as a result of a household hazardous waste management program under part 7045.0310;

B. spent or waste household batteries collected under part 7045.0686;

C. waste collected as a result of a very small quantity generator hazardous waste collection program under part 7045.0320;

D. feedstocks and by-products under part 7045.0125, subparts 5 and 6;

E. comparable fuels or comparable syngas fuels that meet the specifications and other requirements of Code of Federal Regulations, title 40, section 261.38, as amended, which is adopted and incorporated by reference; ~~and~~

F. universal waste managed under part 7045.1400~~.~~; and

G. hazardous waste containing radioactive waste when it meets the eligibility criteria and conditions of Code of Federal Regulations, title 40, part 266, subpart N, Conditional Exemption for Low-Level Mixed Waste Storage, Treatment, Transportation and Disposal, as amended. This exemption also pertains to:

(1) any mixture of a waste and an eligible radioactive mixed waste; and

(2) any waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

Waste exempted under this item must meet the eligibility criteria and specified conditions in Code of Federal Regulations, title 40, sections 266.225 and 266.230 (for storage and treatment), as amended, and 266.310 and 266.315 (for transportation and disposal), as amended. Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

7045.0121 TREATABILITY STUDY EXEMPTIONS.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Facilities and sample handling.** A mobile treatment unit may qualify as a laboratory or testing facility subject to requirements of this subpart. Where a group of mobile treatment units are located at the same site, the limitations specified in this subpart apply to the entire group of mobile treatment units involved in treatability studies collectively as if the group were one mobile treatment unit. Samples undergoing treatability studies and the laboratory or testing facility conducting the treatability studies, to the extent the facilities are engaged directly in treatability studies and are not otherwise subject to the Resource Conservation and Recovery Act requirements, United States Code, title 42, section 6901 et seq., as amended, are not subject to any requirements of Code of Federal Regulations, title 40, part 124, as amended; parts 7045.0102 to 7045.0685 except this part and applicable references; ~~parts 7023.9000 to 7023.9050; 7045.1300 to 7045.1380~~ part 7045.1390; chapter 7001; or to the notification requirements of the Resource Conservation and Recovery Act, United States Code, title 42, section 6930, as amended, providing that the conditions in items A to K are met.

[For text of items A to K, see M.R.]

7045.0125 MANAGEMENT OF WASTE BY USE, REUSE, RECYCLING, AND RECLAMATION.

[For text of subps 1 to 3a, see M.R.]

Subp. 4. **Management of specific hazardous wastes.** Management of the following wastes when recycled, is not subject to regulation under parts 7045.0205 to 7045.0695 and ~~7045.1300 to 7045.1380~~ 7045.1390:

[For text of items A and B, see M.R.]

C. scrap metal and excluded scrap metal;

[For text of items D and E, see M.R.]

F. ~~coke and coal tar from the iron and steel industry that contain EPA Hazardous Waste No. K087 listed under part 7045.0135, subpart 3, item Q, subitem (2), (decanter tank tar sludge from coking operations) from the iron and steel production process~~ EPA Hazardous Waste Nos. K060, K087, K141, K142, K143, K144, K145, K147, and K148, and any wastes from the coke by-products processes that are hazardous only because they exhibit the toxicity characteristic, specified in part 7045.0131, subpart 7, when, subsequent to generation, these materials are recycled to coke ovens, recycled to the tar recovery process as a feedstock to produce coal tar, or mixed with coal tar prior to the tar's sale or refining. This exclusion is conditioned on there being no land disposal of the wastes from the point they are generated to the point they are recycled to coke ovens, tar recovery, or refining processes or mixed with coal tar;

[For text of items G to M, see M.R.]

N. recyclable fuel, if the following conditions are met:

(1) the recyclable fuel is immediately removed from the generation site by a transporter in compliance with all applicable Minnesota Department of Transportation requirements in Minnesota Statutes, sections 221.033 to ~~221.035~~ 221.0355, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199;

[For text of subitems (2) to (4), see M.R.]

(5) if, because of a need to conduct waste analysis, recyclable fuel cannot be placed into the recycling process within 24 hours of receipt, the owner or operator of the fuel recycling facility shall contact the commissioner to request an extension of the storage time. A request for an extension can be for a single event or to address an ongoing need for additional time. A request for an extension must be submitted in writing to the commissioner and must include:

[For text of units (a) and (b), see M.R.]

(c) a description of how the waste will be managed during the storage period, including the measures that will be in place to prevent releases and how spills will be contained and cleaned up.

The commissioner's decision to approve holding the waste longer than 24 hours will be based on an evaluation of whether the owner or operator of the recycling facility can provide adequate protection of human health and the environment until the recyclable fuel is placed into the recycling process; ~~and~~

O. petroleum fuel filters if they are burned for energy recovery under subpart 3a, or recycled as scrap metal under item C, and are managed during accumulation and transportation ~~according to~~ in accordance with the requirements of part 7045.0990, subparts 3 to 5~~.~~; and

P. circuit boards or shredded circuit boards being recycled, provided that they are:

(1) stored in containers sufficient to prevent a release to the environment prior to recovery; and

(2) free of mercury switches, mercury relays, and nickel-cadmium batteries and lithium batteries.

Subp. 5. **Requirements for use of hazardous waste as feedstock.**

A. Except as provided in items B to D, hazardous wastes that are shown to be recycled by being used in a manner specified in subitems (1) to (3), are not subject to regulation under parts 7045.0205 to 7045.0990 and ~~7045.1300 to 7045.1380~~ 7045.1390. This subpart does not apply to wastes being accumulated speculatively as defined in part 7045.0020, subpart 84a, or being managed by use constituting disposal as regulated under part 7045.0665 or burning for energy recovery, as regulated in part 7045.0692. Hazardous wastes are considered to be used as feedstock if they are:

[For text of subitems (1) to (3), see M.R.]

[For text of item B, see M.R.]

C. Transporters of hazardous wastes for use as feedstock must comply with all applicable requirements of Minnesota Statutes, sections 221.033 and ~~221.034~~ 221.0341, and with ~~221.035~~ 221.0355 if applicable, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199, as amended.

[For text of item D, see M.R.]

Subp. 6. **Requirements for reclamation of specific hazardous waste.**

A. A by-product or a sludge that is hazardous only because it exhibits a characteristic of hazardous waste as defined in part 7045.0131 and is reclaimed is subject to only the following requirements:

(1) A generator of such a hazardous waste is subject to the requirements of subpart 5, item B.

(2) Transporters of such a hazardous waste must comply with all applicable requirements of Minnesota Statutes, sections 221.033 and ~~221.034~~ 221.0341, and with ~~221.035~~ 221.0355 if applicable, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199, as amended.

[For text of subitem (3), see M.R.]

[For text of item B, see M.R.]

[For text of subps 7 and 8, see M.R.]

Subp. 9. **Facility requirements.** Unless exempted specifically in this part or parts 7045.0692 and 7045.0790 to 7045.0990, owners ~~or~~ and operators of facilities ~~which~~ that recycle hazardous waste are subject to the following requirements:

A. If the recyclable hazardous waste is stored before it is recycled, the owners or operators are subject to the requirements of parts 7045.0450 to 7045.0534, 7045.0540, 7045.0547, 7045.0548, 7045.0552 to 7045.0632, 7045.0645, 7045.0647, 7045.0648, 7045.0652 to 7045.0686, and ~~7045.1300 to 7045.1380~~ 7045.1390, and chapter 7001. The recycling process itself is exempt from regulation except as provided in item C.

[For text of items B to D, see M.R.]

[For text of subps 10 to 13, see M.R.]

7045.0127 RESIDUES IN EMPTY CONTAINERS AND EMPTY INNER LINERS.

Subpart 1. **Scope.** Any hazardous waste remaining in an empty container or an empty inner liner removed from an empty container, as defined in subparts 2 to 4 is not subject to regulation under parts 7045.0102 to 7045.1030 and ~~7045.1300 to 7045.1380~~ 7045.1390, or a hazardous waste facility permit. Any hazardous waste in a container or an inner liner removed from a container that is not empty, as defined in subparts 2 to 4, is subject to regulation under parts 7045.0102 to 7045.1030 and ~~7045.1300 to 7045.1380~~ 7045.1390, and the agency's permitting procedures.

Subp. 2. **Empty containers or inner liners; definition.** A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste in part 7045.0135, subpart ~~2, 3, or 4, item E~~ 1a, items B and C, and Code of Federal Regulations, title 40, section 261.33(e), as incorporated in part 7045.0135, is empty if:

[For text of items A to D, see M.R.]

Subp. 3. **Other empty containers or inner liners.** A container or inner liner that has held an acute hazardous waste identified in part 7045.0135, subpart ~~2, 3, or 4, item E~~ 1a, items B and C, and Code of Federal Regulations, title 40, section 261.33(e), as incorporated in part 7045.0135, is empty if:

[For text of items A to C, see M.R.]

[For text of subp 4, see M.R.]

7045.0131 CHARACTERISTICS OF HAZARDOUS WASTE.

Subpart 1. **In general.** A waste which is not excluded from regulation as a hazardous waste under part 7045.0120 is a hazardous waste if it exhibits ignitability, corrosivity, reactivity, toxicity, lethality, or is an oxidizer, as described in subparts 2 to 7. A hazardous waste which is identified by a characteristic in this part is assigned every hazardous waste number that is applicable. This number must be used in complying with the notification requirements of section 3010 of the federal Resource Conservation and Recovery Act and all applicable record keeping and reporting requirements under parts ~~7023.9000 to 7023.9050,~~ 7045.0205 to ~~7045.0642 and 7045.1300~~ 7045.0651 and 7045.1390, and chapter 7001. For purposes of this part, the commissioner shall consider a sample obtained using any of the applicable sampling methods specified in Code of Federal Regulations, title 40, part ~~260~~ 261, Appendix I ~~or part 261, Appendix II~~, as ~~amended~~ incorporated in part 7045.0155, or Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0065, item D, to be a representative sample.

Subp. 2. **Ignitability.** A waste exhibits the characteristic of ignitability if a representative sample of the waste has any of the following properties:

[For text of items A and B, see M.R.]

C. it is an ignitable compressed gas as defined in Code of Federal Regulations, title 49, section ~~173.300~~ 173.115, as amended, and as determined by the test methods described in that regulation or equivalent test methods approved by the commissioner under part 7045.0075, subpart 1.

A waste that exhibits the characteristic of ignitability has the hazardous waste number of D001.

[For text of subp 3, see M.R.]

Subp. 4. **Corrosivity.** A waste exhibits the characteristic of corrosivity if a representative sample of the waste has any of the following properties:

A. It is aqueous and has a pH less than or equal to 2.0 or greater than or equal to 12.5, as determined by a pH meter using ~~either the test method~~ Method 9040C in ~~the~~ "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods ~~issued by the United States Environmental Protection Agency~~," EPA publication ~~number~~ SW-846 ~~(First Edition, 1980 as updated by Revisions A (August 1980), B (July 1981), and C (February 1982) or Second Edition, 1982) also described in Methods for Chemical Analysis of Water and Waste issued by the Environmental Monitoring and Support Laboratory, publication number 600/7-79-020 (March 1979), or an equivalent test method approved by the commissioner under the procedures set forth in part 7045.0075, subpart 1~~, incorporated by reference in part 7045.0065, item D; or

B. It is liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 degrees Celsius (130 degrees Fahrenheit) as determined by the test method specified in National Association of Corrosion Engineers Standard TM-01-69 as standardized in" Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," ~~issued by the United States Environmental Protection Agency,~~ EPA publication ~~number~~ SW-846 ~~(First Edition, 1980 as updated by Revisions A (August 1980), B (July 1981), and C (February 1982) or Second Edition, 1982) or an equivalent test method approved by the commissioner under the procedures set forth in part 7045.0075, subpart 1~~, incorporated by reference in part 7045.0065, item D.

A waste that exhibits the characteristic of corrosivity has the hazardous waste number of D002.

Subp. 5. **Reactivity.** A waste exhibits the characteristic of reactivity if a representative sample of the waste has any of the following properties:

[For text of items A to G, see M.R.]

H. it is a forbidden explosive as defined in Code of Federal Regulations, title 49, section ~~173.51~~ 173.54, as amended, a ~~Class A~~ Division 1.1 or 1.2 explosive as defined in Code of Federal Regulations, title 49, section ~~173.53~~ 173.50, as amended, or a ~~Class B~~ Division 1.2 or 1.3 explosive as defined in Code of Federal Regulations, title 49, section ~~173.88~~ 173.50, as amended.

A waste that exhibits the characteristic of reactivity has the hazardous waste number of D003.

[For text of subp 6, see M.R.]

Subp. 7. **Toxicity.** Toxicity is determined as follows:

A. A waste, except manufactured gas plant waste, exhibits the characteristic of toxicity if, using the ~~test methods described in Code of Federal Regulations, title 40, part 261, appendix II, as amended, or equivalent methods approved by the commissioner under the procedures in part 7045.0075, subpart 1~~ Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA publication SW-846, incorporated by reference in part 7045.0155, subpart 1, item B, the extract from a representative sample of the waste contains any of the contaminants listed in subpart 8 at a concentration equal to or greater than the respective ~~value given in that table~~ contaminant values listed. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this evaluation.

[For text of items B and C, see M.R.]

[For text of subp 8, see M.R.]

7045.0133 EXEMPTION FROM REGULATION DUE TO LETHALITY.

Subpart 1. **In general.** A generator's waste that exhibits the characteristics of lethality as described in part 7045.0131, subpart 6, may be exempted from regulation under parts 7045.0102 to ~~7045.1380~~ 7045.1390 if the generator can demonstrate to the satisfaction of the agency that the waste is not capable of posing a present or potential hazard to human health and the environment if the waste were to be improperly treated, transported, stored, disposed, or managed under routine waste management methods.

Subp. 2. **Factors to be considered.** In demonstrating that a waste should be exempt from regulation under parts 7045.0102 to ~~7045.1380~~ 7045.1390, the generator must present information related to the following factors:

[For text of items A to G, see M.R.]

7045.0135 LISTS OF HAZARDOUS WASTES.

Subpart 1. [See repealer.]

Subp. 1a. **Incorporation by reference of federal regulations.**The following lists of hazardous wastes found in Code of Federal Regulations, title 40, part 261, subpart D, as amended, are incorporated by reference:

A. section 261.30, general;

B. section 261.31, hazardous wastes from nonspecific sources;

C. section 261.32, hazardous wastes from specific sources;

D. section 261.33, discarded commercial chemical products, off-specification species, container residues, and spill residues thereof;

E. section 261.35, deletion of certain hazardous waste codes following equipment cleaning and replacement; and

F. section 261.38, comparable/syngas fuel exclusion.

Subp. 2. [See repealer.]

Subp. 2a. [See repealer.]

Subp. 2b. **Additions, modifications, or exceptions to incorporated provisions.**

A. Part 7045.0090, adoption and incorporation by reference, also applies.

B. The hazardous waste number in the "U" listing for paraldehyde in Code of Federal Regulations, title 40, section 261.33(f)/Table, should be U182.

C. In Code of Federal Regulations, title 40, section 261.38, Table 1, under "metals," in the listing for "cadmium, total," "ND" is the "composite value" and "1.2" is the "Concentration limit."

Subp. 3. [See repealer.]

Subp. 4. [See repealer.]

Subp. 5. **PCB wastes.** Requirements for PCB wastes are as follows:

A. For ~~the~~ purposes of this ~~part, "PCB" means the class of organic compounds known as polychlorinated biphenyls at a concentration of 50 parts per million or greater and includes any of several compounds produced by replacing one or more hydrogen atoms on the biphenyl molecule with chlorine. "PCB" does not include chlorinated biphenyl compounds that have functional groups attached other than chlorine.~~ subpart:

(1) "commercial storer of PCB waste" has the meaning given in Code of Federal Regulations, title 40, section 761.3, as amended;

(2) "PCB" means a substance that contains PCB's at a concentration of 50 parts per million or greater;

(3) "PCB lighting ballast" means a device that electrically controls light fixtures and that contains a PCB small capacitor or potting material that contains PCB's; and

(4) "PCB small capacitor" means a capacitor that contains less than 1.36 kilograms (3 pounds) of PCB dielectric fluid.

B. PCB materials or items are hazardous waste if and when they are discarded or stored prior to being discarded.

C. A generator of PCB wastes ~~who stores on-site prior to disposal~~ is subject to the requirements of Minnesota Statutes, section 116.07, subdivision 2b, and is exempt from the agency's hazardous waste ~~storage facility permit~~ requirements ~~and parts 7045.0292 and 7045.0450 to 7045.0642 for the storage of those wastes~~ except for ~~the following requirements~~:

~~(1) the storage standards described in Code of Federal Regulations, title 40, section 761.65, as amended; and~~

~~(2) the requirements applicable to the generator based on generator size of part 7045.0292, subpart 1, 5, or 6, regarding proper labeling, personnel training, preparedness, prevention, and contingency planning. However, PCB items in use or in storage prior to disposal that are labeled as PCBs according to Code of Federal Regulations, title 40, sections 761.40, 761.45, and 761.65, as amended, are not subject to the hazardous waste labeling requirements of part 7045.0292.~~

(1) the hazardous waste management requirements of part 7045.0208;

(2) the evaluation requirements of part 7045.0214;

(3) the licensing requirements of parts 7045.0225 to 7045.0250; and

(4) the fee requirements of chapter 7046, unless a generator demonstrates performance of a PCB phase-out agreement under Minnesota Statutes, section 116.07, subdivision 2b, paragraph (b).

D. ~~PCB wastes may be transported without a hazardous waste manifest if transportation is via the owner's own vehicle and if that transportation is between the~~

~~owner's facilities or premises.~~ In addition to the requirements of item C, a generator or commercial storer of PCB waste who generates or stores PCB ballasts or PCB small capacitors must comply with the requirements of part 7045.0566, subpart 2. A commercial storer of PCB waste storing only PCB ballasts and PCB small capacitors is not subject to the facility standards in parts 7045.0450 to 7045.0651, except for the requirements of part 7045.0566, subpart 2, or to the hazardous waste facility permit requirements in chapter 7001.

E. Thermal treatment of PCB wastes at concentrations less than 500 parts per million. High efficiency boilers as defined in Code of Federal Regulations, title 40, section 761.60(a), as amended, which are used for treatment of mineral oil dielectric fluid containing less than 500 ppm PCB, are exempt from the agency's hazardous waste facility permit requirements in chapter 7001 and parts ~~7023.9000 to 7023.9050,~~ 7045.0292~~,~~ and 7045.0450 to ~~7045.0642 for storage and treatment of those wastes~~ 7045.0651, except for the following requirements:

(1) parts 7045.0526 and 7045.0528;

(2) parts 7045.0556 and 7045.0558;

(3) parts 7045.0564 to 7045.0588; and

(4) parts 7045.0594 and 7045.0596.

F. PCB wastes have the hazardous waste number of MN03.

7045.0139 BASIS FOR LISTING HAZARDOUS WASTES.

Subpart 1. **General.** ~~The tables in subpart 2 list the constituents which caused the agency to list wastes as hazardous in part 7045.0135, subparts 2 and 3. The notation "N.A." indicates the waste is hazardous because it fails the test for the characteristics of ignitability, corrosivity, reactivity, or toxicity, and the listing of a chemical name is not applicable.~~ The basis for listing hazardous waste is found in part 7045.0155, subpart 1,

item D, which incorporates Code of Federal Regulations, title 40, part 261, Appendix VII, Basis for Listing Hazardous Waste. Part 7045.0155, subpart 2, provides any applicable exceptions.

Subp. 2. [See repealer.]

7045.0141 HAZARDOUS CONSTITUENTS.

Subpart 1. **Scope.** ~~Hazardous constituents and their corresponding Chemical Abstract Service registry numbers and hazardous waste numbers, if available, are listed in subparts 2 to 22.~~ The hazardous constituents list is found in part 7045.0155, subpart 1, item E, which incorporates Code of Federal Regulations, title 40, part 261, Appendix VIII, Hazardous Constituents. Part 7045.0155, subpart 2, provides any applicable exceptions.

Subp. 2. [See repealer.]

Subp. 3. [See repealer.]

Subp. 4. [See repealer.]

Subp. 5. [See repealer.]

Subp. 6. [See repealer.]

Subp. 7. [See repealer.]

Subp. 8. [See repealer.]

Subp. 9. [See repealer.]

Subp. 10. [See repealer.]

Subp. 11. [See repealer.]

Subp. 12. [See repealer.]

Subp. 13. [See repealer.]

Subp. 14. [See repealer.]

Subp. 15. [See repealer.]

Subp. 16. [See repealer.]

Subp. 17. [See repealer.]

Subp. 18. [See repealer.]

Subp. 19. [See repealer.]

Subp. 20. [See repealer.]

Subp. 21. [See repealer.]

Subp. 22. [See repealer.]

Subp. 23. [See repealer.]

7045.0143 GROUNDWATER PROTECTION HAZARDOUS CONSTITUENTS LIST.

Subpart 1. **Scope.** ~~For the purposes of the groundwater protection requirements in parts 7001.0640, subpart 1, item D, subitem (2); and 7045.0484, subparts 12, item G, subitem (2), and 13, item E, the hazardous constituents are listed with their corresponding Chemical Abstract Service registry numbers in subparts 2 to 27. Where "total" is entered for the Chemical Abstract Service registry number, all species in the groundwater that contain this element are included.~~ The groundwater protection hazardous constituents list is found in part 7045.0543, subpart 1, item D, which incorporates Code of Federal Regulations, title 40, part 264, Appendix IX, Ground Water Monitoring List. Part 7045.0543, subpart 2, provides any applicable exceptions.

Subp. 2. [See repealer.]

Subp. 3. [See repealer.]

Subp. 4. [See repealer.]

Subp. 5. [See repealer.]

Subp. 6. [See repealer.]

Subp. 7. [See repealer.]

Subp. 9. [See repealer.]

Subp. 10. [See repealer.]

Subp. 12. [See repealer.]

Subp. 13. [See repealer.]

Subp. 14. [See repealer.]

Subp. 15. [See repealer.]

Subp. 17. [See repealer.]

Subp. 20. [See repealer.]

Subp. 21. [See repealer.]

Subp. 23. [See repealer.]

Subp. 25. [See repealer.]

Subp. 27. [See repealer.]

7045.0155 APPENDICES TO IDENTIFICATION AND LISTING OF HAZARDOUS WASTE.

Subpart 1. **Incorporation of federal regulations.** The following appendices found in Code of Federal Regulations, title 40, part 261, as amended, are incorporated by reference:

A. Appendix I, Representative Sampling Methods;

B. Appendix VII, Basis for Listing Hazardous Waste; and

C. Appendix VIII, Hazardous Constituents.

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.**

A. Part 7045.0090, adoption and incorporation by reference, also applies.

B. The chemical abstracts name for physostigmine listed in Code of Federal Regulations, title 40, part 261, Appendix VIII, is "Pyrrolo [2,3-b]indol-5-o1."

C. The chemical abstracts number for potassium pentachlorophenate in Code of Federal Regulations, title 40, part 261, Appendix VIII, should be "7778-73-6."

7045.0208 HAZARDOUS WASTE MANAGEMENT.

Subpart 1. **Management by generator.** A generator must manage hazardous waste by using one of the methods described in items A to ~~G~~ H, unless otherwise specifically exempted under this chapter.

A. A generator may treat or dispose of hazardous waste at an on-site facility as provided under part 7045.0211.

B. A generator may ensure delivery of hazardous waste to an off-site storage, treatment, or disposal facility. If located in the United States, the facility used must be permitted to accept hazardous waste under the agency's permitting procedures, have interim status under parts 7045.0552 to ~~7045.0642~~ 7045.0651, or be authorized to manage hazardous waste by the Environmental Protection Agency or by a state with a hazardous waste management program authorized by the Environmental Protection Agency.

[For text of items C to G, see M.R.]

H. A generator may ensure delivery of PCB waste to a commercial storer of PCB waste, as defined in part 7045.0135, subpart 5.

[For text of subps 1a to 3, see M.R.]

Subp. 4. **Land disposal.** ~~Except as specified in part 7045.1300, subparts 2 and 3,~~ Hazardous wastes are subject to the requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390.

7045.0213 FARMERS; PESTICIDES.

[For text of subpart 1, see M.R.]

Subp. 2. **Special conditions.** A farmer who generates waste pesticides which are hazardous waste and who triple rinses each emptied pesticide container and disposes of the pesticide residues on the farmer's farm in a manner consistent with the disposal instructions on the pesticide label is not required with respect to those pesticides to comply with other standards in parts 7045.0205 to 7045.0320 or to comply with parts 7045.0450 to ~~7045.1380~~ 7045.1390, or to obtain a hazardous waste facility permit, provided that:

[For text of items A to C, see M.R.]

7045.0214 EVALUATION OF WASTES.

Subpart 1. **General requirement.** Any person who produces a waste within the state of Minnesota or any person who produces a waste outside the state of Minnesota that is managed within the state of Minnesota, must evaluate the waste to determine if it is hazardous within 60 days of initially generating the waste. The generation start date must be recorded and available for inspection. Waste that is not evaluated within 60 days of the generation start date must be managed as a hazardous waste and the person who produces the waste must be considered a generator until the waste is determined to be nonhazardous under parts 7045.0214 to 7045.0218. A material is determined to be a waste in accordance with the conditions specified under the definition of other waste material in part 7045.0020. Any waste evaluated and exempted under part 7045.0075 or 7045.0120 does not need to be reevaluated under this part. If the waste is determined to be hazardous, the generator must refer to parts 7045.0075, 7045.0450 to ~~7045.0685~~ 7045.0990, ~~and~~ ~~7045.1300 to 7045.1380~~ 7045.1390, and 7045.1400 for possible exclusions or restrictions relating to management of the specific waste.

[For text of subp 2, see M.R.]

Subp. 3. **Wastes generated by treatment, storage, or disposal.** Wastes generated by treatment, storage, or disposal of hazardous waste are as follows:

A. Except as provided in items B to E, or in part 7045.0102, any waste generated from the treatment, storage, or disposal of hazardous waste, including any sludge, spill residue, ash, emission control dust or leachate, but not including precipitation ~~run-off~~ runoff, is a hazardous waste if it meets the criteria of subpart 2 or if it is derived from a waste that is listed in part 7045.0135.

[For text of items B to D, see M.R.]

E. Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062, or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations, or industrial furnaces~~, as defined in~~ that are blast furnaces or smelting, melting, and refining furnaces, including pyrometallurgical devices, such as cupolas, reverberator furnaces, sintering machines, roasters, or foundry furnaces, or that are other devices that the commissioner determines qualify for inclusion as an industrial furnace under part 7045.0020, subpart 43b, that are disposed ~~of~~ in solid waste disposal units, provided that these residues meet the generic exclusion levels identified ~~below~~ in the tables in this item for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan. At a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

The generic exclusion levels ~~are~~ for K061 and K062 nonwastewater HTMR residues are as follows:

Constituent	Maximum for any single composite sample (mg/l)
Antimony	~~0.063~~ 0.10
Arsenic	~~0.055~~ 0.50
Barium	~~6.3~~ 7.6
Beryllium	~~0.0063~~ 0.010
Cadmium	~~0.032~~ 0.050
Chromium (total)	0.33
Lead	~~0.095~~ 0.15
Mercury	0.009
Nickel	~~0.63~~ 1.0
Selenium	0.16
Silver	0.30
Thallium	~~0.013~~ 0.020
~~Vanadium~~	~~1.26~~
Zinc	70

The generic exclusion levels for F006 nonwastewater HTMR residues are as follows:

Constituent	Maximum for any single composite sample (mg/l)
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total)	1.8 (mg/kg)
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16

Silver	0.30
Thallium	0.020
Zinc	70

For ~~each shipment of~~ K061 ~~high temperature metals recovery~~, K062, or F006 HTMR residues sent to ~~a~~ solid waste disposal ~~unit that meets~~ units, the treatment facility must prepare and send to the commissioner a onetime notification and certification certifying that the residues meet the generic exclusion levels for all constituents~~,~~ and ~~does~~ do not exhibit any ~~characteristic, a~~ characteristics of hazardous waste. The notification and certification must also be kept in the facility's files. The notification and certification must be updated if the process or operation generating the waste changes or if the solid waste disposal unit receiving the waste changes. However, the treatment facility need only notify the commissioner on an annual basis if these changes occur. The notification and certification must be sent to the commissioner no later than December 31. The notification and certification must include the following information:

(1) the name and address of the solid waste disposal unit receiving the waste ~~shipment~~ shipments;

(2) the EPA hazardous waste ~~number~~ numbers and treatability ~~group~~ groups at the initial point of generation; and

(3) the treatment standards applicable to the waste at the initial point of generation.

The certification must be signed by an authorized representative of the treatment facility and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

7045.0255 ~~ONE-TIME~~ ONETIME DISPOSAL REQUIREMENTS.

A person having hazardous waste subject to regulation under this chapter who is only a hazardous waste generator for the ~~one-time~~ onetime disposal of hazardous waste which is not currently being produced, must comply with this chapter except as provided in items A to D. The exemptions in this part do not apply to generators that generate hazardous waste more than one time.

A. The generator is exempt from parts 7045.0225 to 7045.0250, license and license reporting.

B. A large quantity generator is exempt from part 7045.0292, subpart 1, but must instead comply with part 7045.0292, subpart 5, items A to F, and must meet the requirements of part 7045.0566, relating to preparedness and prevention, and ~~part 7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes.

C. A small quantity generator is exempt from the requirements of part 7045.0292, subpart 5, items G and H, but instead must meet the requirements of part 7045.0566, relating to preparedness and prevention, and ~~part 7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes.

D. A very small quantity generator is exempt from part 7045.0292, subpart 6, but instead must comply with part 7045.0292, subpart 5, items A to F, and must meet the requirements of part 7045.0566, relating to preparedness and prevention, and ~~part 7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes.

7045.0270 PRETRANSPORT REQUIREMENTS.

Subpart 1. **Marking.** Before transporting or offering hazardous waste for transportation off-site, a generator must:

A. mark each package of hazardous waste in accordance with the applicable United States Department of Transportation regulations on hazardous materials under Code of Federal Regulations, title 49, part 172, subpart D, as amended; and

[For text of item B, see M.R.]

[For text of subps 2 and 3, see M.R.]

Subp. 4. **Packaging.** Before transporting hazardous waste or offering a hazardous waste for transportation off-site, a generator must package the waste in accordance with the applicable United States Department of Transportation regulations on packaging under Code of Federal Regulations, title 49, parts 173, 178, ~~and~~ 179, and 180, as amended.

Subp. 5. **Labeling.** Before transporting or offering hazardous waste for transportation off-site, a generator must label each package in accordance with the applicable United States Department of Transportation regulations on hazardous materials under Code of Federal Regulations, title 49, part 172, subpart E, as amended.

[For text of subps 6 and 7, see M.R.]

7045.0292 ACCUMULATION OF HAZARDOUS WASTE.

Subpart 1. **Large quantity generator.** A large quantity generator may accumulate hazardous waste on site without a permit or without having interim status if:

[For text of item A, see M.R.]

B. the waste is placed as follows:

(1) in containers which meet the standards of part 7045.0270, subpart 4, and are managed in accordance with applicable requirements of parts 7045.0594, subpart 2~~.~~; 7045.0596, subpart 3~~, and~~; 7045.0626; 7045.0645; 7045.0647; and 7045.0648;

(2) in tanks provided the generator complies with the applicable requirements of parts 7045.0594, subpart 2~~.~~; 7045.0596, subpart 3~~, and~~; 7045.0628;

7045.0645; 7045.0647; and 7045.0648, except part 7045.0628, ~~subpart~~ subparts 9, item C, and ~~subpart~~ 12; ~~or~~

(3) for wood preserving operations on drip pads, provided the generator complies with parts 7045.0594, subpart 2~~.~~; 7045.0596, subpart 3~~.~~; and 7045.0644 and maintains records containing a description of procedures that will be followed to ensure that all wastes are removed from drip pads and associated collection systems at least once every 90 days, and maintains documentation of the quantities, dates, and times of each waste removal. ~~These~~ Records relating to drip pads must be maintained at the licensed site and must be easily available for agency inspection;

[For text of items C to F, see M.R.]

G. the requirements of parts 7045.0558; 7045.0562, subparts 1 and 2; 7045.0566 to 7045.0576; and ~~7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, are fulfilled regarding personnel training, ignitable, reactive, or incompatible waste, preparedness and prevention, contingency planning, and waste analysis for restricted wastes.

[For text of subps 2 to 4, see M.R.]

Subp. 5. **Small quantity generator.** A small quantity generator may accumulate up to 3,000 kilograms of hazardous waste that is not acute hazardous waste on site without a permit or without having interim status if:

[For text of item A, see M.R.]

B. the waste is placed in containers which meet the standards of part 7045.0270, subpart 4, and are managed in accordance with parts 7045.0594, subpart 2~~.~~; 7045.0596, subpart 3~~.~~; and 7045.0626, subparts 1 to 8; in tanks provided the generator complies with the requirements of parts 7045.0594, subpart 2~~.~~; 7045.0596, subpart 3~~.~~; and 7045.0629; or for wood preserving operations on drip pads, provided the generator complies with parts

7045.0594, subpart 2~~,~~; 7045.0596, subpart 3 ~~,~~; and 7045.0644 and maintains records containing a description of procedures that will be followed to ensure that all wastes are removed from drip pads and associated collection systems at least once every 180 days, and maintains documentation of the quantities, dates, and times of each waste removal. These records relating to drip pads must be maintained at the licensed site and must be easily available for agency inspection;

[For text of items C to F, see M.R.]

G. the generator meets the requirements of parts 7045.0566, relating to preparedness and prevention; 7045.0568, relating to the arrangements with local authorities for emergencies; and ~~7045.1315, subpart 1, item D~~ Code of Federal Regulations, title 40, section 268.7(a)(5), as incorporated in part 7045.1390, relating to waste analysis for restricted wastes; and

[For text of item H, see M.R.]

Subp. 6. **Very small quantity generator.** A very small quantity generator may accumulate up to 1,000 kilograms of hazardous waste that is not acute hazardous waste on site without a permit or without having interim status if:

[For text of item A, see M.R.]

B. the waste is placed in containers which meet the standards of part 7045.0270, subpart 4, and are managed in accordance with parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0626, subparts 1 to 8; in tanks provided the generator complies with the requirements of parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0629; or for wood preserving operations on drip pads, provided the generator complies with parts 7045.0594, subpart 2~~,~~; 7045.0596, subpart 3~~,~~; and 7045.0644 and maintains records containing a description of procedures that will be followed to ensure that all wastes are removed from drip pads and associated collection systems at least once every 180 days, and maintains documentation of the quantities, dates, and times of each waste removal.

These records relating to drip pads must be maintained at the licensed site and must be easily available for agency inspection;

[For text of items C to H, see M.R.]

Subp. 7. **Acute hazardous waste accumulation.** A small quantity generator or a very small quantity generator who generates acute hazardous waste ~~may accumulate that waste on site indefinitely until one kilogram of acute hazardous waste or 100 kilograms of residue, contaminated soil, water, or other debris resulting from the cleanup of a spill of an acute hazardous waste into or on any land or water, is accumulated. From the date the applicable limit is reached, the entire quantity of waste must be treated on site in compliance with part 7045.0211 or shipped off site in compliance with part 7045.0208 within 90 days. A generator accumulating wastes under this subpart must meet the requirements in items A and B.~~ that is not exempt under subpart 8 must comply with items A and B:

A. ~~For the period preceding the accumulation start date,~~ A generator may accumulate acute hazardous waste on site indefinitely in quantities equal to or less than one kilogram of acute hazardous waste and equal to or less than 100 kilograms of residue, contaminated soil, water, or other debris resulting from cleaning up spilled acute hazardous waste. The generator must comply with subpart 5, items B to H.

B. ~~For the period following the accumulation start date, the generator~~ A generator who accumulates on site more than one kilogram of acute hazardous waste, or more than 100 kilograms of residue, contaminated soil, water, or other debris resulting from cleaning up spilled acute hazardous waste must comply with subpart 1.

Subp. 8. **Satellite accumulation.** Items A to D apply to all generators of hazardous waste.

A. A generator may, without a permit or interim status and without complying with subparts 1 to 7, accumulate as much as 55 gallons of hazardous waste or one quart of

acute hazardous waste listed in part 7045.0135, ~~subparts 2 and 4, item E~~ subpart 1a, items B to D, per waste stream per each point of generation provided the generator complies with items B to D.

[For text of items B to D, see M.R.]

[For text of subps 9 and 10, see M.R.]

Subp. 11. **Accumulation requiring a permit.** A large quantity generator who accumulates hazardous waste for more than 90 days, or a small quantity generator who accumulates more than 3,000 kilograms of hazardous waste at any time, is an operator of a storage facility and is subject to the requirements of parts 7045.0450 to ~~7045.0642~~ 7045.0651 and the agency's permitting procedures in chapter 7001 ~~and parts 7023.9000 to 7023.9050~~ unless the generator has been granted a time extension under subpart 10.

[For text of subp 12, see M.R.]

7045.0294 RECORD KEEPING.

[For text of subps 1 to 3, see M.R.]

Subp. 3a. **Training records.** A generator must keep training records required under part 7045.0292, subparts 1, item G, and 5, item ~~G~~ H, subitem (3), on current personnel until closure of the licensed site. Training records on former employees must be kept for at least three years from the date of the employee's termination. Personnel training records may accompany personnel transferred within the same company.

[For text of subps 4 and 5, see M.R.]

7045.0300 ADDITIONAL REPORTING.

The commissioner, when necessary to determine compliance with the requirements of this chapter, may require generators to furnish additional reports concerning the quantities and disposition of waste identified or listed in parts ~~7045.0100~~ 7045.0102 to ~~7045.0143~~ 7045.0155.

7045.0302 INTERNATIONAL SHIPMENTS; SPECIAL CONDITIONS.

[For text of subps 1 and 1a, see M.R.]

Subp. 2. **Notification.** When shipping hazardous waste outside the state of Minnesota to a foreign country the primary exporter must notify the commissioner and the EPA of an intended export before the waste is scheduled to leave the United States. A complete notification should be submitted 60 days before the initial shipment is intended to be shipped off site. This notification may cover export activities extending over a 12-month or lesser period.

The notification must be sent to the commissioner at 520 Lafayette Road, Saint Paul, Minnesota 55155-4194, and to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, 1200 Pennsylvania Avenue N.W., Washington, DC 20460. Hand-delivered notifications must be sent to the Office of Enforcement and Compliance Assurance, Office of Federal Activities, International Compliance Assurance Division (2254A), Environmental Protection Agency, Ariel Rios Building, 12th Street and Pennsylvania Avenue N.W., Washington, DC 20460. In both cases, the following must be prominently displayed on the front of the envelope: "Attention: Notification of Intent to Export."

The primary exporter must provide the commissioner and the EPA with written renotification of any changes to the notification, except for changes to the telephone number, decreases in the quantity indicated in item B, subitem (3), and changes in the means of transport in item B, subitem (5). The waste shall not be shipped until the primary exporter receives an EPA Acknowledgment of Consent reflecting the receiving country's consent to the changes.

The notification must be in writing, signed by the primary exporter, and include the following information:

A. name, mailing address, telephone number, and identification number of the primary exporter; and

B. by consignee, for each hazardous waste type:

(1) a description of the hazardous waste and the EPA hazardous waste number (from Code of Federal Regulations, title 40, part 261, subpart C or D, as amended), United States Department of Transportation proper shipping name, hazard class, ~~and~~ identification number (UN/NA), and packing group for each hazardous waste as identified in Code of Federal Regulations, title 49, parts 171 to 177, as amended;

[For text of subitems (2) to (9), see M.R.]

[For text of subps 3 to 7, see M.R.]

7045.0365 TRANSFER FACILITY REQUIREMENTS.

Subpart 1. **Applicability.** A transporter who stores manifested shipments of hazardous waste in containers meeting the requirements of part 7045.0270, subpart 4, at a transfer facility for a period of ten days or fewer is not subject to regulation under parts 7045.0450 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390, and a hazardous waste facility permit with respect to the storage of those wastes. The owner or operator must notify the commissioner in writing of his or her activity.

[For text of subps 2 and 3, see M.R.]

7045.0371 TRANSPORTATION OF HAZARDOUS WASTE.

Hazardous waste shall be transported in accordance with all applicable requirements of Minnesota Statutes, sections 221.033 and ~~221.034~~ 221.0341, and with ~~221.035~~ 221.0355 if applicable, and Code of Federal Regulations, title 49, parts 171 to ~~179~~ 199, as amended.

7045.0395 HAZARDOUS WASTE DISCHARGES.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Reporting.** Any air, rail, highway, or water transporter who has discharged hazardous waste must:

A. report in writing as required by Code of Federal Regulations, title 49, section 171.16, as amended, to the ~~Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau~~ Information Systems Manager, PHH-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001, or submit an electronic hazardous materials incident report to the Information Systems Manager, DHM-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001 at http://hazmat.dot.gov;

[For text of items B and C, see M.R.]

7045.0450 FACILITIES GOVERNED BY FACILITY STANDARDS.

Subpart 1. **General requirements.**

[For text of items A to C, see M.R.]

D. Parts 7045.0450 to 7045.0551 apply to the owners and operators of all facilities that treat, store, or dispose of hazardous waste referred to in ~~parts 7045.1300 to 7045.1380~~ part 7045.1390.

[For text of item E, see M.R.]

Subp. 2. **Relationship to interim status standards.** A facility owner or operator who has fully complied with the requirements for interim status under part 7045.0554 shall comply with parts 7045.0552 to ~~7045.0642~~ 7045.0651 in lieu of parts 7045.0450 to 7045.0551 until final administrative disposition of the permit application is made. The treatment, storage, or disposal of hazardous waste is prohibited except in accordance with a permit and except for the extent to which parts 7045.0552 to ~~7045.0642~~ 7045.0651 provide for the continued operation of an existing facility which meets certain conditions

until final administrative disposition of the owner's or operator's permit application is made, except as provided under parts 7045.0485, 7045.0545, and 7045.0546.

Subp. 3. **Exemptions.** The requirements of parts 7045.0450 to 7045.0551 do not apply to the following specific waste management units, facilities, or activities, although all other waste management activities of the owner or operator may be regulated:

[For text of items A to D, see M.R.]

E. an elementary neutralization unit, a pretreatment unit, or a wastewater treatment unit, but only if the unit does not receive hazardous waste from generators other than the owner or operator of the unit, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Code of Federal Regulations, title 40, section 268.40, Table of Treatment Standards for Hazardous Wastes, as incorporated in part 7045.1390) or reactive (D003) waste to remove the characteristic before land disposal, the owner or operator must comply with part 7045.0456, subpart 2;

[For text of items F to I, see M.R.]

J. (1) except as provided in subitem (2), treatment or containment activities during immediate response to any of the following situations: a discharge of a hazardous waste, an imminent and substantial threat of a discharge of hazardous waste, or a discharge of a material which, when discharged, becomes a hazardous waste;

[For text of subitem (2), see M.R.]

(3) a person who is covered by subitem (1) and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of parts 7045.0450 to ~~7045.0544~~ 7045.0551 and the agency's permitting procedures for those activities;

K. treatment of hazardous waste by a generator in the generator's accumulation tanks or containers in accordance with part 7045.0292. If the treatment involves evaporation of aqueous waste or polymerization of polyester or other chemical fixation treatment processes in open containers, the generator is exempt from parts 7045.0450 to ~~7045.0544~~ 7045.0551, but before beginning the treatment process must submit to the commissioner the information required under part 7045.0539, subpart 2, items A to C, that is relevant to the treatment activity and must be notified by the commissioner that the treatment activity is approved. The commissioner shall approve the treatment activity if the commissioner finds that the treatment activity will not endanger human health and the environment; or

[For text of item L, see M.R.]

7045.0452 GENERAL FACILITY STANDARDS.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **General inspection requirements.** General inspection requirements include the following:

[For text of items A and B, see M.R.]

C. The frequency of inspection may vary for the items on the schedule. However, ~~it must~~ the frequency must be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration ~~or malfunctions~~, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies called for in parts 7045.0526, subpart 5; 7045.0528, subparts 4 and 7; 7045.0532, subpart 5; 7045.0534, subpart 6; 7045.0536, subpart 6; 7045.0538, subpart 5; 7045.0539, subpart 3; and 7045.0542, subpart 7; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container standards in Code of

Federal Regulations, title 40, sections 264.1033, 264.1052, 264.1053, ~~and~~ 264.1058, as amended, and sections 264.1083 to 264.1089, as incorporated in part 7045.0540, where applicable. The inspection schedule must be submitted with the permit application. The commissioner shall evaluate the schedule along with the rest of the application to ensure that it adequately protects human health and the environment. As part of this review, the commissioner may modify or amend the schedule as necessary.

[For text of items D and E, see M.R.]

7045.0458 WASTE ANALYSIS REQUIREMENTS.

Subpart 1. **Waste analysis.** Waste analysis procedures are listed in items A to D.

A. Before an owner or operator treats, stores, or disposes of any hazardous waste, or nonhazardous waste if applicable under part 7045.0488, subpart 2a, the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the waste. This analysis must contain all the information which must be known in order to treat, store, or dispose of the waste in accordance with the requirements of parts 7045.0450 to 7045.0551 and ~~7045.1300 to 7045.1380~~ 7045.1390, or with the conditions of a permit issued under the agency's permitting procedures.

B. The analysis may include data developed under parts 7045.0102 to ~~7045.0143~~ 7045.0155 and existing published or documented data on the hazardous waste or on hazardous waste generated from similar processes, including data obtained from the generator.

[For text of items C and D, see M.R.]

Subp. 2. **Waste analysis plan.** The owner or operator shall develop and follow a written waste analysis plan which describes the procedures that will be used to comply with subpart 1. The owner or operator shall keep this plan at the facility. The plan must specify:

[For text of items A to E, see M.R.]

F. where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in parts 7045.0456; 7045.0538, subpart 10; 7045.0542, subpart 2; and ~~7045.1315~~ Code of Federal Regulations, title 40, section 268.7, as incorporated in part 7045.1390; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures in Code of Federal Regulations, title 40, sections 264.1034(d) ~~and~~, 264.1063(d), as amended, and section 264.1083, as incorporated in part 7045.0540;

G. for off-site facilities, the waste analysis plan must also specify the procedures ~~which~~ that will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. The plan must describe:

(1) the procedures ~~which~~ that will be used to determine the identity of each movement of waste managed at the facility; ~~and~~

(2) the sampling method ~~which~~ that will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling. The waste analysis plan must be submitted with the permit application; and

(3) the procedure that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container;

H. for surface impoundments exempted from the land disposal restrictions under ~~part 7045.1310~~ Code of Federal Regulations, title 40, section 268.4, as incorporated in part 7045.1390, the procedures and schedules for:

(1) the sampling of impoundment contents;

(2) the analysis of test data; and

(3) the annual removal of residues which are not delisted under part 7045.0075, subpart 2, or which exhibit a characteristic of hazardous waste under part 7045.0131, and either do not meet the treatment standards of ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part 7045.1390, or, where no treatment standards have been established, such residues are prohibited from land disposal under ~~parts 7045.1320 to 7045.1333~~ Code of Federal Regulations, title 40, sections 268.30 to 268.35, as incorporated in part 7045.1390, or RCRA section 3004(d)~~.~~; and

I. for owners and operators seeking an exemption to the air emission standards of part 7045.0540 in accordance with Code of Federal Regulations, title 40, section 264.1082, as incorporated in part 7045.0540:

(1) if direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis and the results of the analysis of test data to verify the exemption; and

(2) if knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off site, that is used as the basis for knowledge of the waste.

7045.0478 OPERATING RECORD.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Record information.** The information in items A to T must be recorded, as it becomes available, and maintained in the operating record until closure of the facility.

[For text of items A and B, see M.R.]

C. A description and the quantity of each hazardous waste received, and the method and date of treatment, storage, or disposal at the facility in accordance with the

record-keeping instructions in Code of Federal Regulations, title 40, part 264, Appendix I, as incorporated in part 7045.0543.

[For text of item D, see M.R.]

E. Records and results of waste analyses and waste determinations performed as specified in parts 7045.0456~~,~~; 7045.0458~~,~~; 7045.0538, subpart 10~~,~~; and 7045.0542, subpart 2, ~~7045.1310, and 7045.1315~~ and Code of Federal Regulations, title 40, sections 264.1034 and 264.1063, as amended, and sections 264.1083, 268.4(a), and 268.7, as incorporated in part 7045.0540 or 7045.1390; and the process vent and equipment leak test methods and procedures in Code of Federal Regulations, title 40, sections 264.1034 and 264.1063, as amended.

[For text of items F and G, see M.R.]

H. Monitoring, testing, or analytical data and corrective action where required by parts 7045.0461; 7045.0484; 7045.0528, subparts 2, 4, and 7; 7045.0532, subparts 4a, 4b, and 5; 7045.0534, subparts 4a, 5, 5a, and 6; 7045.0536, subparts 5, 6, and 8; 7045.0538, subparts 4a, 5, 5a, and 6; 7045.0539, subpart 3; and 7045.0542, subpart 7; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures and record keeping requirements in Code of Federal Regulations, title 40, sections 264.1034(c) to (f), 264.1035, 264.1063(d) to (i), and 264.1064, as amended, and sections 264.1082 to 264.1090, as incorporated in part 7045.0540.

[For text of items I to K, see M.R.]

L. The certification in item K signed by the owner or operator of the facility or an authorized representative.

M. Records of the quantities and date of placement for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted ~~under part 7045.0075, subpart 8~~ by the United States

Environmental Protection Agency under Code of Federal Regulations, title 40, section 268.5, a petition under part 7045.0075, subpart 9, or a certification under Code of Federal Regulations, title 40, section 268.8, as ~~amended~~ incorporated in part 7045.1390, and the applicable notice required of a generator under ~~part 7045.1315, subpart 1~~ Code of Federal Regulations, title 40, section 268.7(a), as incorporated in part 7045.1390.

N. For an off-site treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required of the generator or the owner under Code of Federal Regulations, title 40, section 268.7(a)(1) or 268.8, as ~~amended, or part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390.

O. For an on-site treatment facility, the information contained in the notice, except the manifest number, and the certification and demonstration, if applicable, required of the generator or owner or operator under Code of Federal Regulations, title 40, section 268.7(a)(1) or 268.8, as ~~amended, or part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390.

P. For an off-site land disposal facility, a copy of the notice, and the certification and demonstration, if applicable, required of the generator or the owner or operator of a treatment facility under Code of Federal Regulations, title 40, ~~section~~ sections 268.7 and 268.8, as ~~amended, and part 7045.1315~~ incorporated in part 7045.1390, whichever is applicable.

Q. For an on-site land disposal facility, the information contained in the notice required of the generator or owner or operator of a treatment facility under ~~part 7045.1315~~ Code of Federal Regulations, title 40, section 268.7, as incorporated in part 7045.1390, except for the manifest number, and the certification and demonstration, if applicable, required under Code of Federal Regulations, title 40, section 268.8, as ~~amended~~ incorporated in part 7045.1390, whichever is applicable.

R. For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required of the generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

S. For an on-site storage facility, the information contained in the notice, except the manifest number, and the certification and demonstration if applicable, required of the generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

[For text of item T, see M.R.]

7045.0482 REQUIRED REPORTS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Additional reports.** In addition to submitting the manifest discrepancy report described in part 7045.0476, subpart 3, and the annual reports and the unmanifested waste reports described in subparts 2 and 3, the owner or operator shall also report to the commissioner:

[For text of items A and B, see M.R.]

C. as otherwise required by parts 7045.0484, 7045.0532 to 7045.0538; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container standards in ~~Code of Federal Regulations, title 40, part 264, subparts AA and BB, as amended~~ parts 7045.0540, 7045.0547, and 7045.0548.

7045.0484 GROUNDWATER PROTECTION.

Subpart 1. **Scope.** This part applies as follows:

A. Except as provided in item B, the requirements of this part apply to owners or operators of facilities that treat, store, or dispose of hazardous waste. The owner or

operator must comply with the requirements in subitems (1) to (3) for all wastes or waste constituents contained in solid or hazardous waste management units at the facility regardless of the time the waste was placed in such units:

(1) all solid waste management units must comply with part 7045.0485;

(2) a surface impoundment, waste pile, land treatment unit, ~~or~~ landfill, or containment building that is required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirements of a landfill, that receives hazardous waste after July 26, 1982, is a regulated unit and must comply with the requirements of subparts 2 to 14 for detecting, characterizing, and responding to releases; and

(3) the financial responsibility requirements of part 7045.0485 apply to regulated units.

[For text of items B to D, see M.R.]

[For text of subps 2 to 14, see M.R.]

7045.0486 CLOSURE.

[For text of subpart 1, see M.R.]

Subp. 2. **Closure performance standard.** The owner or operator shall close the facility in a manner minimizing the need for further maintenance. Closure procedures must result in controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, in accordance with the closure requirements, including the requirements of parts 7045.0526, subpart 9; 7045.0528, subpart 9; 7045.0532, subpart 7; 7045.0534, subpart 7; 7045.0536, subpart 8; 7045.0538,

subpart 7; 7045.0539, subparts 2 to 4; and 7045.0542, subpart 8; and Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550.

Subp. 3. **Submittal and contents of closure plan.** The owner or operator of a hazardous waste facility shall submit a closure plan with the permit application, and the closure plan must be approved by the agency as part of the permit issuance procedure. The approved closure plan shall become a condition of any permit. The agency's approval must ensure that the approved closure plan is consistent with subparts 2, 4, and 5~~, and part~~; parts 7045.0484, groundwater protection, and 7045.0488, closure activities; and the applicable closure requirements of parts 7045.0526, subpart 9; 7045.0528, subpart 9; 7045.0532, subpart 7; 7045.0534, subpart 7; 7045.0536, subpart 8; 7045.0538, subpart 7; 7045.0539, subpart 2; ~~and~~ 7045.0542, subpart 8; and Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550.

A copy of the approved closure plan and all revisions to the plan must be furnished to the commissioner upon request, including request by mail, until final closure is completed and certified. The plan must identify steps necessary to completely or partially close the facility at any point during its intended operating life and to completely close the facility at the end of its intended operating life. The closure plan must at least include all of the following:

[For text of items A to F, see M.R.]

[For text of subps 4 to 6, see M.R.]

7045.0490 POSTCLOSURE.

Subpart 1. **Scope.** Except as otherwise provided in part 7045.0450, the provisions of subparts 2, 3, and parts 7045.0492 to 7045.0496 apply to:

A. the owner or operator of a hazardous waste disposal facility;

B. the owner or operator of a waste pile or surface impoundment that is required by part 7045.0532, subpart 7, or 7045.0534, subpart 7, to have a postclosure plan; ~~and~~

C. the owner or operator of tank systems that are required under part 7045.0528, subpart 9, to meet the requirements for landfills; and

D. the owner or operator of containment buildings that are required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirement for landfills.

[For text of subps 2 and 3, see M.R.]

7045.0498 FINANCIAL REQUIREMENTS.

Subpart 1. **Scope.** Parts 7045.0502, 7045.0504, and 7045.0518 to 7045.0524 apply to owners and operators of all hazardous waste facilities, except as provided otherwise in this part or in part 7045.0450, subpart 3.

Parts 7045.0506 and 7045.0508 apply only to owners and operators of:

A. disposal facilities;

B. waste piles, and surface impoundments from which the owner or operator intends to remove the wastes at closure, to the extent that he or she is required to develop a contingent closure and postclosure care plan in parts 7045.0532, subpart 7; and 7045.0534, subpart 7; ~~and~~

C. tank systems that are required under part 7045.0528, subpart 9, to meet the requirements for landfills; and

D. containment buildings that are required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirements for landfills.

Parts 7045.0512 to 7045.0516 apply only to owners and operators of facilities that treat, store, or dispose of hazardous waste in surface impoundments, waste piles, land

treatment units, ~~or~~ landfills, or containment buildings that are required under Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550, to meet the requirements of landfills.

The state and the federal government are exempt from the requirements of parts 7045.0498 to 7045.0524.

[For text of subp 2, see M.R.]

7045.0502 COST ESTIMATE FOR FACILITY CLOSURE.

Subpart 1. **Cost estimate requirements.** The owner or operator shall have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with parts 7045.0486 and 7045.0488 and applicable closure requirements in parts 7045.0526, subpart 9; 7045.0532, subpart 7; 7045.0534, subpart 7; 7045.0536, subpart 8; 7045.0538, subpart 7; 7045.0539, subparts 2 to 4; and 7045.0542, subpart 8; and Code of Federal Regulations, title 40, section 264.1102, as incorporated in part 7045.0550. The closure cost estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. The closure cost shall be estimated as follows:

[For text of items A to C, see M.R.]

[For text of subps 2 to 4, see M.R.]

7045.0504 FINANCIAL ASSURANCE FOR FACILITY CLOSURE.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Surety bond guaranteeing performance of closure.** The following apply to surety bonds that guarantee performance of closure:

[For text of item A, see M.R.]

B. The wording of the surety bond must be identical to the wording specified in part 7045.0524, subpart ~~2~~ 3.

[For text of items C to J, see M.R.]

[For text of subps 5 and 6, see M.R.]

Subp. 7. **Financial test and corporate guarantee for closure.** The financial test and corporate guarantee for closure is as follows:

[For text of items A to K, see M.R.]

L. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in items A to J, and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. The certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[For text of subitems (1) and (2), see M.R.]

(3) If the owner or operator fails to provide alternate financial assurance as specified in this part and obtain the written approval of alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor ~~shall~~ must provide alternative financial assurance in the name of the owner or operator.

[For text of subps 8 to 10, see M.R.]

7045.0508 FINANCIAL ASSURANCE FOR POSTCLOSURE CARE.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Financial test and corporate guarantee for postclosure care.** The financial test and corporate guarantee for postclosure care is as follows:

[For text of items A to L, see M.R.]

M. An owner or operator may meet the requirements ~~of~~ for this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor ~~shall~~ must meet the requirements for owners or operators in items A to K, and ~~shall~~ must comply with the terms of the corporate guarantee. The wording of the corporate guarantee ~~shall~~ must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

(1) If the owner or operator fails to perform postclosure care of a facility covered by the corporate guarantee in accordance with the postclosure plan and other permit requirements whenever required to do so, the guarantor ~~shall~~ must do so or establish a trust fund as specified in subpart 2 in the name of the owner or operator.

[For text of subitem (2), see M.R.]

(3) If the owner or operator fails to provide alternate financial assurance as specified in this part and to obtain the written approval of alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor ~~shall~~ must provide alternate financial assurance in the name of the owner or operator.

[For text of subps 8 to 10, see M.R.]

7045.0514 FINANCIAL ASSURANCE FOR CORRECTIVE ACTION.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Financial test and corporate guarantee for corrective action.** The financial test and corporate guarantee for corrective action is as follows:

[For text of items A to K, see M.R.]

L. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in items A to J and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[For text of subitems (1) and (2), see M.R.]

(3) If the owner or operator fails to provide alternate financial assurance as specified in this part and to obtain the written approval of alternate assurance from the commissioner within 90 days after receipt by both the owner or operator and the commissioner of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor ~~will~~ must provide alternative financial assurance in the name of the owner or operator.

[For text of subps 8 to 10, see M.R.]

7045.0518 LIABILITY REQUIREMENTS.

Subpart 1. **Coverage for sudden accidental occurrences.** An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of facilities, shall demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator shall have and maintain liability coverage for sudden

accidental occurrences in the amount of at least $1,000,000 per occurrence with an annual aggregate of at least $2,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated in one of the following ways:

[For text of items A and B, see M.R.]

C. An owner or operator may ~~demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance, as these mechanisms are specified in this part. The amounts of coverage demonstrated must total at least the minimum amounts required by subpart 1~~ meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 8.

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 9.

E. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a corporate guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

F. An owner or operator shall notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damages caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

Subp. 2. **Coverage for nonsudden accidental occurrences.** An owner or operator of a surface impoundment, landfill, land treatment facility, or disposal miscellaneous ~~disposal~~ unit ~~which~~ that is used to manage hazardous waste, or a group of such facilities, ~~shall~~ must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator ~~shall~~ must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3,000,000 per occurrence with an annual aggregate of at least $6,000,000, exclusive of legal defense costs. An owner or operator who must meet the requirements of this part may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least $4,000,000 per occurrence and $8,000,000 annual aggregate. This liability coverage may be demonstrated in one of the following ways:

[For text of items A and B, see M.R.]

C. An owner or operator may ~~demonstrate the required liability coverage through use of the financial test, insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance, as these mechanisms are specified in this part. The amounts of coverage must total at least the minimum amounts required by subpart 2~~ meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 8.

~~D. For existing facilities, the required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates listed below. The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding July 16, 1984 will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues will determine the date by which the coverage must be demonstrated. The dates are as follows:~~

~~(1) for an owner or operator with sales or revenues totaling $10,000,000 or more, six months after July 16, 1984;~~

~~(2) for an owner or operator with sales or revenues greater than $5,000,000 but less than $10,000,000, 18 months after July 16, 1984;~~

~~(3) for all other owners or operators, 30 months after July 16, 1984;~~

~~(4) for an owner or operator subject to the requirements of Code of Federal Regulations, title 40, section 264.147 (1983) on the date he or she is required to demonstrate coverage under Code of Federal Regulations, title 40, section 264.147 (1983) or on July 16, 1984, whichever is later.~~

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 9.

E. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a corporate guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amount required by this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

F. An owner or operator must notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

[For text of subps 3 to 5, see M.R.]

Subp. 6. **Financial test for liability coverage.** The financial test for liability coverage is as follows:

[For text of items A to G, see M.R.]

H. If the owner or operator no longer meets the requirements of item A, ~~he or she~~ the owner or operator shall obtain insurance, a letter of credit, a trust fund, or a corporate guarantee for the entire amount of required liability coverage as specified in this part. Evidence of ~~insurance~~ liability coverage must be submitted to the commissioner within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

[For text of item I, see M.R.]

Subp. 7. **Corporate guarantee for liability coverage.** The corporate guarantee for liability coverage is as follows:

A. Subject to item B, an owner or operator may meet the requirements of this part by obtaining a written corporate guarantee. The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in subpart 6. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8a. The corporate guarantee must be signed by two corporate officers of the parent corporation. A corporate resolution authorizing the parent corporation to provide the corporate guarantee for the subsidiary must be attached to the corporate guarantee. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as ~~provided~~ specified in subpart 6, item E. The terms of the corporate guarantee must provide that:

[For text of subitems (1) and (2), see M.R.]

B. A corporate guarantee may be used to satisfy the requirements of this part only if:

(1) in the case of corporations incorporated in the United States, the attorney general or insurance commissioner of the state in which the guarantor is incorporated

and of each state in which a facility covered by the corporate guarantee is located has submitted a written statement to the commissioner and the United States Environmental Protection Agency that a corporate guarantee executed as described in this part and part 7045.0524, subpart 8a, is a legally valid and enforceable obligation in that state; and

(2) in the case of corporations incorporated outside the United States, the non-United States corporation has identified a registered agent for service of process in each state in which a facility covered by the corporate guarantee is located and in the state in which it has its principal place of business, and the attorney general or insurance commissioner of each state in which a facility covered by the corporate guarantee is located and the state in which the guarantor corporation has its principal place of business, has submitted a written statement to the commissioner and to the United States Environmental Protection Agency that a corporate guarantee executed as described in this part and part 7045.0524, subpart 8a, is a legally valid and enforceable obligation in that state.

Subp. 8. **Letter of credit for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by obtaining an irrevocable standby letter of credit that conforms to the requirements of this subpart and submitting a copy of the letter of credit to the commissioner.

B. The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.

C. The wording of the letter of credit must be identical to the wording in part 7045.0524, subpart 11.

D. An owner or operator who uses a letter of credit to satisfy the requirements of this part may also establish a standby trust fund. Under the terms of a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee.

The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

E. The wording of the standby trust fund must be identical to the wording in part 7045.0524, subpart 13.

Subp. 9. **Trust fund for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by establishing a trust fund that conforms to the requirements of this subpart and submitting an originally signed duplicate of the trust agreement to the commissioner.

B. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

C. The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this part. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided or obtain other financial assurance as specified in this part to cover the difference. For purposes of this item, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden or nonsudden occurrences required to be provided by the owner or operator under this part, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

D. The wording of the trust fund must be identical to the wording in part 7045.0524, subpart 13.

7045.0524 WORDING OF INSTRUMENTS.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Letter from chief financial officer for corrective action, closure, and/or postclosure care.** A letter from the chief financial officer as specified in part 7045.0504, subpart 7; 7045.0508, subpart 7; 7045.0514, subpart 7; 7045.0612, subpart 6; or 7045.0616, subpart 6 must be worded as specified in this subpart, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

LETTER FROM CHIEF FINANCIAL OFFICER FOR CORRECTIVE ACTION, CLOSURE, AND/OR POSTCLOSURE CARE

[Agency Commissioner]

Minnesota Pollution Control Agency

I am the chief financial officer of [name and address of firm]. This letter is in support of this firm's use of the financial test to demonstrate financial assurance for corrective action, closure, or postclosure costs, as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624.

[Fill out the following five paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its identification number, name, address, and current corrective action, closure, and/or postclosure cost estimates. Identify each cost estimate as to whether it is for corrective action, closure, or postclosure care.]

1. This firm is the owner or operator of the following facilities for which financial assurance for corrective action, closure, or postclosure care is demonstrated through the financial test specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624. The current corrective action, closure, and/or postclosure cost estimates covered by the ~~text~~ test are shown for each facility: _____.

2. This firm guarantees, through the corporate guarantee specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624, the corrective action, closure, or postclosure care of the following facilities owned or operated by subsidiaries

of this firm. The current cost estimates for the corrective action, closure, or postclosure care so guaranteed are shown for each facility: _____.

3. In states other than Minnesota, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the corrective action, closure, or postclosure care of the following facilities either to the United States Environmental Protection Agency through the use of the financial test specified in Code of Federal Regulations, title 40, parts 264 or 265, subpart H, as amended, or to an authorized state through the use of a test equivalent or substantially equivalent to the specified financial test. The current corrective action, closure, and/or postclosure cost estimates covered by such a test are shown for each facility: _____.

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for corrective action, if required, closure, or if a disposal facility, postclosure care, is not demonstrated either to the United States Environmental Protection Agency or a state through the financial test or any other financial assurance mechanism specified in Code of Federal Regulations, title 40, parts 264 or 265, subpart H, as amended, or equivalent or substantially equivalent state mechanisms. The current corrective action, closure, and/or postclosure cost estimates not covered by such financial assurance are shown for each facility: _____.

5. This firm is the owner or operator of the following underground injection control (UIC) facilities for which financial assurance for plugging and abandonment is required under Code of Federal Regulations, title 40, part 144, as amended. The current closure cost estimates as required by Code of Federal Regulations, title 40, section 144.62, as amended, are shown for each facility.

This firm [insert "is required" or "is not required"] to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on [month, day]. The figures for the following items marked with an asterisk are derived from this firm's independently audited, year end financial statements for the latest completed fiscal year, ended [date].

[Fill in Alternative I if the criteria of Minnesota Rules, part 7045.0504, subpart 7, item B; 7045.0508, subpart 7, item B; 7045.0514, subpart 7, item B; 7045.0612, subpart 6, item B; 7045.0616, subpart 6, item B are used. Fill in Alternative II if the criteria of Minnesota Rules, part 7045.0504, subpart 7, item C; 7045.0508, subpart 7, item C; 7045.0514, subpart 7, item C; or 7045.0612, subpart 6, item C; or 7045.0616, subpart 6, item C are used.]

ALTERNATIVE I

1.	Sum of current corrective action, closure, and postclosure cost estimate [total of all cost estimates shown in the five paragraphs above]	$_____
*2.	Total liabilities [if any portion of the corrective actions, closure, or postclosure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4]	$_____
*3.	Tangible net worth	$_____
*4.	Net worth	$_____
*5.	Current assets	$_____
*6.	Current liabilities	$_____
7.	Net working capital [line 5 minus line 6]	$_____
*8.	The sum of net income plus depreciation, depletion, and amortization	$_____
*9.	Total assets in United States (required only if less than 90 percent of firm's assets are located in United States)	$_____

		YES	NO
10.	Is line 3 at least $10,000,000?	___	___
11.	Is line 3 at least 6 times line 1?	___	___
12.	Is line 7 at least 6 times line 1?	___	___
*13.	Are at least 90 percent of firm's assets located in the United States? If not, complete line 14	___	___

14.	Is line 9 at least 6 times line 1?		___	___
15.	Is line 2 divided by line 4 less than 2.0?		___	___
16.	Is line 8 divided by line 2 greater than 0.1?		___	___
17.	Is line 5 divided by line 6 greater than 1.5?		___	___

ALTERNATIVE II

1.	Sum of current corrective action, closure, and postclosure cost estimates [total of all cost estimates shown in the five paragraphs above]	$_____
2.	Current bond rating of most recent issuance of this firm and name of rating service	_____
3.	Date of issuance of bond	_____
4.	Date of maturity of bond	_____
*5.	Tangible net worth [if any portion of the corrective action, closure, and postclosure costs estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line]	$_____
*6	Total assets in United States (required only if less than 90 percent of firm's assets are located in United States)	$_____

			YES	NO
7.	Is line 5 at least $10,000,000?		___	___
8.	Is line 5 at least 6 times line 1?		___	___
*9.	Are at least 90 percent of firm's assets located in United States? If not, complete line 10		___	___
10.	Is line 6 at least 6 times line 1?		___	___

I hereby certify that the wording of this letter is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 6, as such rules were constituted on the date shown immediately below.

[SIGNATURE]

[NAME]

[TITLE]

[DATE]

[For text of subp 7, see M.R.]

Subp. 8. **Corporate guarantee for corrective action, closure, or postclosure care.** A corporate guarantee as specified in part 7045.0504, subpart 7; 7045.0508, subpart 7; 7045.0514, subpart 7; 7045.0612, subpart 6; or 7045.0616, subpart 6 must be worded as specified in this subpart, except that instructions in brackets must be replaced with the relevant information and the brackets deleted.

CORPORATE GUARANTEE FOR CORRECTIVE ACTION, CLOSURE, OR POSTCLOSURE CARE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of the state of [insert name of state], herein referred to as guarantor, to the Minnesota Pollution Control Agency (Agency), obligee, on behalf of our subsidiary [owner or operator] of [business address].

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Minnesota Rules, parts 7045.0504, subpart 7; 7045.0508, subpart 7; 7045.0514, subpart 7; 7045.0612, subpart 6; and 7045.0616, subpart 6.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: identification number, name, and address. Indicate for each whether guarantee is for corrective action, closure, postclosure care, or a combination of the three.]

3. "Closure plans" and "postclosure plans" as used below refer to the plans maintained as required by Minnesota Rules, parts 7045.0486 to 7045.0494 and 7045.0594 to 7045.0606 for the closure and postclosure care of facilities as identified above. "Corrective action plans" as used below refers to the plans maintained as required by

Minnesota Rules, part 7045.0484, subpart 2, item D; and subpart 14 for corrective action for the facilities as identified above.

4. For value received from [owner or operator], guarantor guarantees to the Agency that in the event that [owner or operator] fails to perform [insert "corrective action," "closure," "postclosure care," or any combination of the three] of the above facility(ies) in accordance with the corrective action, closure, or postclosure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624 as applicable, in the name of [owner or operator] in the amount of the current corrective action, closure, or postclosure cost estimates as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the Agency Commissioner and to [owner or operator] that he or she intends to provide alternate financial assurance as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624, as applicable, in the name of [owner or operator]. Within 120 days after the end of such fiscal year, the guarantor shall establish financial assurance unless [owner or operator] has done so.

6. The guarantor agrees to notify the Agency Commissioner by certified mail of a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy, as amended, naming guarantor as debtor, within ten days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by the Agency Commissioner of a determination that guarantor no longer meets the financial test criteria or that he or she is disallowed from continuing as a guarantor of corrective action, closure, or postclosure care, the guarantor shall establish alternate financial assurance as specified

in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624, as applicable, in the name of [owner or operator] unless [owner or operator] has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the corrective action, closure or postclosure plan, amendment or modification of the permit, the extension or reduction of the time of performance of corrective action, closure, postclosure, or any other modification or alteration of an obligation of the owner or operator pursuant to Minnesota Rules, parts 7045.0450 to ~~7045.0642~~ 7045.0651.

9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable financial assurance requirements of Minnesota Rules, parts 7045.0498 to 7045.0524 and 7045.0608 to 7045.0624 for the above listed facilities, except that guarantor may cancel this guarantee by sending notice by certified mail to the Agency Commissioner and to [owner or operator], the cancellation to become effective no earlier than 120 days after receipt of notice by both the Agency Commissioner and [owner or operator], as evidenced by the return receipts.

10. Guarantor agrees that if [owner or operator] fails to provide alternate financial assurance as specified in Minnesota Rules, parts 7045.0498 to 7045.0524 or 7045.0608 to 7045.0624, as applicable, and obtain written approval of such assurance from the Agency Commissioner within 90 days after a notice of cancellation by the guarantor is received by the Agency Commissioner from guarantor, guarantor shall provide alternate financial assurance in the name of [owner or operator].

11. Guarantor expressly waives notice of acceptance of this guarantee by the Agency or by [owner or operator]. Guarantor also expressly waives notice of amendments or modifications of the corrective action, closure, and/or postclosure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 8, as such rules were constituted on the date first above written.

Effective date: _____

[NAME OF GUARANTOR]

[AUTHORIZED SIGNATURE FOR GUARANTOR]

[NAME OF PERSON SIGNING]

[TITLE OF PERSON SIGNING]

[SIGNATURE OF WITNESS OR NOTARY]

Subp. 8a. **Corporate guarantee for liability coverage.** A corporate guarantee as specified in part 7045.0518, subpart 7, or 7045.0620, subpart 6, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CORPORATE GUARANTEE FOR LIABILITY COVERAGE

Guarantee made this [date] by [name of guaranteeing entity], a business corporation organized under the laws of [if incorporated within the United States, insert "the State of _____" and insert name of state; if incorporated outside the United States, insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the state of the principal place of business], referred to in this guarantee as the guarantor. This guarantee is made on behalf of our subsidiary [owner or operator] of [business address], to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in Minnesota Rules, parts 7045.0518, subpart 7, and 7045.0620, subpart 6.

2. [Owner or operator] owns or operates the following hazardous waste management facility(ies) covered by this guarantee: [List for each facility: Identification Number, name, and address; and if guarantor is incorporated outside the United States, list the name and address of the guarantor's registered agent in each state.] This corporate guarantee satisfies RCRA third party liability requirements for [insert "sudden" or "nonsudden" or "both sudden and nonsudden"] accidental occurrences in above named owner or operator facilities for coverage in the amount of [insert dollar amount] for each occurrence and [insert dollar amount] annual aggregate.

3. For value received from [owner or operator], guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by [sudden and/or nonsudden] accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that [owner or operator] fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by [sudden and/or nonsudden] accidental occurrences, arising from the operation of the above named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgment(s), award(s), or settlement agreement(s), up to the limits of coverage identified above.

4. Such obligation does not apply to any of the following:

(a) Bodily injury or property damage for which [insert owner or operator] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert owner or operator] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert owner or operator] under a workers' compensation, disability benefits, or unemployment compensation law, or any similar law.

(c) Bodily injury to:

(1) an employee of [insert owner or operator] arising from, and in the course of, employment by [insert owner or operator]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert owner or operator]. This exclusion applies:

(A) whether [insert owner or operator] may be liable as an employer or in any other capacity; and

(B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) any property owned, rented, or occupied by [insert owner or operator];

(2) premises that are sold, given away, or abandoned by [insert owner or operator] if the property damage arises out of any part of those premises;

(3) property loaned to [insert owner or operator];

(4) personal property in the care, custody, or control of [insert owner or operator]; or

(5) that particular part of real property on which [insert owner or operator] or any contractors or subcontractors working directly or indirectly on behalf of [insert owner or operator] are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the commissioner and to [owner or operator] that (s)he intends to provide alternate liability coverage as specified in Minnesota Rules, parts 7045.0518 and 7045.0620, as applicable, in the name of [owner or operator]. Within 120 days after the end of that fiscal year, the guarantor shall establish the liability coverage unless [owner or operator] has done so.

~~5.~~ 6. The guarantor agrees to notify the commissioner by certified mail of a voluntary or involuntary proceeding under Title 11 (bankruptcy), United States Code, as amended, naming guarantor as debtor, within ten days after commencement of the proceeding.

~~6.~~ 7. Guarantor agrees that within 30 days after being notified by the commissioner of a determination that guarantor no longer meets the financial test criteria or that (s)he is disallowed from continuing as a guarantor, (s)he shall establish alternate liability coverage as specified in Minnesota Rules, part 7045.0518 or 7045.0620 in the name of [owner or operator], unless [owner or operator] has done so.

~~7.~~ 8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements established by Minnesota Rules, parts 7045.0518 and 7045.0620, but the modification becomes effective only if the commissioner does not disapprove the modification within 30 days of receipt of notification of the modification.

~~8.~~ 9. Guarantor agrees to remain bound under this guarantee for so long as [owner or operator] must comply with the applicable requirements of Minnesota Rules, parts 7045.0518 and 7045.0620 for the above listed facility(ies), except as provided in paragraph ~~9~~ 10 of this agreement.

~~9.~~ 10. Guarantor may terminate this guarantee by sending notice by certified mail to the commissioner and to [owner or operator] but this guarantee may not be terminated

unless and until [owner or operator] obtains, and the commissioner approves alternate liability coverage complying with Minnesota Rules, parts 7045.0518 and/or 7045.0620.

~~10.~~ 11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

~~11.~~ 12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

~~12. Exclusions~~

~~This corporate guarantee does not apply to:~~

~~A. Bodily injury or property damage for which the owner or operator is obliged to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that the owner or operator would be obligated to pay in the absence of the contract or agreement.~~

~~B. Any obligation of the owner or operator under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.~~

~~C. Bodily injury to:~~

~~(1) an employee of the owner or operator arising from, and in the course of, employment by the owner or operator; or~~

~~(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of, employment by the owner or operator.~~

~~This exclusion applies whether the owner or operator is liable as an employer or in any other capacity. This exclusion also applies to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in item C.~~

~~D. Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.~~

~~E. Property damage to:~~

~~(1) any property owned, rented, or occupied by the owner or operator;~~

~~(2) premises that are sold, given away, or abandoned by the owner or operator if the property damage arises out of any part of those premises;~~

~~(3) property loaned to the owner or operator;~~

~~(4) personal property in the care, custody, or control of the owner or operator; and~~

~~(5) that particular part of real property on which the owner or operator or any contractors or subcontractors working directly or indirectly on behalf of the owner or operator are performing operations, if the property damage arises out of these operations.~~

13. The guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents:

(a) Certification from the principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties [insert principal] and [insert name and address of third-party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [principal's hazardous waste treatment, storage, or disposal facility] should be paid in the amount of $.....

[Signatures]

Principal

(Notary) Date

[Signatures]

Claimant(s)

(Notary) Date

(b) A valid final court order establishing a judgment against the principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the principal's facility or group of facilities.

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered [insert "primary" or "excess"] coverage.

I hereby certify that the wording of the guarantee is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 8a.

Effective date: _____

[Name of guarantor]

[Authorized signatures for guarantor]

[Names of persons signing]

[Titles of persons signing (Two corporate officers must sign for parent corporation.)]

Corporate resolution attached [(Attach resolution adopted by parent corporation authorizing parent corporation to provide the corporate guarantee for subsidiary)]

Signature of witness or notary:

_____

[For text of subps 9 and 10, see M.R.]

Subp. 11. **Letter of credit for liability coverage.** A letter of credit, as specified in part 7045.0518, subpart 8, or 7045.0620, subpart 7, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

IRREVOCABLE STANDBY LETTER OF CREDIT

[Name and Address of Issuing Institution]

[Agency Commissioner]

Minnesota Pollution Control Agency

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. ... in the favor of ["any and all third-party liability claimants" or insert name of trustee of the standby trust fund], at the request and for the account of [owner or operator's name and address] for third-party liability awards or settlements of [insert

dollar amount of the letter of credit] per occurrence and the annual aggregate amount of [insert dollar amount of the letter of credit] for sudden accidental occurrences and/or for third-party liability awards or settlements of [insert dollar amount of the letter of credit] per occurrence and the annual aggregate amount of [insert dollar amount of the letter of credit] for nonsudden accidental occurrences available on presentation of a sight draft bearing reference to this letter of credit No. ..., and [insert the following language if the letter of credit is being used without a standby trust fund:

"(1) a signed certificate reading as follows:

CERTIFICATE OF VALID CLAIM

The undersigned, as parties [insert principal] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operations of [principal's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $..... We hereby certify that the claim does not apply to any of the following:

(a) Bodily injury or property damage for which [insert principal] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert principal] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert principal] under a workers' compensation, disability benefits or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) an employee of [insert principal] arising from, and in the course of, employment by [insert principal]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert principal].

This exclusion applies:

(A) whether [insert principal] may be liable as an employer or in any other capacity; and

(B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) any property owned, rented, or occupied by [insert principal];

(2) premises that are sold, given away, or abandoned by [insert principal] if the property damage arises out of any part of those premises;

(3) property loaned to [insert principal];

(4) personal property in the care, custody, or control of [insert principal]; or

(5) that particular part of real property on which [insert principal] or any contractors or subcontractors working directly or indirectly on behalf of [insert principal] are performing operations, if the property damage arises out of these operations.

[Signatures]

Grantor

[Signatures]

Claimant(s)

; or

(2) a valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but such expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before

the current expiration date, we notify you, the commissioner, and [owner's or operator's name] by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us.

[Insert the following language if a standby trust fund is not being used: "In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered [insert "primary" or "excess" coverage."]

We certify that the wording of this letter of credit is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 11, as such rule was constituted on the date shown immediately below. [Signature(s) and title(s) of official(s) of issuing institution] [Date].

This credit is subject to [insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published and copyrighted by the International Chamber of Commerce," or "the Uniform Commercial Code"].

Subp. 12. **Trust agreement for liability coverage.**

A. A trust agreement, as specified in part 7045.0518, subpart 10, or 7045.0620, subpart 9, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the State of _____" or "a national bank"], the "trustee."

Whereas, the Minnesota Pollution Control Agency (Agency), an agency of the state of Minnesota, has established certain rules applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must

demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a trust to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A [on Schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, hereinafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of [insert dollar amount of the fund] per occurrence and [insert dollar amount of the fund] annual aggregate for sudden accidental occurrences and [insert dollar amount of the fund] per occurrence and [insert dollar amount of the fund] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) an employee of [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) whether [insert Grantor] may be liable as an employer or in any other capacity; and

(B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) any property owned, rented, or occupied by [insert Grantor];

(2) premises that are sold, given away, or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) property loaned to [insert Grantor];

(4) personal property in the care, custody, or control of [insert Grantor]; or

(5) that particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Agency.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[.....].

[Signatures]

Grantor

[Signatures]

Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstance then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held unless they are securities or other obligations of the Federal or State government;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) to transfer from time to time any or all of the assets of the Fund to any common commingled, or collective trust fund created by the Trustee in which the fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) to purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 81a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal

Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) to compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuations. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Agency Commissioner a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Agency Commissioner shall constitute a conclusively binding assent by the Grantor barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Agency Commissioner, and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the Agency Commissioner to the Trustee shall be in writing, signed by the Agency Commissioner, or the Commissioner's designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Agency hereunder has occurred. The Trustee shall have

no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Agency, except as provided for herein.

Section 15. Notice of Nonpayment. If a payment for bodily injury or property damage is made under Section 4 of this trust, the Trustee shall notify the Grantor of such payment and the amount(s) thereof within five (5) working days. The Grantor shall, on or before the anniversary date of the establishment of the Fund following such notice, either make payments to the Trustee in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under Section 4, or shall provide written proof to the Trustee that other financial assurance for liability coverage has been obtained equaling the amount necessary to return the trust to its value prior to the payment of claims. If the Grantor does not either make payments to the Trustee or provide the Trustee with such proof, the Trustee shall within ten working days after the anniversary date of the establishment of the Fund provide a written notice of nonpayment to the Agency Commissioner.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

The Agency Commissioner will agree to termination of the Trust when the owner or operator substitutes alternate financial assurance as specified in this section.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in

the administration of this Trust, or in carrying out any directions by the Grantor or the Agency Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of Minnesota.

Section 20. Interpretation. As used in Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in part 7045.0524, subpart 12, as such regulations were constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

B. The following is an example of the certification of acknowledgment which must accompany the trust agreement for a trust fund as specified in parts 7045.0518, subpart 10, or 7045.0620, subpart 9.

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

Subp. 13. **Standby trust agreement for liability coverage.**

A. A standby trust agreement, as specified in part 7045.0518, subpart 8, or 7045.0620, subpart 7, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

STANDBY TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into as of [date] by and between [name of the owner or operator] a [name of a State] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert, "incorporated in the State of _____" or "a national bank"], the "trustee."

Whereas, the Minnesota Pollution Control Agency (Agency), an agency of the State of Minnesota, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term Grantor means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term Trustee means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This Agreement pertains to the facilities identified on attached Schedule A [on Schedule A, for each facility list the identification number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement].

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund, hereafter the "Fund," for the benefit of any and all third parties injured or damaged by [sudden and/or nonsudden] accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of [insert dollar amount of the fund] per occurrence and [insert dollar amount of the fund] annual aggregate for sudden accidental occurrences and [insert dollar amount of the fund] per occurrence and [insert dollar amount of the fund] annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:

(a) Bodily injury or property damage for which [insert Grantor] is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This

exclusion does not apply to liability for damages that [insert Grantor] would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of [insert Grantor] under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) an employee or [insert Grantor] arising from, and in the course of, employment by [insert Grantor]; or

(2) the spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by [insert Grantor].

This exclusion applies:

(A) whether [insert Grantor] may be liable as an employer or in any other capacity; and

(B) to any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle, or watercraft.

(e) Property damage to:

(1) any property owned, rented, or occupied by [insert Grantor];

(2) premises that are sold, given away, or abandoned by [insert Grantor] if the property damage arises out of any part of those premises;

(3) property loaned [insert Grantor];

(4) personal property in the care, custody, or control of [insert Grantor]; or

(5) that particular part of real property on which [insert Grantor] or any contractors or subcontractors working directly or indirectly on behalf of [insert Grantor] are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered [insert "primary" or "excess"] coverage.

The Fund is established initially as consisting of the proceeds of the letter of credit deposited into the Fund. Such proceeds and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Agency.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third-party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted: The Trustee shall satisfy a third-party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

CERTIFICATION OF VALID CLAIM

The undersigned, as parties [insert Grantor] and [insert name and address of third party claimant(s)], hereby certify that the claim of bodily injury and/or property damage caused by a [sudden or nonsudden] accidental occurrence arising from operating [Grantor's] hazardous waste treatment, storage, or disposal facility should be paid in the amount of $[ ].

[Signature] Grantor

[Signature(s)] Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of the proceeds from the letter of credit drawn upon by the Trustee in accordance with the requirements of Minnesota Rules, part 7045.0524, subpart 11, and Section 4 of this Agreement.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge the trustee's duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(a) securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, United States Code, title 15, section 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or State government;

(b) the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and

(c) the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) to purchase shares in any investment company registered under the Investment Company Act of 1940, United States Code, title 15, section 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of the Agreement or by law, the Trustee is expressly authorized and empowered:

(a) to sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal

Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) to compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements to the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may reside or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment; the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction

for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the Agency Commissioner and the present Trustee by certified mail ten days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests, certifications of valid claims, and instructions to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Agency Commissioner hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or the Agency, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Commissioner, or by the Trustee and the Agency Commissioner, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be paid to the Grantor.

The Agency Commissioner will agree to termination of the Trust when the owner or operator substitutes alternative financial assurance as specified in this section.

Section 16. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor and the Agency Commissioner issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced in accordance with the laws of the State of Minnesota.

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation of the legal efficacy of this Agreement.

In Witness Whereof, the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Minnesota Rules, part 7045.0524, subpart 13, as such rule was constituted on the date first above written.

[Signature of Grantor]

[Title]

Attest:

[Title]

[Seal]

[Signature of Trustee]

Attest:

[Title]

[Seal]

B. The following is an example of the certification of acknowledgment which must accompany the trust agreement for a standby trust fund as specified in parts 7045.0518, subpart 8, or 7045.0620, subpart 7.

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation], the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

[Signature of Notary Public]

7045.0526 USE AND MANAGEMENT OF CONTAINERS.

Subpart 1. **Scope.** This part applies to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as part 7045.0450 provides otherwise. Under ~~parts~~ part 7045.0127 and ~~7045.0135, subpart 4, item C~~ Code of Federal Regulations, title 40, section 261.33(c), as incorporated in part 7045.0135, if a hazardous waste is emptied from a container, the residue remaining in the container is not considered a hazardous waste if the container is empty, as defined in part 7045.0127. In that event, management of the container is exempt from the requirements of this part.

[For text of subps 2 to 5, see M.R.]

Subp. 6. **Containment.** Requirements for containment systems are as described in items A to E.

[For text of items A and B, see M.R.]

C. Spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. If the collected material is a hazardous waste as defined in parts 7045.0102 to ~~7045.0143~~ 7045.0155, it must be managed as a hazardous waste ~~according to all applicable requirements of~~ in accordance with parts 7045.0205 to 7045.1030. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of section 402 of the federal Clean Water ~~Pollution Control Act Amendments of 1972~~, United States Code, title 33, section 1342, as amended.

[For text of item D, see M.R.]

E. Storage areas that store containers holding wastes F020, F021, F022, F023, F026, F027, and F028 from part 7045.0135, subpart ~~2~~ 1a, item B, that do not contain free liquids must have a containment system defined by item A.

Subp. 7. **Special requirements for ignitable or reactive waste.** Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line when physically possible based on the dimensions of the property. When it is not physically possible to place containers at least 50 feet from the property line, based on the dimensions of the property, the ignitable or reactive waste must be placed at least as far as the specified minimum distance from property line found in ~~Table Number 79.503-F of~~ the Minnesota ~~Uniform~~ State Fire Code ~~as incorporated by reference in part 7510.3510~~, chapter 7510. Nothing in this subpart shall relieve the facility owner or operator from the obligation to comply with any local, state, or federal law governing storage of these wastes.

[For text of subps 8 and 9, see M.R.]

Subp. 10. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a container in accordance with parts 7045.0540, 7045.0547, and 7045.0548.

7045.0528 TANK SYSTEMS.

Subpart 1. **Scope.** This part applies to owners and operators of facilities that use tank systems, including tank systems, sumps, and other such collection devices or systems used in conjunction with drip pads, as defined in part 7045.0020 and regulated under part 7045.0541, to treat or store hazardous waste, except as part 7045.0450, and items A and B provide otherwise.

A. Tank systems that are used to store or treat hazardous waste that contains no free liquids and are situated inside a building with an impermeable floor are exempted from the requirements in subpart 4. To demonstrate the absence or presence of free liquids in the stored or treated waste, ~~EPA~~ the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," ~~(~~EPA publication ~~No.~~ SW-846 ~~) must be used~~, incorporated in part 7045.0065, item D.

[For text of item B, see M.R.]

[For text of subps 2 to 9, see M.R.]

Subp. 10. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a tank unless:

[For text of items A and B, see M.R.]

C. the tank is used solely for emergencies.

The owner or operator of a facility that treats or stores ignitable or reactive waste in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in the buffer zone requirements for tanks contained in ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510. As required by part 7045.0458, the waste analysis plan must include analyses needed to comply with these special requirements for ignitable or reactive waste. Additional requirements for ignitable and reactive wastes

are contained in part 7045.0456, subpart 1. Part 7045.0456, subpart 3 also requires waste analysis, trial tests, or other documentation to ensure compliance with part 7045.0456, subpart 2. As required by part 7045.0478, the owner or operator shall place the results of each waste analysis and trial test, and any documented information, in the operating record of the facility.

[For text of subp 11, see M.R.]

Subp. 12. **Air emission standards.** The owner or operator of a facility must manage all hazardous waste placed in a tank in accordance with parts 7045.0540, 7045.0547, and 7045.0548.

7045.0532 SURFACE IMPOUNDMENTS.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Closure and postclosure care.** The requirements of closure and postclosure care are as follows:

A. At closure, the owner or operator shall:

(1) remove or decontaminate all waste residues, contaminated containment system components including liners, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless they are shown to not be hazardous ~~according to~~ in accordance with parts 7045.0102 to ~~7045.0143~~ 7045.0155; or

[For text of subitem (2), see M.R.]

[For text of items B to E, see M.R.]

Subp. 8. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a surface impoundment, unless the waste and impoundment satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[For text of items A to C, see M.R.]

Subp. 9. **Special requirements for incompatible wastes.** Incompatible wastes, or incompatible wastes and materials, must not be placed in the same surface impoundment unless compliance with part 7045.0456, subpart 2 is maintained. For examples of potentially incompatible wastes, or incompatible waste and materials, see part 7045.0543, subpart 1, item C.

Subp. 10. **Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous waste F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a surface impoundment.

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in surface impoundments unless the owner or operator operates the surface impoundment in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that additional requirements are necessary for surface impoundments used to treat, store, or dispose of hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

Subp. 11. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a surface impoundment in accordance with parts 7045.0540 and 7045.0548.

7045.0534 WASTE PILES.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Closure and postclosure care.** Closure and postclosure requirements are as follows:

A. At closure, the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components including liners, contaminated subsoils, and structures and equipment contaminated with waste and leachate; and manage them as hazardous waste unless they are shown to not be hazardous ~~according to~~ in accordance with parts 7045.0102 to ~~7045.0143~~ 7054.0150.

[For text of items B to D, see M.R.]

Subp. 8. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a waste pile unless the waste and waste pile satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[For text of items A and B, see M.R.]

[For text of subp 9, see M.R.]

Subp. 10. **Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous waste F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a surface impoundment.

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in surface impoundments unless the owner or operator operates the surface impoundment in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that additional requirements are necessary for surface impoundments used to treat, store, or dispose of hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

7045.0536 LAND TREATMENT.

[For text of subps 1 to 8, see M.R.]

Subp. 9. **Ignitable or reactive waste.** The owner or operator shall not apply ignitable or reactive waste to the treatment zone unless the waste and the treatment zone meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[For text of items A and B, see M.R.]

[For text of subp 10, see M.R.]

Subp. 11. **Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous wastes F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a land treatment unit.

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be managed at land treatment units unless the owner or operator operates the land treatment unit in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that the additional requirements are necessary for land treatment facilities used to treat or dispose of hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

7045.0538 LANDFILLS.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Closure and postclosure care.** Closure and postclosure care requirements are as follows:

[For text of item A, see M.R.]

B. After final closure, the owner or operator shall comply with all postclosure requirements contained in parts 7045.0488 to 7045.0494 including maintenance and monitoring throughout the postclosure care period specified in the permit under part 7045.0488. The owner or operator shall:

[For text of subitems (1) to (3), see M.R.]

(4) maintain and monitor the leak detection system in accordance with subparts 3, item C, subitems (3), unit (d), and (4); and 5, item C, and comply with all other applicable leak detection system requirements of ~~this part~~ parts 7045.0450 to 7045.0551 governing facility standards;

[For text of subitems (5) to (8), see M.R.]

[For text of item C, see M.R.]

Subp. 8. **Special requirements for ignitable or reactive waste.** Special requirements for ignitable or reactive waste are as follows:

A. Except as provided in item B and subpart 12, ignitable or reactive waste must not be placed in a landfill, unless the waste and landfill meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under part 7045.0131, subpart 2 or 5, and compliance with part 7045.0456, subpart 2 is maintained.

B. Except for prohibited wastes which remain subject to treatment standards in ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part 7045.1390, ignitable wastes in containers may be landfilled without meeting the requirements of item A, provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

[For text of subp 9, see M.R.]

Subp. 10. **Special requirements for liquid waste.** Special requirements for liquid waste are as follows:

A. The placement in any landfill of bulk or noncontainerized liquid hazardous waste or waste containing free liquids, whether or not ~~absorbents~~ sorbents have been added, is prohibited.

B. Containers holding free liquids must not be placed in a landfill unless:

(1) all free-standing liquid has been removed by decanting, or other methods; has been mixed with ~~absorbent~~ sorbent or solidified so that freestanding liquid is no longer observed; or has been otherwise eliminated;

(2) the container is very small, such as an ~~ampule~~ ampoule; or

(3) the container is a laboratory pack as defined in subpart 12 and is disposed of in accordance with subpart 12.

C. To demonstrate the ~~presence or~~ absence or presence of free liquids in either a containerized or a bulk waste, the following test must be ~~demonstrated using the Paint Filter Liquids Test,~~ used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," EPA publication ~~number~~ SW-846, incorporated in part 7045.0065, item D.

D. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are materials listed or described in subitem (1) or materials that pass one of the tests in subitem (2).

(1) Nonbiodegradable sorbents:

(a) inorganic minerals, other inorganic materials, and elemental carbon (for example, aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite),

vermiculites, and zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), and diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; and activated charcoal/activated carbon);

(b) high molecular weight synthetic polymers (for example, polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene, and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(c) mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents must use the following methods. The methods and tests in this subitem are incorporated by reference, are not subject to frequent change, and are available through the Minitex interlibrary loan system:

(a) the sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a), Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi;

(b) the sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b), Standard Practice for Determining Resistance of Plastics to Bacteria; or

(c) the sorbent material is determined to be nonbiodegradable under OECD test 301B: CO_2 Evolution (Modified Sturm Test).

[For text of subp 11, see M.R.]

Subp. 12. **Disposal of small containers of hazardous waste in overpacked drums.** Small containers of hazardous waste in overpacked drums, or laboratory packs, may be placed in a landfill if the requirements of items A to F are met:

A. Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the contained waste. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type ~~specified~~ authorized in the United States Department of Transportation hazardous materials regulations under Code of Federal Regulations, title 49, parts 173, 178, ~~and~~ 179, and 180, as amended, if those regulations specify a particular inside container for the waste.

B. The inside containers must be overpacked in ~~an open~~ a removable head metal shipping container as specified in the United States Department of Transportation regulations under Code of Federal Regulations, title 49, section 173.12 and parts 178 ~~and~~, 179, and 180, as amended~~, of no more than 415 liter (110 gallon) capacity and~~. The inside containers must be surrounded by, at a minimum, a sufficient quantity of ~~absorbent~~ chemically compatible sorbent material, determined to be nonbiodegradable in accordance with subpart 10, item D, to completely ~~absorb~~ sorb all of the liquid contents of the inside containers. The gross weight of the complete package must not exceed 205 kilograms (452 pounds). The metal outer container must be full after ~~packing~~ it has been packed with inside containers and ~~absorbent~~ sorbent materials.

C. The ~~absorbent~~ sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with part 7045.0456, subpart 2.

[For text of items D and E, see M.R.]

F. The disposal is in compliance with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390. Persons who incinerate lab packs ~~according to part 7045.1360~~ in accordance with Code of Federal Regulations, title 40, section 268.42, as incorporated in part 7045.1390, may use fiber drums in place of metal outer containers. The fiber drums

must meet United States Department of Transportation specifications in Code of Federal Regulations, title 49, section 173.12, as amended, and be overpacked ~~according to the requirements~~ in accordance with item B.

Subp. 13. **Special requirements for hazardous wastes F020, F021, F022, F023, F026, F027, and F028.** The following requirements apply to the hazardous wastes indicated:

A. Hazardous wastes F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be placed in a landfill.

B. Hazardous waste F028 and treatment residues and soils contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be managed at landfills unless the owner or operator operates the landfill in accordance with all applicable requirements of this part and in accordance with a management plan that is approved by the commissioner considering the following factors:

[For text of subitems (1) to (4), see M.R.]

C. The commissioner shall impose additional design, operating, and monitoring requirements if the commissioner finds that the additional requirements are necessary for landfills used to dispose of hazardous waste F028 and treatment residues and soil contaminated with hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, in order to reduce the possibility of migration of these wastes to ground water, surface water, or air so as to protect human health and the environment.

7045.0539 MISCELLANEOUS UNITS.

[For text of subpart 1, see M.R.]

Subp. 2. **Environmental performance standards.** A miscellaneous unit must be located, designed, constructed, operated, maintained, and closed in a manner that will ensure protection of human health and the environment. Permits for miscellaneous units are to contain the terms and provisions necessary to protect human health and the environment, including, but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases of hazardous waste or hazardous constituents from the unit. Permit terms and provisions shall include those requirements of parts ~~7023.9000 to 7023.9050,~~ 7045.0526 to 7045.0542, 7045.0547, and 7045.0548, and chapter 7001 that are appropriate for the miscellaneous unit being permitted. Protection of human health and the environment includes, but is not limited to:

[For text of items A to C, see M.R.]

[For text of subps 3 and 4, see M.R.]

7045.0540 AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers must comply with Code of Federal Regulations, title 40, part 264, subpart CC, air emission standards for tanks, surface impoundments, and containers, sections 264.1080 to 264.1090, as amended, which are incorporated by reference subject to the exceptions in subpart 2.

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.**

A. The agency does not incorporate the following Code of Federal Regulations, title 40, part 264, subpart CC provisions, as amended:

(1) Code of Federal Regulations, title 40, section 264.1080(d) to (g), governing specific exclusions; and

(2) Code of Federal Regulations, title 40, section 264.1082(c)(4)(ii), governing authority that EPA cannot delegate to states.

B. Part 7045.0090, adoption and incorporation by reference, also applies.

7045.0542 THERMAL TREATMENT.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Performance standards.** A thermal treatment facility thermally treating hazardous waste must be designed, constructed, and maintained so that, when operated in accordance with operating requirements specified under subpart 6 it will comply with all federal and state air quality rules and regulations and will meet the performance standards of items A to E, whichever are applicable:

[For text of items A to D, see M.R.]

E. A thermal treatment facility thermally treating hazardous wastes F020, F021, F022, F023, F026, and F027 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must achieve a destruction and removal efficiency ("DRE") of 99.9999 percent for each principal organic hazardous constituent designated in its permit. This performance must be demonstrated on principal organic hazardous constituents that are more difficult to incinerate than tetra-, penta-, and hexachlorodibenzo-p-dioxins and dibenzofurans. DRE is determined for each principal organic hazardous constituent from the equation in item A. In addition, the owner or operator of the thermal treatment facility must notify the commissioner of the intent to burn waste F020, F021, F022, F023, F026, or F027.

[For text of subps 5 to 9, see M.R.]

7045.0543 APPENDICES TO FACILITY STANDARDS.

Subpart 1. **Incorporation of federal regulations.** The following appendices found in Code of Federal Regulations, title 40, part 264, as amended, are incorporated by reference:

A. Appendix I, Recordkeeping Instructions;

B. Appendix IV, Cochran's Approximation to the Behrens-Fisher Students' T-test;

C. Appendix V, Examples of Potentially Incompatible Waste; and

D. Appendix IX, Ground Water Monitoring List.

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

7045.0544 COCHRAN'S APPROXIMATION TO THE BEHRENS-FISHER STUDENTS' T-TEST.

Subpart 1. **In general.** ~~Subpart 2 describes Cochran's approximation to the Behrens-Fisher Students' t-test. Subpart 3 presents the standard t-tables at the 0.05 level of significance.~~ Part 7045.0543, subpart 1, item B, incorporates this test by reference.

Subp. 2. [See repealer.]

Subp. 3. [See repealer.]

7045.0550 CONTAINMENT BUILDINGS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of facilities that store or treat hazardous waste in containment buildings must comply with Code of Federal Regulations, title 40, part 264, subpart DD, Containment Buildings, sections 264.1100 to 264.1110, as amended, which is incorporated by reference subject to the exceptions in subpart 2.

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

7045.0552 FACILITIES GOVERNED BY INTERIM STATUS.

Subpart 1. **General requirements.** Parts 7045.0552 to ~~7045.0642~~ 7045.0651 establish minimum standards for the management of hazardous waste during the period of interim status and until certification of final closure or, if the facility is subject to postclosure requirements, until postclosure responsibilities are fulfilled. Except as provided in Code of Federal Regulations, title 40, section 265.1080(b), as incorporated in part 7045.0645, the standards in parts 7045.0552 to 7045.0651, and the standards for the corrective action management units in part 7045.0545, temporary units in part 7045.0546, and staging piles in part 7045.0547, apply to: (1) owners and operators of facilities that treat, store, or dispose of hazardous waste who have fully complied with the requirements for interim status under chapter 7001 and section 3005(e) of the federal Resource Conservation and Recovery Act (RCRA) until either a permit is issued under chapter 7001 and section 3005 of RCRA or until applicable interim status closure and postclosure responsibilities are fulfilled and (2) those owners and operators of facilities in existence on November 19, 1980, who have failed to provide timely notification as required by section 3010(a) of RCRA or failed to file Part A of the permit application in chapter 7001. These standards, and those in parts 7045.0545 to 7045.0547, apply to owners and operators of existing facilities who have fully complied with the requirements for state or federal interim status until a permit is issued or until applicable interim status closure and postclosure responsibilities are fulfilled, and those who have failed to achieve state or federal interim status.

Parts 7045.0552 to ~~7045.0642~~ 7045.0651 apply to the owners and operators of all facilities that treat, store, or dispose of hazardous waste referred to in ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, land disposal restrictions, and those restrictions are considered material conditions or requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651, interim status standards.

Subp. 1a. **Applicability for owners and operators of facilities not regulated as hazardous waste facilities by federal regulation.** Owners and operators of hazardous

waste facilities that are not federally regulated as hazardous waste facilities that are, for example, regulated as facilities by state rule only, are subject to the applicable requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651 on the effective date of any rules that make the facility subject to regulation. The facility shall submit a Part B application for a hazardous waste facility permit to the commissioner within one year of the effective date of any rules that first make the facility subject to the requirement to obtain a hazardous waste facility permit.

[For text of subp 2, see M.R.]

Subp. 3. **Exemptions.** The requirements of parts 7045.0552 to ~~7045.0648~~ 7045.0651 do not apply to the following specific waste management units, facilities, or activities, although all other waste management activities of the owner or operator may be regulated:

[For text of item A, see M.R.]

B. a facility managing recyclable hazardous wastes subject to regulation under part 7045.0125, 7045.0665, 7045.0675, or 7045.0685; however, this exemption does not apply where part 7045.0125, 7045.0665, 7045.0675, or 7045.0685 makes the requirements of parts 7045.0552 to ~~7045.0648~~ 7045.0651 applicable by cross-reference;

[For text of items C to E, see M.R.]

F. an elementary neutralization unit, a pretreatment unit, or a wastewater treatment unit, if the unit does not receive hazardous waste from generators other than the owner or operator of the unit, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 high TOC subcategory defined in Code of Federal Regulations, title 40, section 268.40, Table of Treatment Standards for Hazardous Wastes, as incorporated in part 7045.1390), or reactive (D003) waste, to remove the characteristic before land disposal, the owner or operator must comply with part 7045.0562, subpart 2;

[For text of items G to I, see M.R.]

J. (1) except as provided in subitem (2), treatment or containment activities during immediate response to any of the following situations: a discharge of a hazardous waste, an imminent and substantial threat of a discharge of a hazardous waste, or a discharge of a material which, when discharged, becomes a hazardous waste;

(2) a facility otherwise regulated by parts 7045.0552 to ~~7045.0642~~ 7045.0651 shall comply with all applicable requirements of parts 7045.0395, 7045.0397, 7045.0558, and 7045.0566 to 7045.0576; or

(3) a person who is covered by subitem (1) and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651 and the agency's permitting procedures for those activities;

K. treatment of hazardous waste by the generator in the generator's accumulation tanks or containers in accordance with part 7045.0292. If the treatment involves evaporation of aqueous waste or polymerization of polyester or other chemical fixation treatment processes in open containers, the generator is exempt from parts 7045.0552 to ~~7045.0642~~ 7045.0651, but before beginning the treatment process must submit to the commissioner the information required under part 7045.0539, subpart 2, items A to C, that is relevant to the treatment activity and must be notified by the commissioner that the treatment activity is approved. The commissioner shall approve the treatment activity if the commissioner finds that the treatment activity will not endanger human health and the environment; or

[For text of item L, see M.R.]

Subp. 4. **Restrictions.** Hazardous wastes F020, F021, F022, F023, F026, F027, and F028 listed under part 7045.0135, subpart ~~2~~ 1a, item B, must not be managed at facilities governed by interim status unless:

[For text of items A to C, see M.R.]

7045.0556 GENERAL FACILITY STANDARDS.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Required notices.** Notices are required in the following situations:

[For text of items A and B, see M.R.]

C. Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the postclosure care period, the owner or operator shall notify the new owner or operator in writing of the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651. An owner's or operator's failure to notify the new owner or operator of these requirements does not relieve the new owner or operator of the obligation to comply with all applicable requirements.

[For text of item D, see M.R.]

Subp. 4. **Security.** Security measures include the following:

A. The owner or operator shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility, unless:

[For text of subitem (1), see M.R.]

(2) disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651.

[For text of items B and C, see M.R.]

Subp. 5. **General inspection requirements.** General inspection requirements are listed in items A to E.

[For text of items A and B, see M.R.]

C. The frequency of inspection may vary for the items on the schedule. However, ~~it~~ the frequency must be based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration ~~or~~, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the terms and frequencies called for in parts 7045.0626, subpart 5; 7045.0628, subparts 4 and 7; 7045.0630, subpart 5; 7045.0632, subpart 9; 7045.0634, subpart 4; 7045.0638, subpart 2c; 7045.0640, subpart 4; and 7045.0642, subpart 4; and the process vent ~~and~~, equipment leak , and tank, surface impoundment, and container standards in Code of Federal Regulations, title 40, sections ~~264.1033, 264.1052, 264.1053, and 264.1058~~ 265.1033, 265.1052, 265.1053, and 265.1058, as amended, and sections 265.1084 to 265.1090(b), as incorporated in part 7045.0645.

[For text of items D and E, see M.R.]

[For text of subps 6 to 8, see M.R.]

7045.0564 WASTE ANALYSIS REQUIREMENTS.

Subpart 1. **Waste analysis.** The analysis must comply with the requirements in items A to D.

A. Before an owner or operator treats, stores, or disposes of any hazardous waste, or nonhazardous waste if applicable under part 7045.0596, subpart 2a, the owner or operator shall obtain a detailed chemical and physical analysis of a representative sample of the waste. This analysis must contain all the information which must be known in order to treat, store, or dispose of the waste in accordance with the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651 and ~~7045.1300 to 7045.1380~~ 7045.1390.

B. The analysis may include data developed under parts 7045.0102 to ~~7045.0143~~ 7045.0155, and existing published or documented data on the hazardous waste or on

hazardous waste generated from similar processes, including data obtained from the generator.

[For text of items C and D, see M.R.]

Subp. 2. **Waste analysis plan.** The owner or operator shall develop and follow a written waste analysis plan which describes the procedures the owner or operator will carry out to comply with subpart 1. The owner or operator shall keep this plan at the facility. The plan must specify:

[For text of items A to E, see M.R.]

F. Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in parts 7045.0628, subpart 12; 7045.0630, subpart 4; 7045.0632, subpart 3; 7045.0634, subpart 3; 7045.0638, subpart 7; 7045.0640, subpart 2; and 7045.0642, subpart 3; ~~and 7045.1315~~ Code of Federal Regulations, title 40, section 268.7, as incorporated in part 7045.1390; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures in Code of Federal Regulations, title 40, sections ~~264.1034(d) and 264.1063(d)~~ 265.1034(d) and 265.1063(d), as amended, and section 265.1084, as incorporated in part 7045.0645.

G. For off-site facilities, the waste analysis plan must also specify the procedures ~~which~~ that will be used to inspect and, if necessary, analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. The plan must describe:

(1) the procedures ~~which~~ that will be used to determine the identity of each movement of waste managed at the facility; ~~and~~

(2) the sampling method ~~which~~ that will be used to obtain a representative sample of the waste to be identified, if the identification method includes sampling; and

(3) the procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

H. For surface impoundments exempted from the land disposal restrictions under ~~part 7045.1310~~ Code of Federal Regulations, title 40, section 268.4, as incorporated in part 7045.1390, the procedures and schedule for:

(1) the sampling of impoundment contents;

(2) the analysis of test data; and

(3) the annual removal of residues which are not delisted under part 7045.0075, subpart 2, or which exhibit a characteristic of hazardous waste under part 7045.0131, and either do not meet applicable treatment standards of ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part 7045.1390, or, where no treatment standards have been established, such residues are prohibited from land disposal under ~~parts 7045.1320 to 7045.1333~~ Code of Federal Regulations, title 40, sections 268.30 to 268.35, as incorporated in part 7045.1390, or RCRA section 3004(d).

I. For owners and operators seeking an exemption to the air emission standards in part 7045.0540 in accordance with Code of Federal Regulations, title 40, section 265.1083, as incorporated in part 7045.0645:

(1) if direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis and the results of the analysis of test data to verify the exemption; and

(2) if knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous

waste, if the waste is received from off site, that is used as the basis for knowledge of the waste.

7045.0584 OPERATING RECORD.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Record information.** The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility:

[For text of items A and B, see M.R.]

C. A description and the quantity of each hazardous waste received, and the method and date of treatment, storage, or disposal at the facility in accordance with the record-keeping instructions in Code of Federal Regulations, title 40, part 265, Appendix I, as incorporated in part 7045.0643.

[For text of item D, see M.R.]

E. Records and results of waste analyses, waste determinations, and trial tests performed as specified in parts 7045.0564; 7045.0628, subpart 12; 7045.0630, subpart 4; 7045.0632, subpart 3; 7045.0634, subpart 3; 7045.0638, subpart 7; 7045.0640, subpart 2; and 7045.0642, subpart 3; ~~7045.1310; and 7045.1315~~ Code of Federal Regulations, title 40, sections 268.4(a) and 268.7, as incorporated in part 7045.1390; and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures in Code of Federal Regulations, title 40, sections ~~264.1034 and 264.1063~~ 265.1034 and 265.1063, as amended, and section 265.1084, as incorporated in part 7045.0645.

[For text of items F and G, see M.R.]

H. Monitoring, testing, or analytical data, and corrective action where required by parts 7045.0556, subpart 8; 7045.0590, subparts 1, 6, 7, and 8; 7045.0592, subparts 1 and 7; 7045.0628, subparts 2, 4, and 7; 7045.0630, subparts 2a, 3, and 5; 7045.0632,

subparts 4b, 8, and 9; 7045.0634, subparts 4 and 6, item D, subitem (1); 7045.0636; 7045.0638, subparts 2a, 2b, and 2c; and 7045.0640, subpart 4, and the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container test methods and procedures and record keeping requirements in Code of Federal Regulations, title 40, sections ~~264.1034~~ 265.1034(c) to (f), ~~264.1035, 264.1063~~ 265.1035, 265.1063(d) to (i), and ~~264.1064~~ 265.1064, as amended, and sections 265.1083 to 265.1090, as incorporated in part 7045.0645. As required by parts 7045.0590, subparts 6 and 7; and 7045.0592, subpart 7, monitoring data at disposal facilities must be kept throughout the postclosure period.

[For text of item I, see M.R.]

J. Records of the quantities and date of placement of each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted ~~under part 7045.0075, subpart 8 or 9,~~ by the United States Environmental Protection Agency under Code of Federal Regulations, title 40, section 268.5, monitoring data required pursuant to a petition under part 7045.0075, subpart 9, or a certificate and demonstration under Code of Federal Regulations, title 40, section 268.8, as ~~amended~~ incorporated in part 7045.1390, and the notice required by a generator under ~~part 7045.1315, subpart 1, item C~~ Code of Federal Regulations, title 40, section 268.7(a)(3), as incorporated in part 7045.1390.

K. For an off-site treatment facility, the notice, and the certification and demonstration, if applicable, required by a generator or the owner or operator under Code of Federal Regulations, title 40, ~~section~~ sections 268.7(a)(1) and 268.8, as ~~amended, and part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390.

L. For an on-site treatment facility, the information contained in the notice and the certification and demonstration, if applicable, required by a generator or the owner or operator under Code of Federal Regulations, title 40, ~~section~~ sections 268.7(a)(1) and

268.8, as ~~amended , and part 7045.1315, subpart 1, item A~~ incorporated in part 7045.1390, except for the manifest number required under ~~part 7045.1315, subpart 1, item A, subitem (3)~~ Code of Federal Regulations, title 40, section 268.7(a)(1)(i), as incorporated in part 7045.1390.

M. For an off-site land disposal facility, the notice, certification and demonstration, if applicable, required by the generator, owner or operator of a treatment facility under Code of Federal Regulations, title 40, section 268.7(b)(1)(2) or 268.8, as ~~amended, or part 7045.1315, subpart 2, items A and B~~ incorporated in part 7045.1390, for the facility or ~~part 7045.1315, subpart 1, item B~~ Code of Federal Regulations, title 40, section 268.7(a)(3), as incorporated in part 7045.1390, for the generator, whichever is applicable.

N. For an on-site land disposal facility, the information contained in the notice and the certification and demonstration, if applicable, required by a generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended~~ incorporated in part 7045.1390, ~~or part 7045.1315~~ except for the manifest number, whichever is applicable.

O. For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

P. For an on-site storage facility, the information contained in the notice, except the manifest number, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under Code of Federal Regulations, title 40, section 268.7 or 268.8, as ~~amended, or part 7045.1315~~ incorporated in part 7045.1390.

7045.0586 RETENTION AND DISPOSITION OF RECORDS.

[For text of subpart 1, see M.R.]

Subp. 2. **Retention of records.** The retention period for all records required under parts 7045.0552 to ~~7045.0642~~ 7045.0651 is three years and is extended automatically during the course of any unresolved enforcement action regarding the facility.

[For text of subp 3, see M.R.]

7045.0588 REQUIRED REPORTS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Additional reports.** In addition to submitting the manifest discrepancy report described in part 7045.0582, subpart 3, and the annual report and the unmanifested waste reports described in subparts 2 and 3, the owner or operator shall also report to the commissioner and the Environmental Protection Agency Region V Administrator:

[For text of items A to C, see M.R.]

D. as otherwise required by the process vent ~~and~~, equipment leak, and tank, surface impoundment, and container emission standards in ~~Code of Federal Regulations, title 40, part 265, subparts AA and BB, as amended~~ parts 7045.0645, 7045.0647, and 7045.0648.

7045.0594 CLOSURE.

[For text of subpart 1, see M.R.]

Subp. 2. **Closure performance standard.** The owner or operator shall close the facility in a manner minimizing the need for further maintenance. Closure procedures must result in controlling, minimizing, or eliminating, to the extent necessary to protect human health and the environment, postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere, in accordance with all closure

requirements including the requirements of parts 7045.0628, subpart 9; 7045.0630, subpart 6; 7045.0632, subpart 7; 7045.0634, subpart 6; 7045.0638, subpart 4; 7045.0640, subpart 5; and 7045.0642, subpart 5; and Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649.

Subp. 3. **Submittal of closure plan.** The closure plans must be submitted as follows:

A. A copy of the written closure plan and all revisions to the plan must be furnished to the commissioner upon request, including request by mail until final closure is completed and certified. For facilities without approved closure plans, the plan must also be provided to the commissioner as requested, during site inspections on the day of the inspection. The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include:

(1) A description of how each hazardous waste management unit will be closed, if applicable, and how the facility will be finally closed, in accordance with subpart 2. The description must identify the maximum extent of the operation which will be unclosed during the active life of the facility and how the facility will meet the requirements of ~~subpart 2, part~~ parts 7045.0590; 7045.0592; 7045.0594; 7045.0596 ~~, and the applicable closure requirements of parts~~; 7045.0626, subpart 8; 7045.0628, subpart 9; 7045.0630, subpart 6; 7045.0632, subpart 7; 7045.0634, subpart 6; 7045.0638, subpart 4; 7045.0640, subpart 5; 7045.0642, subpart 5; and 7045.0655, subpart 6, ~~will be met~~ and Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649;

[For text of subitems (2) to (6), see M.R.]

[For text of items B to F, see M.R.]

[For text of subp 4, see M.R.]

7045.0596 CLOSURE ACTIVITIES.

[For text of subps 1 and 2, see M.R.]

Subp. 2a. **Conditions for receiving nonhazardous waste.** The commissioner shall allow an owner or operator to receive only nonhazardous waste in a landfill, land treatment, or surface impoundment unit after the final receipt of hazardous waste at that unit if:

A. the owner or operator submits an amended Part B application, or a Part B application, if not previously required, and demonstrates that:

[For text of subitems (1) and (2), see M.R.]

(3) the nonhazardous waste will not be incompatible with any remaining wastes in the unit, or with the facility design and operating requirements of the unit or facility under parts 7045.0552 to ~~7045.0642~~ 7045.0651;

[For text of subitems (4) and (5), see M.R.]

[For text of items B to D, see M.R.]

[For text of subps 3 and 4, see M.R.]

7045.0600 POSTCLOSURE.

Subpart 1. **Scope.** This part and parts 7045.0602 to 7045.0606 apply to the owners and operators of all hazardous waste disposal facilities, including surface impoundments and waste piles from which the owner or operator intends to remove the wastes at closure, to the extent that the owner or operator is required to provide postclosure care in part 7045.0630, subpart 6, or ~~in part~~ 7045.0632, subpart 7~~, and also~~, tank systems that are required under part 7045.0628, subpart 9, to meet the requirements for landfills~~.~~, and containment buildings that are required under Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649, to meet the requirement for landfills, except as provided otherwise in part 7045.0552.

Subp. 2. **Submittal of postclosure plan.** The postclosure plan must be submitted as follows:

[For text of items A to C, see M.R.]

D. The commissioner shall provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments, to request modification, or to request a public information meeting on the postclosure plan or substantive amendments to the postclosure plan within 30 days of the date of the notice. In response to a request or at his or her own discretion, the commissioner shall hold a public information meeting whenever a meeting might clarify one or more issues concerning the postclosure plan. The commissioner shall approve, modify, or disapprove postclosure plans for facilities having interim status within 90 days of the receipt of the plan. If the commissioner does not approve the plan, he or she shall provide the owner or operator with a detailed written statement of reasons for the refusal, and the owner or operator shall submit a modified or new plan for approval within 30 days after receiving this written statement. The commissioner shall approve or modify this plan in writing within 60 days. If the commissioner modifies the plan, this modified plan becomes the approved postclosure plan. A copy of the modified plan and a detailed statement of reasons for the modifications shall be mailed to the owner or operator. The commissioner shall ensure that the approved postclosure plan is consistent with ~~part~~ this part and with the postclosure care and use of property requirements in parts 7045.0602, 7045.0604, and 7045.0606.

[For text of subp 3, see M.R.]

7045.0608 FINANCIAL REQUIREMENTS.

Subpart 1. **Scope.** The requirements of parts 7045.0610, 7045.0612, and 7045.0620 to 7045.0624 apply to owners and operators of hazardous waste facilities except as provided otherwise in this part or in part 7045.0552.

The requirements of parts 7045.0614 to 7045.0618 apply only to owners and operators of disposal facilities ~~and~~; tank systems that are required under part 7045.0628, subpart 9, to meet the requirements for landfills; and containment buildings that are

required under Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649, to meet the requirements for landfills.

The state and the federal government are exempt from the requirements of parts 7045.0608 to 7045.0624.

[For text of subp 2, see M.R.]

7045.0610 COST ESTIMATE FOR FACILITY CLOSURE.

Subpart 1. **Cost estimate requirements.** The owner or operator shall prepare a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the closure plan in part 7045.0594 and applicable closure requirements in parts 7045.0626, subpart 8; 7045.0630, subpart 6; 7045.0632, subpart 7; 7045.0634, subpart 6; 7045.0638, subpart 4; 7045.0640, subpart 5; and 7045.0642, subpart 5; and Code of Federal Regulations, title 40, section 265.1102, as incorporated in part 7045.0649. The closure cost estimate must equal the cost of closure at the point in the facility's operating life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. The closure cost shall be estimated as follows:

[For text of items A to C, see M.R.]

[For text of subps 2 to 4, see M.R.]

7045.0612 FINANCIAL ASSURANCE FOR FACILITY CLOSURE.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Financial test and corporate guarantee for closure.** The financial test and corporate guarantee for closure is as follows:

[For text of items A to K, see M.R.]

L. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be

the parent corporation of the owner or operator. The guarantor must meet the requirements for owner or operator in items A to J; and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[For text of subitems (1) to (3), see M.R.]

[For text of subps 7 to 9, see M.R.]

7045.0616 FINANCIAL ASSURANCE FOR POSTCLOSURE CARE.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Financial test and corporate guarantee for postclosure care.** The following is the financial test and corporate guarantee for postclosure care:

[For text of items A to L, see M.R.]

M. An owner or operator may meet the requirements of this part by obtaining a written guarantee, hereafter referred to as "corporate guarantee." The guarantor must be the parent corporation of the owner or operator. The guarantor must meet the requirements for owners or operators in items A to K, and must comply with the terms of the corporate guarantee. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in item E. The terms of the corporate guarantee must provide that:

[For text of subitems (1) to (3), see M.R.]

[For text of subps 7 to 9, see M.R.]

7045.0620 LIABILITY REQUIREMENTS.

Subpart 1. **Coverage for sudden accidental occurrences.** An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of ~~these~~ such facilities, ~~shall~~ must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator ~~shall~~ must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1,000,000 per occurrence with an annual aggregate of at least $2,000,000, exclusive of legal defense costs. This liability coverage may be demonstrated ~~in one of three ways,~~ as specified in items A~~, B, and C~~ to F:

A. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in subitems (1) and (2):

(1) Each insurance policy must be amended by attachment of the hazardous waste facility liability endorsement or evidenced by a certificate of liability insurance. The wording of the endorsement must be identical to the wording specified in part 7045.0524, subpart 9. The wording of the certificate of insurance must be identical to the wording specified in part 7045.0524, subpart 10. The owner or operator ~~shall~~ must submit a signed duplicate original of the endorsement or the certificate of insurance to the commissioner. If requested by the commissioner, the owner or operator shall provide a signed duplicate original of the insurance policy.

(2) Each insurance policy must be issued by an insurer which is licensed to transact the business of insurance or eligible to provide insurance as an excess or surplus lines insurer in one or more states.

B. An owner or operator may meet the requirements of this part by passing a financial test or using the corporate guarantee for liability coverage as specified in subparts 5 and 6.

C. An owner or operator may meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 7.

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 8.

E. An owner or operator may demonstrate the required liability coverage through the use of ~~the~~ combinations of insurance, financial test, ~~insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance as these mechanisms are specified in this part~~ corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by ~~subpart 1~~ this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator must specify other assurance as "excess" coverage.

F. An owner or operator must notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner

or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

Subp. 2. **Coverage for nonsudden accidental occurrences.** An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of ~~these~~ such facilities, ~~shall~~ must demonstrate financial responsibility for bodily ~~damage~~ injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator ~~shall~~ must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3,000,000 per occurrence with an annual aggregate of at least $6,000,000, exclusive of legal defense costs. An owner or operator who must meet the requirements of this part may combine the required per-occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least $4,000,000 per occurrence and $8,000,000 annual aggregate. This liability coverage may be demonstrated ~~in one of three ways~~ as specified in items A~~, B, and C~~ to F:

[For text of item A, see M.R.]

B. An owner or operator may meet the requirements of this part by passing a financial test or using the corporate guarantee for liability coverage as specified in subparts 5 and 6.

C. An owner or operator may meet the requirements of this part by obtaining a letter of credit for liability coverage as specified in subpart 7.

D. An owner or operator may meet the requirements of this part by obtaining a trust fund for liability coverage as specified in subpart 8.

E. An owner or operator may demonstrate the required liability coverage through use of ~~the~~ combinations of insurance, financial test, ~~insurance, the corporate guarantee, a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance as these mechanisms are specified in this part~~ corporate guarantee, letter of credit, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by ~~subpart 1~~ this part. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this item, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

~~D. The required liability coverage for nonsudden accidental occurrences must be demonstrated by the dates specified in subitems (1), (2), (3), and (4). The total sales or revenues of the owner or operator in all lines of business, in the fiscal year preceding July 16, 1984, will determine which of the dates applies. If the owner and operator of a facility are two different parties, or if there is more than one owner or operator, the sales or revenues of the owner or operator with the largest sales or revenues determines the date by which the coverage must be demonstrated. The following dates apply:~~

~~(1) for an owner or operator not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) with sales or revenues totaling $10,000,000 or more, six months after July 16, 1984;~~

~~(2) for an owner or operator not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) with sales or revenues greater than $5,000,000 but less than $10,000,000, 18 months after July 16, 1984;~~

~~(3) all other owners or operators not subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) 30 months after July 16, 1984;~~

~~(4) for an owner or operator subject to the requirements of Code of Federal Regulations, title 40, section 265.147 (1983) on the date he or she is required to demonstrate coverage under Code of Federal Regulations, title 40, section 265.147 (1983).~~

~~E. By the date six months after July 16, 1984, an owner or operator who is within either of the categories in subitem (2) or (3) shall, unless he or she has demonstrated liability coverage for nonsudden accidental occurrences, send a letter to the commissioner, stating the date by which he or she plans to establish the coverage.~~

F. An owner or operator shall notify the commissioner in writing within 30 days whenever:

(1) a claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in items A to E;

(2) a certification of valid claim for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under items A to E; or

(3) a final court order establishing a judgment for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under items A to E.

[For text of subps 3 and 4, see M.R.]

Subp. 5. **Financial test for liability coverage.** The financial test for liability coverage is as follows:

[For text of items A to G, see M.R.]

H. If the owner or operator no longer meets the requirements of item A, he or she ~~shall~~ must obtain insurance, a letter of credit, a trust fund, or a corporate guarantee for the entire amount of required liability coverage as specified in this part. Evidence of ~~insurance~~ liability coverage must be submitted to the commissioner within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

[For text of item I, see M.R.]

Subp. 6. **Corporate guarantee for liability coverage.** The corporate guarantee for liability coverage is as follows:

A. Subject to item B, an owner or operator may meet the requirements of this part by obtaining a written corporate guarantee. The guarantor must be the parent corporation of the owner or operator. The ~~guarantee~~ guarantor must meet the requirements for owners or operators in subpart 5. The wording of the corporate guarantee must be identical to the wording specified in part 7045.0524, subpart 8a. The guarantee must be signed by two corporate officers of the parent corporation. A corporate resolution authorizing the parent corporation to provide the corporate guarantee for the subsidiary must be attached to the guarantee. A certified copy of the corporate guarantee must accompany the items sent to the commissioner as specified in subpart 5, item E. The terms of the corporate guarantee must provide that:

[For text of subitems (1) and (2), see M.R.]

[For text of item B, see M.R.]

Subp. 7. **Letter of credit for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by obtaining an irrevocable standby letter of credit that conforms to the requirements of this subpart and submitting a copy of the letter of credit to the commissioner.

B. The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.

C. The wording of the letter of credit must be identical to the wording in part 7045.0524, subpart 11.

D. An owner or operator who uses a letter of credit to satisfy the requirements of this part may also establish a standby trust fund. Under the terms of a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

E. The wording of the standby trust fund must be identical to the wording in part 7045.0524, subpart 13.

Subp. 8. **Trust fund for liability coverage.**

A. An owner or operator may satisfy the requirements of this part by establishing a trust fund that conforms to the requirements of this subpart and submitting an originally signed duplicate of the trust agreement to the commissioner.

B. The trustee must be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

C. The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this part. If at any time after the trust fund is created, the amount of funds

in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided or obtain other financial assurance as specified in this part to cover the difference. For purposes of this subpart, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden or nonsudden occurrences required to be provided by the owner or operator by this part, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

D. The wording of the trust fund must be identical to the wording in part 7045.0524, subpart 13.

7045.0626 USE AND MANAGEMENT OF CONTAINERS.

Subpart 1. **Scope.** This part applies to owners and operators of hazardous waste facilities that store containers of hazardous waste, except as part 7045.0552 provides otherwise. Under ~~parts~~ part 7045.0127, subparts 2 to 4, and ~~7045.0135, subpart 4, item C~~ Code of Federal Regulations, title 40, section 261.33(c), as incorporated in part 7045.0135, if a hazardous waste is emptied from a container, the residue remaining in the container is not considered a hazardous waste if the container is empty, as defined in part 7045.0127, subparts 2 to 4. In that event, management of the container is exempt from the requirements of this part.

[For text of subps 2 to 6, see M.R.]

Subp. 7. **Special requirements for ignitable or reactive waste.** Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line, when physically possible based on the dimensions of the property. When it is not physically possible to place containers at least 50 feet from the property line, based on the dimensions of the property, the ignitable or reactive waste must be placed at least as

far as the specified minimum distance from property line found in ~~Table Number 79.503-F of~~ the Minnesota ~~Uniform~~ State Fire Code ~~as incorporated by reference in part 7510.3510~~, chapter 7510. Nothing in this subpart shall relieve the facility owner or operator from the obligation to comply with any local, state, or federal law governing storage of these wastes.

[For text of subp 8, see M.R.]

Subp. 9. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a container in accordance with the applicable requirements of parts 7045.0645, 7045.0647, and 7045.0648.

7045.0628 TANK SYSTEMS.

Subpart 1. **Scope.** This part applies to owners and operators of facilities that use tank systems, including tank systems, sumps, and other such collection devices or systems used in conjunction with drip pads, as defined in part 7045.0020 and regulated under part 7045.0644, to treat or store hazardous waste, except as items A and B and part 7045.0552 provide otherwise.

A. Tank systems that are used to store or treat hazardous waste containing no free liquids and that are located inside a building with an impermeable floor are exempt from the requirements of subpart 4. To demonstrate the absence or presence of free liquids in the stored or treated waste, ~~EPA~~ the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," ~~(~~EPA publication ~~No.~~ SW-846 ~~) must be used~~, incorporated by reference in part 7045.0065, item D.

[For text of item B, see M.R.]

[For text of subps 2 to 9, see M.R.]

Subp. 10. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a tank unless:

[For text of items A and B, see M.R.]

C. the tank is used solely for emergencies.

The owner or operator of a facility which treats or stores ignitable or reactive waste in a tank shall comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in the buffer zone requirements for tanks, contained in ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510.

[For text of subps 11 and 12, see M.R.]

Subp. 13. **Air emission standards.** The owner or operator of a facility must manage all hazardous waste placed in a tank in accordance with parts 7045.0645, 7045.0647, and 7045.0648.

7045.0629 REQUIREMENTS FOR SMALL QUANTITY AND VERY SMALL QUANTITY GENERATORS THAT ACCUMULATE HAZARDOUS WASTE IN TANKS.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Ignitable and reactive wastes.** Generators regulated under this part must comply with the following special requirements for ignitable or reactive waste:

[For text of item A, see M.R.]

B. The owner or operator of a facility which treats or stores ignitable or reactive waste in covered tanks must comply with the buffer zone requirements for tanks contained in ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510.

[For text of subp 6, see M.R.]

7045.0630 SURFACE IMPOUNDMENTS.

[For text of subps 1 and 1a, see M.R.]

Subp. 2. **General operating requirements.**

A. A surface impoundment must maintain enough freeboard to prevent any overtopping of the dike by overfilling, wave action or a storm. There must be at least 60 centimeters (two feet) of freeboard. Any point source discharge from a surface impoundment to waters of the United States is subject to the requirements of the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1342, as amended. Spills may be subject to the Federal Water Pollution Control Act Amendments of 1972, United States Code, title 33, section 1312, as amended.

B. Surface impoundments that are newly subject to RCRA section 3005(j)(1) due to the promulgation of additional listings or characteristics for the identification of hazardous waste must be in compliance with subpart 1a not later than 48 months after the promulgation of the additional listing or characteristic. This compliance period shall not be cut short as the result of the promulgation of land disposal prohibitions under Code of Federal Regulations, title 40, part 268, as amended, or the granting of an extension to the effective date of a prohibition pursuant to Code of Federal Regulations, title 40, section 268.5, as incorporated in part 7045.1390, within this 48-month period.

[For text of subps 2a to 5, see M.R.]

Subp. 6. **Closure and postclosure care.** The requirements of closure and postclosure care are as follows:

[For text of item A, see M.R.]

B. If the owner or operator removes or decontaminates all the impoundment materials described in item A, the impoundment is not further subject to the requirements of parts 7045.0552 to ~~7045.0642~~ 7045.0651. At closure and throughout the operating period, unless the owner or operator can demonstrate that any waste removed from

the surface impoundment is not a hazardous waste, he or she becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of parts 7045.0205 to 7045.0397 and 7045.0552 to ~~7045.0642~~ 7045.0651.

[For text of items C and D, see M.R.]

Subp. 7. **Special requirements for ignitable or reactive wastes.** Ignitable or reactive waste must not be placed in a surface impoundment unless the waste and the impoundment satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and:

[For text of items A and B, see M.R.]

Subp. 8. **Special requirements for incompatible wastes.** Incompatible waste, or incompatible wastes and materials, must not be placed in the same surface impoundment unless part 7045.0562, subpart 2, is followed. For examples of potentially incompatible wastes, or incompatible waste and materials, see part 7045.0643, subpart 1, item D.

Subp. 9. **Air emission standards.** The owner or operator must manage all hazardous waste placed in a surface impoundment in accordance with parts 7045.0645 and 7045.0648.

7045.0632 WASTE PILES.

[For text of subps 1 to 4b, see M.R.]

Subp. 5. **Special requirements for ignitable or reactive waste.** Ignitable or reactive waste must not be placed in a pile unless the waste and pile satisfy all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390:

[For text of items A and B, see M.R.]

[For text of subps 6 to 9, see M.R.]

7045.0634 LAND TREATMENT.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Special requirements for ignitable or reactive waste.** Ignitable or reactive wastes must not be land treated, unless the waste and treatment zone meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and the waste is immediately incorporated into the soil so that the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under parts 7045.0131, subpart 2 or 5; and 7045.0562, subpart 2 is complied with.

[For text of subp 8, see M.R.]

7045.0638 LANDFILLS.

[For text of subps 1 to 3, see M.R.]

Subp. 4. **Closure and postclosure.** Closure and postclosure requirements are as follows:

[For text of item A, see M.R.]

B. After final closure, the owner or operator shall comply with all postclosure requirements contained in parts 7045.0600 to 7045.0606 including maintenance and monitoring throughout the postclosure care period. The owner or operator must:

[For text of subitem (1), see M.R.]

(2) maintain and monitor the leak detection system in accordance with part 7045.0538, subparts 3, item C, subitems (3), unit (d), and (4); and 2c, item B, and comply with all other applicable leak detection system requirements of ~~this part~~ parts 7045.0552 to 7045.0651 governing interim status facility standards;

[For text of subitems (3) to (5), see M.R.]

Subp. 5. **Special requirements for ignitable or reactive waste.** Special requirements for ignitable or reactive waste are as follows:

A. Except as provided in item B, and subparts 7 and 9, ignitable or reactive waste must not be placed in a landfill unless the waste and landfill meet all applicable requirements of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, and the resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under part 7045.0131, subpart 2 or 5, and compliance with part 7045.0562, subpart 2, is maintained.

B. Except for prohibited wastes which remain subject to treatment standards in ~~parts 7045.1350 to 7045.1360~~ Code of Federal Regulations, title 40, sections 268.40 to 268.42, as incorporated in part 7045.1390, ignitable wastes in containers may be landfilled without meeting the requirements of item A if the wastes are disposed so that they are protected from any material or conditions which may cause them to ignite. Ignitable wastes must be disposed in nonleaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture, or any other condition that might cause ignition of the wastes; must be covered daily with soil or other noncombustible material to minimize the potential for ignition of the wastes; and must not be disposed in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the wastes.

[For text of subp 6, see M.R.]

Subp. 7. **Special requirements for liquid waste.** Bulk or noncontainerized liquid waste or waste containing free liquids, whether or not ~~absorbents~~ sorbents have been added, must not be placed in a landfill.

A. A container holding liquid waste or waste containing free liquids must not be placed in a landfill, unless:

(1) all free standing liquid has been removed by decanting, or other methods; has been mixed with ~~absorbent~~ sorbent or solidified so that free standing liquid is no longer observed; or has been otherwise eliminated;

[For text of subitems (2) to (4), see M.R.]

B. To demonstrate the ~~presence or~~ absence or presence of free liquids in either a containerized or a bulk waste, the following test must be ~~demonstrated using the Paint Filter Liquids Test,~~ used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid ~~Wastes~~ Waste, Physical/Chemical Methods," EPA publication ~~number~~ SW-846, incorporated in part 7045.0065, item D.

C. Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are materials listed or described in subitem (1) or materials that pass one of the tests in subitem (2).

(1) Nonbiodegradable sorbents:

(a) inorganic minerals, other inorganic materials, and elemental carbon (for example, aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, and zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), and diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; and activated charcoal/activated carbon);

(b) high molecular weight synthetic polymers (for example, polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(c) mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents must use the following methods. The methods are incorporated by reference under part 7045.0538, subpart 10, item D, subitem (2):

(a) the sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a), Standard Practice for Determining Resistance of Synthetic Polymer Material to Fungi;

(b) the sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b), Standard Practice for Determining Resistance of Plastics to Bacteria; or

(c) the sorbent material is determined to be nonbiodegradable under OECD test 301B: [CO_2 Evolution (Modified Sturm Test)].

[For text of subp 8, see M.R.]

Subp. 9. **Special requirements for disposal of laboratory packs.** Small containers of hazardous waste in overpacked drums, or laboratory packs, may be placed in a landfill if the requirements of items A to F are met:

A. Hazardous waste must be packaged in nonleaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the waste held therein. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type ~~specified~~ authorized in the United States Department of Transportation hazardous materials regulations under Code of Federal Regulations, title 49, parts 173, 178, ~~and~~ 179, and 180, as amended, if those regulations specify a particular inside container for the waste.

B. The inside containers must be overpacked in ~~an open~~ a removable head metal shipping container as specified in United States Department of Transportation regulations under Code of Federal Regulations, title 49, section 173.12 and parts 178 ~~and~~, 179, and 180, as amended~~, of no more than 416 liter (110 gallon) capacity, and~~. The inside containers must be surrounded by a sufficient quantity of ~~absorbent~~ chemically compatible sorbent material, determined to be nonbiodegradable in accordance with subpart 7, item C,

to completely ~~absorb~~ sorb all of the liquid contents of the inside containers. The gross weight of the complete package must not exceed 205 kilograms (452 pounds). The metal outer container must be full after ~~packing~~ it has been packed with inside containers and ~~absorbent~~ sorbent material.

C. The ~~absorbent~~ sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with part 7045.0562, subpart 2.

[For text of items D and E, see M.R.]

F. The disposal complies with ~~parts 7045.1300 to 7045.1380~~ part 7045.1390. Persons who incinerate lab packs ~~according to part 7045.1360~~ in accordance with Code of Federal Regulations, title 40, section 268.42(c)(1), as incorporated in part 7045.1390, may use fiber drums in place of metal outer containers. The fiber drums must meet the United States Department of Transportation specifications in Code of Federal Regulation, title 49, section 173.12, as amended, and be overpacked ~~according to~~ in accordance with item B.

7045.0643 APPENDICES TO INTERIM STATUS FACILITY STANDARDS.

Subpart 1. **Incorporation of federal regulations.** The following appendices found in Code of Federal Regulations, title 40, part 265, as amended, are incorporated by reference:

A. Appendix I, Recordkeeping Instructions;

B. Appendix III, EPA Interim Primary Drinking Water Standards;

C. Appendix IV, Tests for Significance;

D. Appendix V, Examples of Potentially Incompatible Waste; and

E. Appendix VI, Compounds with Henry's Law Constant Less Than 0.1 Y/X.

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

7045.0645 AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of interim status facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers must comply with Code of Federal Regulations, title 40, part 265, subpart CC, air emission standards for tanks, surface impoundments, and containers, sections 265.1080 to 265.1091, as amended, which are incorporated by reference subject to the exceptions in subpart 2.

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.**

A. The agency does not incorporate the following Code of Federal Regulations, title 40, part 265, subpart CC, provisions, as amended:

(1) Code of Federal Regulations, title 40, section 265.1080(d) to (g), governing specific exclusions; and

(2) Code of Federal Regulations, title 40, section 265.1083(c)(4)(ii), governing authority that EPA cannot delegate to states.

B. Part 7045.0090, adoption and incorporation by reference, also applies.

7045.0649 CONTAINMENT BUILDINGS.

Subpart 1. **Incorporation of federal regulations.** The owners and operators of interim status facilities that store or treat hazardous waste in containment buildings must comply with Code of Federal Regulations, title 40, part 265, subpart DD, Containment Buildings, sections 265.1100 to 265.1110, as amended, which are incorporated by reference subject to the exceptions in subpart 2.

Subp. 2. **Additions, modifications, or exceptions to incorporated regulations.** Part 7045.0090, adoption and incorporation by reference, also applies.

7045.0652 FACILITIES GOVERNED BY FACILITY STANDARDS.

Subpart 1. **General requirements.** Parts 7045.0652 and 7045.0655 apply in lieu of parts 7045.0450 to ~~7045.0642~~ 7045.0651 to the owner or operator of the following types of units or facilities:

[For text of items A to D, see M.R.]

[For text of subp 2, see M.R.]

7045.0655 GENERAL FACILITY STANDARDS.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Closure.** At closure, the owner or operator of an elementary neutralization unit, pretreatment unit, or wastewater treatment unit shall remove all hazardous waste and hazardous waste residues from the unit.

At closure, the owner or operator of a combustion waste facility shall analyze the waste present in the facility ~~according to~~ in accordance with parts 7045.0102 to ~~7045.0143~~ 7045.0155 and shall submit the waste analysis results and proposed closure methods to the commissioner. Based on the waste analysis and proposed closure methods, the agency shall determine which closure standards from parts 7045.0450 to 7045.0551, if any, apply to the facility.

[For text of subp 7, see M.R.]

7045.0665 ~~USE~~ HAZARDOUS WASTES USED IN A MANNER CONSTITUTING DISPOSAL.

Subpart 1. **Scope.** ~~Items A and B apply~~ This part applies to hazardous wastes that are used in a manner constituting disposal.

[For text of item A, see M.R.]

B. Hazardous wastes are not used in a manner constituting disposal if:

[For text of subitems (1) and (2), see M.R.]

(3) the products meet the applicable treatment standards in ~~parts 7045.1350 to 7045.1360 or applicable prohibition levels in part 7045.1330~~ Code of Federal Regulations, title 40, sections 268.40 to 268.49, as incorporated in part 7045.1390, or, if no treatment standards have been established, meet the applicable prohibition levels in Code of Federal Regulations, title 40, section 268.32, as incorporated in part 7045.1390, or RCRA section 3004(d) where no treatment standards have been established, for each ~~recyclable material~~ hazardous waste that they contain.

~~Commercial fertilizers that are produced for the general public's use that contain recyclable materials also are not presently subject to regulation provided they meet the same treatment standards or prohibition levels for each recyclable material that they contain. However, zinc-containing fertilizers using hazardous waste K061 that are produced for the general public's use are not presently subject to regulation.~~

C. Antiskid/deicing uses of slags, which are generated from high temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, in a manner constituting disposal are not covered by the exemption in item B and remain subject to regulation.

D. Fertilizers that contain recyclable materials are not subject to regulation provided that:

(1) they are zinc fertilizers that meet the requirements in Code of Federal Regulations, title 40, section 261.4(a)(21), as amended; or

(2) they meet the applicable treatment standards in Code of Federal Regulations, title 40, sections 268.40 to 268.49, as incorporated in part 7045.1390, for each hazardous waste that they contain.

[For text of subps 1a to 3, see M.R.]

Subp. 4. **Standards applicable to facilities managing wastes that are to be used in a manner that constitutes disposal.** Facilities managing wastes in a manner that constitutes disposal are subject to the following requirements:

A. owners or operators of facilities that store recyclable wastes that are to be used in a manner that constitutes disposal, but who are not the ultimate users of the wastes are subject to all applicable provisions of parts ~~7023.9000 to 7023.9050,~~ 7045.0450 to ~~7045.0534, 7045.0544~~ 7045.0551, and 7045.0552 to ~~7045.0632~~ 7045.0651, and chapter 7001; and

B. owners or operators of facilities that use recyclable wastes that are to be used in a manner that constitutes disposal are subject to all applicable provisions of parts ~~7023.9000 to 7023.9050,~~ 7045.0450 to ~~7045.0538, 7045.0544~~ 7045.0551, 7045.0552 to ~~7045.0638~~ 7045.0651, and 7045.1390 and chapter 7001.

7045.0686 SPECIAL REQUIREMENTS FOR MANAGEMENT OF SPENT OR WASTE HOUSEHOLD BATTERIES.

Subpart 1. **Scope.** The requirements of this part apply to operators who collect, store, transport, or reclaim spent or waste household batteries as a part of a household battery management program.

[For text of item A, see M.R.]

B. Operators who collect, transport, or store spent or waste household batteries which are sent for recycling but who do not reclaim them are subject to regulation under subparts 2 and 3, but are not otherwise subject to regulation under parts ~~7023.9000 to 7023.9050,~~ 7045.0205 to ~~7045.1380~~ 7045.1390, and chapter 7001 for such collection, transportation, and storage.

[For text of items C and D, see M.R.]

[For text of subps 2 to 4, see M.R.]

7045.0692 HAZARDOUS WASTE BURNED FOR ENERGY RECOVERY.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Standards applicable to marketers of hazardous waste fuel.** Marketers are subject to the requirements in items A to F.

[For text of items A and B, see M.R.]

C. If a marketer is a generator, or becomes a generator by initiating a shipment of hazardous waste fuel, the marketer must comply with parts 7045.0205 to 7045.0320. If the marketer operates a facility, the marketer must comply with parts 7045.0450 to ~~7045.0534~~ 7045.0551. If the marketer is operating a facility under interim status, the marketer must comply with parts 7045.0552 to ~~7045.0632~~ 7045.0651. If the marketer stores hazardous waste, the marketer must comply with the agency's permitting procedures in chapter 7001 ~~and parts 7023.9000 to 7023.9050~~ for storage of hazardous waste.

[For text of items D and E, see M.R.]

F. In addition to the applicable record keeping requirements of parts 7045.0205 to 7045.0320, 7045.0450 to ~~7045.0534~~ 7045.0551, and 7045.0552 to ~~7045.0632~~ 7045.0651, a marketer must keep a copy of each certification notice received or sent for three years from the date the marketer last engaged in a hazardous waste fuel marketing transaction with the person who sent or received the certification notice.

Subp. 6. **Standards applicable to burners of hazardous waste fuel.** Owners and operators of industrial furnaces and boilers identified in subpart 2, item B, that burn hazardous fuel are subject to the requirements in items A to F.

[For text of items A to D, see M.R.]

E. Generators who accumulate waste for longer than the time periods in item D, and burners who receive waste from off-site and store it, must comply with the following requirements:

(1) the agency's permitting procedures in chapter 7001 ~~and parts 7023.9000 to 7023.9050~~ for hazardous waste storage facilities, parts 7045.0205 to 7045.0536, 7045.0544, 7045.0552 to 7045.0632, 7045.1000 to 7045.1030, and ~~7045.1300 to 7045.1380~~ 7045.1390; and

[For text of subitem (2), see M.R.]

[For text of item F, see M.R.]

7045.0800 MIXTURES OF USED OIL AND HAZARDOUS WASTE.

[For text of subps 1 and 2, see M.R.]

Subp. 3. **Rebuttable presumption of mixing.** Except as provided in items A to C, used oil containing more than 1,000 ppm total halogens is presumed to have been mixed with a halogenated hazardous waste listed in part 7045.0135, and thus is subject to regulation as a listed hazardous waste. Persons may rebut this presumption by demonstrating that the used oil does not contain hazardous waste. Demonstration must either involve applying knowledge of the source of halogens or the use of an analytical method from Environmental Protection Agency document SW-846, ~~Edition III, (such as method 8010A or 8021)~~ as incorporated by reference in part 7045.0065, item D, to show that the used oil does not contain greater than 100 ppm of any individual halogenated hazardous constituent listed in part 7045.0139.

[For text of items A to C, see M.R.]

Subp. 4. **Characteristic waste.** Mixtures of used oil and hazardous waste that solely exhibits one or more of the hazardous waste characteristics identified in part 7045.0131 and mixtures of used oil and hazardous waste that is listed in part 7045.0135 solely because it exhibits one or more of the characteristics of hazardous waste identified in part 7045.0131 are subject to:

[For text of item A, see M.R.]

B. except as provided in item C, regulation as used oil under parts 7045.0790 to 7045.0990 and regulation under the land disposal restrictions of ~~parts 7045.1300 to 7045.1380~~ part 7045.1390, if the resultant mixture does not exhibit any characteristic of hazardous waste identified in part 7045.0131; or

[For text of item C, see M.R.]

7045.0805 WASTE CONTAINING OR CONTAMINATED WITH USED OIL.

A. Waste contaminated with used oil that is destined for disposal is subject to evaluation under parts 7045.0102 to ~~7045.0143~~ 7045.0155 to determine if it is hazardous waste, and the appropriate solid or hazardous waste management standards based on the results of the evaluation, unless the waste is:

[For text of subitems (1) and (2), see M.R.]

[For text of items B to E, see M.R.]

7045.0855 STANDARDS FOR USED OIL GENERATORS.

[For text of subpart 1, see M.R.]

Subp. 2. **Storage.**

A. Used oil generators shall comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this part. Used oil generators shall also comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280,~~ chapter 7150 for used oil stored in underground tanks, whether or not the used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

B. Used oil generators who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to 7100.0090~~ chapter 7151, in addition to the requirements of this part. Used oil generators

who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil generators shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

[For text of items C and D, see M.R.]

Subp. 3. **On-site burning in small burning units designed to burn used oil.** Generators who store used oil in vessels directly connected to burning units shall comply with ~~article 61 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510. Generators may burn used oil in burning units designed to burn used oil provided that:

[For text of items A to D, see M.R.]

E. the unit ~~is used in accordance~~ and its operation comply with the Minnesota ~~Statutes, section 299F.015~~ Fire Code.

[For text of subps 4 and 5, see M.R.]

Subp. 6. **Closure.**

A. Generators who store or process used oil in aboveground tanks must to the extent practical, at closure of the tank system, remove or decontaminate visible residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

B. Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment

system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[For text of subp 7, see M.R.]

7045.0865 STANDARDS FOR USED OIL TRANSPORTERS AND TRANSFER FACILITIES.

[For text of subps 1 to 6, see M.R.]

Subp. 7. **Used oil discharges.**

[For text of items A to C, see M.R.]

D. An air, rail, highway, or water transporter who has discharged used oil must give notice, if required by Code of Federal Regulations, title 49, section 171.15, as amended, to the National Response Center (800) 424-8802, and report in writing as required by Code of Federal Regulations, title 49, section 171.16, as amended, to the ~~Director, Office of Hazardous Materials Regulations, Materials Transportation Bureau~~ Information Systems Manager, PHH-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001, or submit an electronic hazardous materials incident report to the Information Systems Manager, DHM-63, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590-0001 at http://hazmat.dot.gov.

[For text of subp 8, see M.R.]

Subp. 9. **Used oil storage at transfer facilities.** This subpart applies to used oil transfer facilities where used oil is stored for more than 24 hours and no more than 35 days. Transfer facilities where used oil is stored for more than 35 days are subject to regulation under part 7045.0875.

A. Used oil transporters shall comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this part. Used oil transporters shall also comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280, as amended,~~ chapter 7150 for used oil stored in underground tanks, whether or not the used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

B. Used oil transporters who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to 7100.0090~~ chapter 7151, in addition to the requirements of this part. Used oil transporters who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil transporters shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

C. Used oil transporters shall not store used oil in units other than containers or tanks and shall ensure that the following requirements for containers and tanks are met. Containers and tanks used to store used oil at transfer facilities must be in good condition, not leaking, and closed. Containers must be equipped with a secondary containment system consisting of dikes, berms, or retaining walls and a floor that covers the entire area within the dikes, berms, or retaining walls, or an equivalent secondary containment system. The entire containment system, including walls and floors, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water. Containers, aboveground tanks, and fill pipes of underground tanks used to store used oil at transfer facilities must be marked with the words "Used Oil." Aboveground tanks used to store

used oil at transfer facilities ~~are~~ may also be subject to the secondary containment requirements ~~of parts 7100.0010 to 7100.0090~~ and other requirements in chapter 7151. ~~Double-walled tanks meet this secondary containment requirement.~~

[For text of item D, see M.R.]

[For text of subps 10 to 12, see M.R.]

Subp. 13. **Closure.**

A. Owners and operators who store or process used oil in aboveground tanks must, at closure of the tank system, remove or decontaminate residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in this item, then the owner or operator must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements of part 7045.0638, subpart 4, that apply to hazardous waste landfills.

B. Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[For text of subp 14, see M.R.]

7045.0875 STANDARDS FOR USED OIL PROCESSORS AND REREFINERS.

[For text of subps 1 to 4, see M.R.]

Subp. 5. **Used oil storage and management.**

A. Used oil processors/rerefiners shall comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this part. Used oil processors/rerefiners shall also comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280, as amended,~~ chapter 7150 for used oil stored in underground tanks, whether or not the used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

B. Used oil processors/rerefiners who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to 7100.0090~~ chapter 7151, in addition to the requirements of this part. Used oil processors/rerefiners who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil processors/rerefiners shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

C. Used oil processors/rerefiners shall not store used oil in units other than containers or tanks and shall ensure that the following requirements for containers and tanks are met. Containers and tanks used to store used oil at processing/rerefining facilities must be in good condition, not leaking, and closed. Containers must be equipped with a secondary containment system. The secondary containment system must consist of, at a minimum, dikes, berms, or retaining walls, and a floor which covers the entire area within the dike, berm, or retaining wall. An equivalent secondary containment system may be used for containers. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating out of the system to the soil, groundwater, or surface water. Containers, aboveground tanks, and fill pipes of underground tanks used to store used oil

at transfer facilities must be marked with the words "Used Oil." Aboveground tanks used to store used oil at transfer facilities ~~are~~ may also be subject to the secondary containment requirements ~~of parts 7100.0010 to 7100.0090~~ and other requirements in chapter 7151. ~~Double-walled tanks meet this secondary containment requirement.~~

[For text of item D, see M.R.]

E. Closure:

(1) Owners and operators who store or process used oil in aboveground tanks must, at closure of the tank system, remove or decontaminate residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in this subitem, then the owner or operator must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements of part 7045.0638, subpart 4, that apply to hazardous waste landfills.

(2) Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[For text of subps 6 to 11, see M.R.]

7045.0885 STANDARDS FOR USED OIL BURNERS WHO BURN OFF-SPECIFICATION USED OIL FOR ENERGY RECOVERY.

[For text of subps 1 to 5, see M.R.]

Subp. 6. **Used oil storage.**

A. Applicability of federal storage regulations. Used oil burners must comply with all applicable spill prevention, control, and countermeasures requirements of Code of Federal Regulations, title 40, part 112, as amended, in addition to the requirements of this subpart. Used oil burners must comply with the underground storage tank standards of ~~Code of Federal Regulations, title 40, part 280, as amended,~~ chapter 7150 for used oil stored in underground tanks, whether or not the used oil exhibits any characteristic of hazardous waste, in addition to the requirements of this part.

B. Used oil burners who store used oil ~~for more than seven days~~ in aboveground tanks ~~of at least 110 gallons in size~~ are subject to ~~parts 7100.0010 to 7100.0090~~ chapter 7151, in addition to the requirements of this subpart. Used oil burners who store at least 10,000 gallons of used oil at one time are subject to the requirements of Minnesota Statutes, chapter 115E, to prepare and maintain a discharge prevention and response plan, in addition to the requirements of this part. All used oil burners shall comply with the storage and use requirements of ~~article 79 of~~ the Minnesota ~~Uniform~~ State Fire Code, ~~as incorporated by reference in part 7510.3510~~ chapter 7510, in addition to the requirements of this part.

C. Used oil burners shall not store used oil in units other than containers or tanks and must ensure that the following requirements for containers and tanks are met. Containers and tanks used to store used oil at burning facilities must be in good condition, not leaking, and closed. Containers must be equipped with a secondary containment system. The secondary containment system must consist of, at a minimum, dikes, berms, or retaining walls, and a floor which covers the entire area within the dike, berm, or retaining wall. An equivalent secondary containment system may be used for containers. The entire containment system, including walls and floor, must be sufficiently impervious to used oil to prevent any used oil released into the containment system from migrating

out of the system to the soil, groundwater, or surface water. Containers, aboveground tanks, and fill pipes of underground tanks used to store used oil at transfer facilities must be marked with the words "Used Oil." Aboveground tanks used to store used oil at burning facilities ~~are~~ may also be subject to the secondary containment requirements ~~of parts 7100.0010 to 7100.0090~~ and other requirements in chapter 7151. ~~Double-walled tanks meet this secondary containment requirement.~~

[For text of item D, see M.R.]

[For text of subps 7 to 9, see M.R.]

Subp. 10. **Closure.**

A. Owners and operators who store or process used oil in aboveground tanks must, at closure of the tank system, remove or decontaminate residues in tanks, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155. If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in this item, then the owner or operator must close the tank system and perform postclosure care in accordance with the closure and postclosure care requirements of part 7045.0638, subpart 4, that apply to hazardous waste landfills.

B. Owners and operators who store used oil in containers must, at closure, remove containers holding used oils or residues of used oil from the site. The owner or operator must remove or decontaminate used oil residues, contaminated containment system components, contaminated soils, and structures and equipment contaminated with used oil, and manage them as hazardous waste unless the materials are not hazardous waste under parts 7045.0102 to ~~7045.0143~~ 7045.0155.

[For text of subp 11, see M.R.]

7045.1390 LAND DISPOSAL RESTRICTIONS.

Subpart 1. **Incorporation of federal land disposal restrictions.** Code of Federal Regulations, title 40, part 268, as amended, land disposal restrictions, is incorporated by reference, except as provided in subparts 2 to 5.

Subp. 2. **General additions, modifications, or exceptions to incorporation of regulations.**

A. Part 7045.0090, adoption and incorporation by reference, also applies.

B. The agency does not incorporate the definitions of debris or hazardous debris in Code of Federal Regulations, title 40, section 268.2, or the regulations related to debris and hazardous debris throughout Code of Federal Regulations, title 40, part 268, including the treatment standards for hazardous debris in section 268.45. Wastes that would be federally regulated as debris or hazardous debris are regulated as hazardous waste.

Subp. 3. **Exceptions or additions to Code of Federal Regulations, title 40, subpart A.**

A. The agency does not incorporate Code of Federal Regulations, title 40, section 268.1(c)(3), allowing disposal into an injection well.

B. References to "EPA" in Code of Federal Regulations, title 40, sections 268.1(e)(3) and 268.2(j) mean the federal Environmental Protection Agency.

C. The agency does not incorporate the definitions found in Code of Federal Regulations, title 40, section 268.2, paragraph a, c, d, e, f, g, or h.

D. References in Code of Federal Regulations, title 40, section 268.7(a)(9)(iii), to D001 to D043 do not include D009.

E. The agency does not incorporate Code of Federal Regulations, title 40, section 268.5, governing procedures for case-by-case extensions to an effective date. That section is administered by the EPA.

F. The agency does not incorporate Code of Federal Regulations, title 40, section 268.6, governing petitions to allow land disposal of a waste prohibited under subpart C. Part 7045.0075, subpart 9, applies.

G. The agency does not incorporate Code of Federal Regulations, title 40, section 268.4(a)(3)(ii) and (iii), relating to waivers or modifications of surface impoundment requirements.

Subp. 4. **Exceptions or additions to Code of Federal Regulations, title 40, subpart B.** The agency does not incorporate the EPA schedule in Code of Federal Regulations, title 40, section 268.13, for wastes identified or listed after November 8, 1984. That section is administered by the Environmental Protection Agency.

Subp. 5. **Exceptions or additions to Code of Federal Regulations, title 40, subpart D.**

A. The agency does not incorporate Code of Federal Regulations, title 40, section 268.42(b), governing the demonstration of an alternative treatment method. That section is administered by the EPA.

B. The agency does not incorporate Code of Federal Regulations, title 40, section 268.44, paragraphs (a) to (g) or (o), governing variance from a treatment standard and wastes excluded in various states. That section is administered by the EPA.

REPEALER. Minnesota Rules, parts 7045.0020, subpart 45a; 7045.0075, subparts 8 and 10; 7045.0135, subparts 1, 2, 2a, 3, and 4; 7045.0139, subpart 2; 7045.0141, subparts 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 23; 7045.0143, subparts 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 14, 15, 17, 20, 21, 23, 25, and 27; 7045.0544, subparts 2 and 3; 7045.1300; 7045.1305; 7045.1309; 7045.1310; 7045.1315; 7045.1320; 7045.1325; 7045.1330; 7045.1333; 7045.1334; 7045.1335; 7045.1339; 7045.1350; 7045.1355; 7045.1358; 7045.1360; and 7045.1380, are repealed.

RCRA REVISION CHECKLIST 95
Land Disposal Restrictions for
Electric Arc Furnace Dust (K061)
56 FR 41164-41178
August 19, 1991
(RCRA Cluster II, HSWA Rule)

Note: This checklist revises and finalizes treatment standards for K061 nonwastewaters in the high zinc subcategory originally regulated in the First Third Land Disposal Restrictions rule addressed by Revision Checklist 50 (53 FR 31138; August 17, 1988). Other related checklists include Revision Checklist 62 (54 FR 18836; May 2, 1989) and Revision Checklist 66 (54 FR 36967; September 6, 1989), as these two checklists amended and corrected Revision Checklist 50.

Revision Checklist 100 Summary

Rule Title:	Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units; Final Rule
Checklist Title:	Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units
Reference:	57 FR 3462-3497
Promulgation Date:	January 29, 1992
Effective Date:	July 29, 1992
Cluster:	RCRA II
Provision Type:	HSWA/Non-HSWA
Linkage:	Checklists 17 H, 77, 137, 157
Optional:	No

Summary: This final rule modifies the existing regulations concerning double-liner and leachate collection and removal systems for hazardous waste surface impoundments, landfills and waste piles. The rule also requires owners and operators of hazardous waste surface impoundments, landfills and waste piles to install and operate leak detection systems at such time as these units are added, laterally expanded, or replaced. The January 29, 1992 final rule applies to such units regardless of their permit status, including facilities that were issued permits prior to November 8, 1984. The rule replaces the double-liner and leachate collection system standards codified on July 15, 1985 (Revision Checklist 17H), and amended on May 9, 1990 (Revision Checklist 77). EPA has not included additional leak detection standards for permitted land treatment units in this final rule because existing unsaturated zone monitoring requirements in 40CFR 264.278 and 265.278 for such units are sufficient to ensure the detection of leaks at the earliest practicable time. The January 29, 1992 rule finalizes EPA's proposed actions of March 28, 1986 and May 29, 1987, and completes the Agency's statutory rulemaking responsibilities imposed by RCRA §§3004(o)(4) and 3004(o)(5)(A).

The Agency is requiring owners and operators of units affected by this rule to develop a construction quality assurance (CQA) program for various components of surface impoundments, waste piles, and landfills. The program will be implemented through a construction quality assurance plan that the owner or operator will prepare to ensure that the constructed unit meets or exceeds all design criteria, plans and specifications.

State Authorization: EPA promulgated most of this rule in response to the requirements of HSWA, with the exception of the Construction Quality Assurance Program (CQA) as it applies to final cover requirements. EPA will implement the HSWA provisions in authorized States until States modify their programs and such modifications are approved by EPA. The non-HSWA provisions are applicable in only those States that are unauthorized. In authorized States, the non-HSWA requirements will not be applicable until the States revise their programs to adopt equivalent requirements under State law.

Both the HSWA and non-HSWA provisions are included in RCRA Cluster II. States may apply for either interim or final authorization for the HSWA provisions; only final authorization is available for the non-HSWA provisions. An interim final rule was published in mid December, 1992, extending interim authorization for HSWA provisions until January 1, 2003. The State modification deadline is July 1, 1993 (or July 1, 1994 if a State statutory change is necessary). The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 100, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XVI Y in the Model Attorney General's Statement.

Revision Checklist 100 Summary (cont'd)

Y. State statutes and regulations include specific Part B information requirements for surface impoundments, waste piles and landfills regarding liners; leachate collection, detection, and removal systems; and the construction quality assurance program requirements as indicated in Revision Checklist 100.

Federal Authority: RCRA §§3004, 3005, 3006 and 3015; 40 CFR 270.4(a), 270.17(b)&(c), 270.18(c)&(d), and 270.21(b)&(c) as amended January 29, 1992 (57 FR 3462).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Attorney General's Statement Entry: The following entry should be placed at Subsection XVII C in the Model Revision Attorney General's Statement.

C. State statutes and regulations require owners and operators of new units, expansions, and replacement units at surface impoundments, waste piles, and landfills to meet the monitoring and inspection Construction Quality Assurance (CQA) program, double liner, leachate collection and removal systems, leak detection systems, action leakage, response action plan and closure/post-closure care requirements as indicated in Revision Checklist 100.

Federal Authority: RCRA §§3004, 3005, 3006 and 3015; 40 CFR 264.19, 264.221-223, 264.226, 264.228, 264.251-264.254, 264.301-264.304, 264.310, 265.19, 265.221-265.223, 265.226-265.228, 265.254, 265.255, 265.259, 265.260, 265.301-265.304 and 265.310 as amended January 29, 1992 (57 FR 3462).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 108 Summary

Rule Title:	Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristic; Corrections
Checklist Title:	Toxicity Characteristic Revisions; Technical Corrections
Reference:	57 FR 30657-30658
Promulgation Date:	July 10, 1992
Effective Date:	July 10, 1992
Cluster:	RCRA III
Provision Type:	HSWA
Linkage:	Revision Checklist 74, 117 B, and 119
Optional:	No

Summary: This rule corrects errors made at the time of the promulgation of the final Toxicity Characteristic (TC) rule (March 29, 1990, 55 FR 11798; Revision Checklist 74). In the preamble, the exclusion from subtitle C regulation for arsenical-treated wood and wood products was revised inappropriately. As a result, EPA unintentionally narrowed the scope of the exclusion by excluding only arsenical-treated wood and wood products that failed the TC "solely for arsenic." The July 10, 1992 rule corrects that revision at 261.4(b)(9). The rule also corrects the regulatory language in 40 CFR 261.4(b)(6)(ii) and 265.301(d)(1) by deleting references to the Extraction Procedure (EP) Toxicity Characteristic and replacing them with references to the TC.

State Authorization: This rule is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995 if a State statutory change is necessary). All changes go into effect immediately, because this rule was promulgated under HSWA authorities. Both interim and final authorization are available, with the former expiring on January 1, 2003. The State Revision Application must include applicable regulations, an AG statement addendum, Revision Checklist 108, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The entry at Subsection I L in the Model Revision Attorney General's Statement should be replaced with the following:

> L. State statutes and regulations revise the existing toxicity characteristic by replacing the Extraction Procedure (EP) leach test with the Toxicity Characteristic Leaching Procedure (TCLP) for identifying wastes that are defined as hazardous and subject to regulation under Subtitle C of RCRA as indicated in Revision Checklists 74 and 108. State statutes and regulations also provide for the addition of 25 organic chemicals and their regulatory levels to the list of toxic constituents of concern as indicated in Revision Checklist 74.

Revision Checklist 108 Summary (cont'd)

Federal Authority: RCRA §§1006, 2002(a), 3001, 3002, 3004, 3005 and 3006; 40 CFR Parts 261, 264, 265 and 268 as amended March 29, 1990 (55 FR 11798), June 29, 1990 (55 FR 26986) and July 10, 1992 (57 FR 30657).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 109 Summary

Rule Title:	Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris
Checklist Title:	Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris
Reference:	57 FR 37194-37282, 57 FR 39275, and 57 FR 41173
Promulgation Date:	August 18, 1992
Effective Date:	February 18, 1993 for 262.34, 264.110, 264.111, 264.112, 264.140, 264.142, part 264 subpart DD, 265.110, 265.111, 265.112, 265.140, 265.142, 265.221, and part 265 subpart DD; November 9, 1992[1] for 148.17(a), 260.10, 261.3(c)(2)(ii)(C), 268.2, 268.5, 268.7, 268.9, 268.36(a), 268.40, 268.41, 268.42, 268.43, 268.45, 268.46, 268.50, 270.14, 270.42, 270.72, and 271.1; and June 30, 1992 for the remainder of the rule
Cluster:	RCRA III
Provision Type:	HSWA
Linkage:	Revision Checklists 34, 39, 50, 63, 78, 103,106, 137, 151, 157, and 167A-C. (Indirectly, to the corrections to these rules--62, 66, 83 and 102.)
Optional:	No

Summary: This rule finalizes treatment standards under the land disposal restrictions (LDR) program for certain hazardous wastes listed after November 8, 1984, pursuant to a proposed consent decree filed with the District Court establishing a June 1992 promulgation date (*EDF vs. Reilly, Civ. No. 89-0598, D.D.C.*). This rule also finalizes revised treatment standards for debris contaminated with listed hazardous wastes or debris that exhibit certain hazardous waste characteristics. Several revisions are also made to existing standards and requirements.

Certain aspects of this rule could be affected by the recently proposed Hazardous Waste Identification rule (57 FR 21450; May 20, 1992) which deals with the question of when wastes are hazardous, concentration levels, and circumstances where wastes aren't hazardous. That rule also examines when land disposal prohibitions might and might not apply. However, the present *mixture* and *derived-from* rules remain in effect (57 FR 7268; March 3, 1992). The preamble to the August 18, 1992 rule codifies the "contained-in" policy with respect to contaminated debris. See 57 FR 37225, 3rd column, "2. Definition of Hazardous Debris."

State Authorization: This rule is promulgated pursuant to HSWA and is placed in RCRA Cluster III. Both interim and final authorization are available, with the former expiring on January 1, 2003. The State modification deadline is July 1, 1993 (or July 1, 1994 if a State statutory change is necessary). The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 109, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entries should be placed at Subsections XXI K, L & M in the Model Revision Attorney General's Statement.

---

[1]Date was corrected from "November 16, 1992" to "November 19, 1992" by 57 FR 39275. This date was then corrected fr "November 19, 1992" to "November 9, 1992", by 57 FR 41173.

Revision Checklist 109 Summary (cont'd)

K. State statutes and regulations provide land disposal treatment standards for certain hazardous wastes listed after November 8, 1984 as well as treatment standards for debris contaminated with listed hazardous wastes or debris that exhibit certain hazardous waste characteristics as indicated in Revision Checklist 109.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 261.3(f), 268.2, 268.5, 268.7, 268.14, 268.36, 268.40, 268.41, 268.42, 268.43, 268.45, 270.13 and 270.14, as amended August 18, 1992 (57 FR 37194).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

L. State statutes and regulations include revisions to existing land disposal restrictions including revision of F001-F005 spent solvents treatment standards, conversion of wastewater standards for twenty-four "F" and "K" water codes based on scrubber standards; revisions to K061, K062 and F006 treatment standards; change of recordkeeping requirements; and clarification of rules related to wastes listed because they exhibit a characteristic as indicated in Revision Checklist 109.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 261.3(a)&(c), 268.9, 268.41, 268.42, 268.43 and 268.46, as amended August 18, 1992 (57 FR 37194).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

M. State statutes and regulations allow storage and treatment in containment buildings as indicated in Revision Checklist 109.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 260.10, 262.34, 264.110, 264.111, 264.112, 264.140, 264.142, 264 Subpart DD, 265.110, 265.111, 265.112, 265.140, 265.142, 265.221, 265 Subpart DD, 268.50, 270.42 and 270.72, as amended August 18, 1992 (57 FR 37194).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 110 Summary

Rule Title:	Identification and Listing of Hazardous Waste; CERCLA Hazardous Designation; Reportable Quality Adjustment; Coke By-Products Wastes
Checklist Title:	Coke By-Products Listings
Reference:	57 FR 37284-37306
Promulgation Date:	August 18, 1992
Effective Date:	February 18, 1993
Cluster:	RCRA III
Provision Type:	HSWA
Linkage:	Revision Checklists 85, 98 and 105
Optional:	No

Summary: This rule adds seven wastes (K141-K145, K147 and K148) generated during the production, recovery, and refining of coke by-products produced from coal to the 40 CFR 261, Subpart D list of hazardous wastes from specific sources. Part 261, Appendix VII is also being amended. The rule also finalizes the proposed determination not to list as hazardous, wastewater from coking and tar refining operations. Finally, the June 22, 1992 (57 FR 27880) exclusion, from the definition of a solid waste for wastes from the coke by-products process that exhibit the TC and are recycled by being returned to coke ovens or mixed with coal tar, is amended and clarified.

State Authorization: This rule is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995, if a State statutory change is necessary). All changes go into effect immediately, because this rule was promulgated under HSWA authorities. Both interim and final authorization are available, with the former expiring on January 1, 2003. The State Revision Application must include applicable regulations, an AG statement addendum, Revision Checklist 110, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should replace the entry at I Y in the Model Revision Attorney General's Statement:

> Y. [OPTIONAL: This is a reduced requirement.] State statutes and regulations exclude from being a solid waste K060, K087, K141, K142, K143, K144, K145, K147 and K148, and those coke by-product residues that are hazardous only because they exhibit the Toxicity Characteristic when, subsequent to generation, these wastes are recycled by being returned to coke ovens, to the tar recovery process as a feedstock to produce coal tar, or mixed with coal tar as specified in Revision Checklists 105 and 110.
>
> Federal Authority: RCRA §§3001(e)(2) and (h); 40 CFR 261.4(a)(10) as amended June 22, 1992 (57 FR 27880) and August 18, 1992 (57 FR 37284).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

The following entry should be placed at Subsection I A(23) in the Model Attorney General's Statement.

Revision Checklist 110 Summary (cont'd)

(23) Listing of seven wastes (K141, K142, K143, K144, K145, K147, and K148) generated during the production, recovery and refining of coke by-products produced from coal, 40 CFR 261.32, and Part 261 Appendix VII as amended August 18, 1992 [57 FR 37284], Revision Checklist 110.

[Note this entry does not need the sections titled "Federal Authority", "Citation of Laws and Regulations; Date of Enactment and Adoption", and "Remarks of the Attorney General", because there is a general statement of these for the entries under Subsection I A.]

Revision Checklist 113 Summary

Rule Titles: This rule consolidates the changes made by the following three rules:

- Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Liability Coverage
- Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities; Liability Requirements
- Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities; Financial Responsibility for Third-Party Liability, Closure, and Post-Closure

Checklist Title: Consolidated Liability Requirements
References: 53 FR 33938-33960, 56 FR 30200, and 57 FR 42832-42844
Promulgation Dates: September 1, 1988; July 1, 1991; and September 16, 1992
Effective Dates: October 3, 1988; July 1, 1991; September 16, 1992
Cluster: RCRA Cluster III
Provision Type: Non-HSWA
Linkage: None
Optional: No, but certain portions of this checklist are optional

Summary: On September 1, 1988, (53 FR 33938), the Agency issued a final rule that expanded the instruments available to owners and operators to demonstrate financial responsibility for third-party liability assurance. This rule also established, at §§264.147 and 265.147, a claims reporting requirement for third-party claims. Chemical Waste Management, Inc. (CWM) challenged several portions of this rule and on February 23, 1990 entered into a settlement agreement with EPA in which the Agency agreed to make several changes to the liability coverage requirements. Because of this litigation and resulting settlement agreement, the checklist (i.e. Revision Checklist 51) for this rule was withheld. The Agency encouraged States to not adopt the provisions addressed by the September 1, 1988 rule until all of the amendments agreed to in the settlement agreement were made. On July 1, 1991 (56 FR 30200) a final rule correcting the September 1, 1988 rule was issued. Specifically, that rule corrected the omission of "miscellaneous" units as subject to the requirements of 264.147(b) and, as part of satisfying the settlement agreement, references to 264.147(f) and 265.147(f) were inserted into 264.147(a)(2) and 265.147(a)(2), respectively. The Agency also withheld the checklist (i.e., Revision Checklist 93) for that rule because this correction did not address all of the regulatory amendments required by the settlement agreement. The remaining settlement agreement amendments were made by the September 16, 1992 rule (57 FR 42832). That notice also promulgated a conforming change to §§264.147(f)(6) and 265.147(f)(6) to expand the instruments available to owners and operators that no longer meet the requirements of the financial test for liability coverage.

This present checklist, Revision Checklist 113, is a special checklist which consolidates the changes made to the Federal regulations by the September 1, 1988, the July 1, 1991, and the September 16, 1992 final rules so that States can adopt these changes at one time. Revision Checklists 51 and 93 will not be issued, nor will a separate checklist be developed for the September 16, 1992 rule. Rather, States should use this Consolidated Liability Requirements Checklist to adopt the provisions of these three final rules. States that

Revision Checklist 113 Summary (cont'd)

already have adopted changes based on the September 1, 1988 final rule are strongly encouraged to complete this consolidated checklist to ensure that all revisions pursuant to the later two amendments are correctly made in the State's code. Note that the deadline for this Consolidated Checklist is based on the promulgation date of the most recent of the rules.

State Authorization: This checklist is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995 if a State statutory change is necessary). These changes do not go into effect until States become authorized for them because this rule was promulgated under pre-HSWA authorities. Only final authorization is available.

Note that the claims reporting requirements as promulgated by the September 1, 1988 rule were originally classified as optional; however, as there were no reporting requirements prior to that time, the Agency has determined that these requirements were, in fact, more stringent. States should have been required to modify their programs to include these requirements by July 1, 1990. However, since States were not notified of this obligation, the Agency will, for the purposes of determining applicable deadlines under §271.21(e)(2), treat these requirements as if they were promulgated on September 16, 1992.

Note, however, that the revisions to the claims reporting requirements that were promulgated by the September 16, 1992 rule are not more stringent than the reporting requirement at §§264.147(a)(7)&(b)(7) and 265.147(a)(7)&(b)(7) as promulgated by the September 1, 1988 rule. Therefore, States that have already adopted the claims requirements as promulgated by the September 1, 1988 rule are not required to adopt the clarified reporting requirement, although EPA urges them to do so. States that have not yet adopted the September 1, 1988 rule's claims reporting requirements should not do so, but should adopt the clarified version promulgated by the September 16, 1992 rule as indicated by Revision Checklist 113.

The State revision application must include applicable regulations, an AG statement addendum, the Consolidated Liability Requirements Checklist, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entries should be placed at Subsections XV O, P and Q in the Model Revision Attorney General's Statement.

> O. [OPTIONAL: This is a reduced requirement.] State statutes and regulations allow the use of additional financial instruments (letter of credit, a surety bond, a guarantee, trust fund, and purchase of insurance by other firms) to meet the liability coverage requirements as specified in Revision Checklist 113.
>
> Federal Authority: RCRA §§2002(a), 3004 and 3005; 40 CFR 264.141, 264.147, 264.151, 265.141, 265.147 and 265.151 as amended September 1, 1988 (53 FR 33938), July 1, 1991 (56 FR 30200), and September 16, 1992 (57 FR 42832).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Revision Checklist 113 Summary (cont'd)

P. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include conforming changes to 264.147(f)(6) and 265.147(f)(6) to expand the instruments available to owners and operators that no longer meet the requirements of the financial test for liability coverage as indicated in Revision Checklist 113.

Federal Authority: RCRA §3004; 40 CFR 264.147(f)(6) and 265.147(f)(6) as amended September 16, 1992 (57 FR 42832).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Q. State statutes and regulations require reporting of third-party claims against an owner's or operator's liability coverage as indicated by Revision Checklist 113.

Federal Authority: RCRA §§2002(a), 3004 and 3005; 40 CFR 264.147(a)(7)&(b)(7) and 265.147(a)(7)&(b)(7) as amended September 1, 1988 (53 FR 33938) and September 16, 1992 (57 FR 42832).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 115 Summary

Rule Title:	Hazardous Waste Management System: Identification and Listing of Hazardous Waste and CERCLA Hazardous Substance Designation; Reportable Quantity Adjustment, Chlorinated Toluenes Production Wastes
Checklist Title:	Chlorinated Toluenes Production Waste Listing
Reference:	57 FR 47376-47386
Promulgation Date:	October 15, 1992
Effective Date:	April 15, 1993
Cluster:	RCRA Cluster III
Provision Type:	HSWA
Linkage:	None
Optional:	No

Summary: This rule adds to the list of hazardous wastes from specific sources three wastes (K149, K150 and K151) generated during the production of alpha- (or methyl-) chlorinated toluenes, ring chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, collectively referred to in this rule as "chlorinated toluenes." Part 261, Appendix VII is also amended.

State Authorization: This rule is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995 if a State statutory change is necessary). All changes go into effect immediately, because this rule was promulgated under HSWA authorities. Both interim and final authorization are available, with the former expiring on January 1, 2003. The State Revision Application must include applicable regulations, an AG statement addendum, Revision Checklist 115, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection I A(24) in the Model Revision Attorney General's Statement.

> (24) Listing of three wastes (K149, K150, and K151) from the production of chlorinated toluenes, 40 CFR 261.32 and Part 261 Appendix VII, as amended October 15, 1992 [57 FR 47376], Revision Checklist 115.

[Note this entry does not need the sections titled "Federal Authority", "Citation of Laws and Regulations; Date of Enactment and Adoption", and "Remarks of the Attorney General", because there is a general statement of these for the entries under Subsection I A.]

Revision Checklist 116 Summary

Rule Title:	Hazardous Waste Management System: Land Disposal Restrictions
Checklist Title:	Hazardous Soil Case-by-Case Capacity Variance
Reference:	57 FR 47772-47776
Promulgation Date:	October 20, 1992
Effective Date:	October 13, 1992
Cluster:	RCRA Cluster III
Provision Type:	HSWA
Linkage:	Revision Checklists 78, 83, 103, 106, 123, 137 and 157
Optional:	No

Summary: On June 1, 1990 (55 FR 22520; Revision Checklist 78), EPA promulgated a final rule establishing prohibitions and treatment standards for Third Third wastes. Because of a lack of treatment capacity, EPA granted a two-year national capacity variance for those hazardous soils whose best demonstrated available technology (BDAT) was incineration, retorting, or vitrification, as well as for soils contaminated with radioactive mixed waste. As such, these wastes are prohibited from land disposal on May 8, 1992, unless the treatment standards are met. This October 20, 1992 rule provides, under 40 CFR 268.5, a one-year extension of the Land Disposal Restrictions (LDR) effective date for this same set of hazardous waste contaminated soils. The action is taken because EPA recognizes that owners and operators of treatment, storage and disposal facilities will have difficulty in obtaining treatment capacity that meets the existing treatment standards by May 8, 1992, when this national capacity variance expires. No further applications will be required at this time from persons granted an extension by this action. Specific recordkeeping and other requirements must be followed to qualify for this extension. Certain clarifications are also made to the amendatory language promulgated on June 26, 1992 (57 FR 28628; Revision Checklist 106) in connection with a similar extension for contaminated debris. These changes do not alter that extension and are intended solely to clarify the Agency's original extension. Note that a May 24, 1993 rule (58 FR 28506; Revision Checklist 123) amends the case-by-case extension for contaminated soils by clarifying that the extension granted on October 20, 1992 applied only to soils regulated under the Third Third Land Disposal Restriction rule.

State Authorization: This rule is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available, with the former expiring on January 1, 2003. The State Revision Application must include applicable regulations, an AG statement addendum, Revision Checklist 116, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

AttorneyGeneral's Statement Entry: The following entry should replace the entry at Subsection XXII in the Model Revision Attorney General's Statement.

> I. State statutes and regulations provide an extension of the land disposal restriction effective date for hazardous waste debris until May 8, 1993, as indicated in Revision Checklists 103 and 116.
>
> Federal Authority: RCRA §3004(h)(3); 40 CFR 268.35(c)-(e) as amended May 15, 1992 (57 FR 20766); and October 20, 1992 (57 FR 47772).

Revision Checklist 116 Summary (cont'd)

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be inserted at Subsection XXI N of the Model Revision Attorney General's Stateme

N. State statutes and regulations provide a case-by-case extension of the land disposal effective date until May 8, 1993 for Third Third hazardous soils whose best demonstrated available technology (BDAT) was incineration, retorting or vitrification, as well as for Third Third soils contaminated with radioactive mixed waste as indicated in Revision Checklist 116.

Federal Authority: RCRA §3004(h)(3); 40 CFR 268.35(c)-(e) as amended October 20, 1992 (57 FR 47772).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 117 B Summary

Rule Title:	Hazardous Waste Management System; Definition of Hazardous Waste; "Mixture" and "Derived-From" Rules
Checklist Title:	Toxicity Characteristic Amendment
Reference:	57 FR 23062-23063
Promulgation Date:	June 1, 1992
Effective Date:	June 1, 1992
Cluster:	RCRA Cluster III
Provision Type:	HSWA
Linkage:	Revision Checklist 74, 108 and 119
Optional:	No

Summary: The Toxicity Characteristic rule [55 FR 11798 (March 29, 1990) Revision Checklist 74] and its subsequent amendments [55 FR 26986 (June 29, 1001) and 57 FR 30657 (July 10, 1992) Revision Checklist 74] omitted changing the reference to the "Extraction Procedure Toxicity Characteristic" at 261.3(a)(2)(i). The March 3, 1992 (57 FR 7628) reissuance of the "mixture" and "derived-from" rule reissued 261.3 with that error still in it. The June 1, 1992 amendment (57 FR 23062) to that reissued code corrected this error. Because this change makes the Federal code more stringent, it is required and was placed in a checklist separate from the other provisions (considered optional, for States) addressing the reissuance of the "mixture" and "derived-from" rules.

State Authorization: This rule is placed in RCRA Cluster III, due to the delay in developing a checklist for this change and its relationship to the reissuance of the "mixture" and "derived-from" rules addressed by Revision Checklist 117 A. The State modification deadline is July 1, 1994 (or July 1, 1995, if a State statutory change is necessary). This change is conducted under HSWA authorities because it is necessitated by the changes made by the Toxicity Characteristic rule, which was promulgated under HSWA authorities. The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 117 B, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The entry at I L in the Model Revision Attorney General's Statement should be replaced with the following:

> L. State statutes and regulations revise the existing toxicity characteristic by replacing the Extraction Procedure (EP) leach test with the Toxicity Characteristic Leaching Procedure (TCLP) for identifying wastes that are defined as hazardous and subject to regulation under Subtitle C of RCRA as indicated in Revision Checklists 74, 108 and 117B. State statutes and regulations also provide for the addition of 25 organic chemicals and their regulatory levels to the list of toxic constituents of concern as indicated in Revision Checklist 74.

Revision Checklist 117 B Summary (cont'd)

Federal Authority: RCRA §§1006, 2002(a), 3001, 3002, 3004, 3005 and 3006; 40 CFR Parts 261, 264, 265 and 268 as amended March 29, 1990 (55 FR 11798), June 29, 1990 (55 FR 26986), June 1, 1992 (57 FR 23062), and July 10, 1992 (57 FR 30657).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 118 Summary

Rule Title:	Hazardous Waste Management
Checklist Title:	Liquids in Landfills II
Reference:	57 FR 54452-54461
Promulgation Date:	November 18, 1992
Effective Date:	May 18, 1993
Cluster:	RCRA III
Provision Type:	HSWA
Linkage:	Revision Checklists 17 F and 145
Optional:	No

Summary: This rule's purpose is to assure the stability of materials in hazardous waste landfills. It satisfies the HSWA requirement that EPA issue a rule prohibiting disposal in landfills of liquids that have been sorbed by materials that biodegrade or that release liquids when compressed, as might occur during routine landfill operations. Specifically, the Paint Filter Test, Method 9095, is adopted for testing containerized liquids to which sorbents were added prior to land disposal. This rule also lists classes of nonbiodegradable sorbents and gives examples in each class. Two tests are identified that may be used to determine nonbiodegradability of sorbents not within a class on the list. Lab packs must also have nonbiodegradable sorbents.

State Authorization: This rule is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995 if a State statutory change is necessary). All changes go into effect immediately, because this rule was promulgated under HSWA authorities. Both interim and final authorization are available, with the former expiring on January 1, 2003. The State Revision Application must include applicable regulations, an AG statement addendum, Revision Checklist 118, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection X B in the Model Revision Attorney General's Statement.

> B. State statutes and regulations prohibit the disposal, in hazardous waste landfills, of liquids that have been sorbed in materials that are biodegradable or that release liquids during routine landfill operations, as indicated in Revision Checklist 118.
>
> Federal Authority: RCRA §3004(c); 40 CFR 260.10, 264.13, 264.314, 264.316, 265.13, 265.314, and 265.316 as amended November 18, 1992 (57 FR 54452).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Revision Checklist 123 Summary

Rule Title:	Land Disposal Restrictions; Renewal of the Hazardous Waste Debris Case-by-Case Capacity Variance
Checklist Title:	Land Disposal Restrictions; Renewal of the Hazardous Waste Debris Case-by-Case Capacity Variance
Reference:	58 FR 28506-28511
Promulgation Date:	May 14, 1993
Effective Date:	May 8, 1993
Cluster:	RCRA Cluster III
Provision Type:	HSWA
Linkage:	Revision Checklists 78, 83, 103, 116, 137, 157, and 167A-C
Optional:	No

Summary: This is the fifth rule addressing hazardous debris and soil contaminants with Third Third wastes. Revision Checklist 78 (55 FR 22520; June 1, 1990) established a national capacity variance for certain hazardous waste soil and debris at 268.35(e). Revision Checklist 83 (56 FR 3864; January 31, 1991) amended 268.35(d) to also address mixed radioactive hazardous waste and amended 268.35(e) to address additional wastes. Revision Checklist 103 (57 FR 20766; May 15, 1992) established a case-by-case extension, until May 8, 1993, for contaminated debris only. Revision Checklist 116 (57 FR 47772; October 20, 1992), which added a case-by-case variance for certain hazardous soils, also clarified that the case-by-case extension for hazardous debris also included wastes mixed with radioactive hazardous waste. This current rule extends, until May 8, 1994, the case-by-case extension for hazardous debris granted by the May 15, 1992 final rule. However, only debris and mixed radioactive/hazardous debris contaminated with wastes listed in 268.12 and/or any characteristic waste for which treatment standards are established in Subpart D of Part 268 are included in this extension. No further variance or extension of the LDR effective dates for hazardous debris can be given after May 8, 1994. This final rule also amends the case-by-case extension for contaminated soils by clarifying that the extension granted on October 20, 1992 applied only to soils regulated under the Third Third Land Disposal Restriction Rule.

States that have already adopted any of the previous rules addressing hazardous debris and soil should adopt this rule as soon as possible. States that have not adopted Third Third regulations should adopt this rule when adopting the other Third Third rules.

State Authorization: This rule is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003. The State revision application must include applicable regulations, an AG statement addendum, Revision Checklist 123, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should replace the entry at Subsection XXII in the Model Revision Attorney General's Statement.

> I. State statutes and regulations provide an extension of the land disposal restriction effective date for hazardous waste debris until May 8, 1994, as indicated in Revision Checklists 103, 116, and 123.

Revision Checklist 123 Summary (cont'd)

Federal Authority: RCRA §3004(h)(3); 40 CFR 268.35(c)-(e) as amended May 15, 1992 (57 FR 20766), October 20, 1992 (57 FR 47772), and May 14, 1993 (58 FR 28506).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should replace the entry at Subsection XXI N of the Model Revision Attorney General's Statement:

N. State statutes and regulations provide a case-by-case extension of the land disposal effective date until May 8, 1994 for Third Third hazardous soils whose best demonstrated available technology (BDAT) was incineration, retorting or vitrification, as well as for Third Third soils contaminated with radioactive mixed waste as indicated in Revision Checklists 116 and 123.

Federal Authority: RCRA §3004(h)(3); 40 CFR 268.35(c)-(e) as amended October 20, 1992 (57 FR 47772) and May 14, 1993 (57 FR 28506).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 124 Summary

Rule Title:	Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated
Checklist Title:	Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated
Reference:	58 FR 29860-29887
Promulgation Date:	May 24, 1993
Effective Date:	May 10, 1993
Cluster:	RCRA Cluster III
Provision Type:	HSWA
Linkage:	Revision Checklists 78, 83, 137, 151, 157, and 167A-C
Optional:	No

Summary: This rule amends the land disposal restriction treatment standards for certain ignitable (EPA Hazard code D001) and corrosive wastes (EPA hazard Code D002) that are not managed: 1) in centralized waste water treatment systems subject to the Clean Water Act (CWA), 2) in Class I injection wells regulated under the Safe Drinking Water Act, or 3) by a zero discharger with a waste water treatment equivalent to that used by CWA dischargers, prior to land disposal. While the requirement of deactivation to remove the hazardous characteristic is retained, this rule also sets numerical treatment standards. Alternate treatment standards are promulgated for incineration, fuel substituting, and recovery of organics for ignitable wastes. Precautionary measures are also established to prevent emissions of volatile organic constituents of violent reactions during the process of diluting ignitable reactive wastes. Finally, a 3-month national capacity variance for persons affected by this interim final rule is included in this notice. An extension (until February 10, 1994) is granted for persons disposing of affected waste in certain Class V UIC wells. These actions are being taken to comply with the September 25, 1992 decision of the U.S. Court of Appeals [Chemical Waste Management vs. EPA, 976 F.2d 2 (D.C. Cir. 1992)] which vacated these treatment standards. Without replacement of these standards, land disposal of these wastes would be prohibited.

State Authorization: This rule is placed in RCRA Cluster III. The State modification deadline is July 1, 1994 (or July 1, 1995 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003. The State revision application must include applicable regulations, an AG statement addendum, Revision Checklist 124, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

AttorneyGeneral's Statement Entry: The following entry should be inserted at Subsection XXI O of the Model Revision Attorney General's Statement.

> O. State statutes and regulations include land disposal restrictions and treatment standards for certain ignitable and corrosive characteristic wastes whose treatment standards were vacated, as indicated in Revision Checklist 124.
>
> Federal Authority: RCRA §3004(d),(e)&(g); 40 CFR 268.37 as amended on May 24, 1993 (58 FR 29860).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption

Revision Checklist 124 Summary (cont'd)

Remarks of the Attorney General

Revision Checklist 126 Summary

Rule 1 Title:	Testing and Monitoring Activities
Rule 2 Title:	Testing and Monitoring Activities, Land Disposal Restrictions Correction
Checklist Title:	Testing and Monitoring Activities
Reference:	58 FR 46040-46051 and 59 FR 47980-47982
Promulgation Date:	August 31, 1993 and September 19, 1994
Effective Date:	August 31, 1993 and August 31, 1993
Cluster:	RCRA Cluster IV
Provision Type:	HSWA/Non-HSWA
Linkage:	Revision Checklists 11, 35, 67, 73, 139, 141, 158 and 180
Optional:	No

Summary: The August 31 (58 FR 46040) rule replaces the current Second Edition (including Updates I and II) of the EPA-approved "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, by incorporating by reference the Third Edition (and its first update) in § 260.11. This rule also revises Part 261 Appendices II (Method 1311, Toxicity Characteristic Leaching Procedure) and III (Chemical Analysis Test Methods) to refer directly to SW-846; deletes Part 261 Appendix X (Method of Analysis for Chlorinated Dibenzo-p-dioxins and Dibenzofurans); and revises Part 268 Appendices I (Toxicity Characteristic Leaching Procedure) and IX (Extraction Procedure Toxicity Test) to refer to SW-846. In conjunction with these changes, various references to the methods formerly contained in these appendices are changed to refer directly to SW-846.

The September 19th (59 FR 47980) rule corrects the unintended removal of text from 40 CFR 268.7(a) by August rule. Paragraph 268.7(a) sets out the generator waste analysis and recordkeeping requirements of the land disposal restrictions under Subtitle C of RCRA. The August rule revised the reference to Appendix IX of Part 268 to refer to SW-846 Methods 1311 and 1310, instead. The Agency had intended to revise only the introductory text of 268.7(a) and to retain without changing the subparagraphs following the introductory text. Due to an inadvertent administrative error the subparagraphs following the introduction were removed. The September rule makes clear that it was not the Agency's intention to remove these paragraphs and that they remain in effect, and are regarded by the Agency, to have been in effect continuously in the form published in the CFR revised as of July 1, 1993. For this reason, the September rule was not made into a separate checklist.

State Authorization: These rules are placed in RCRA Cluster IV. The State modification deadline is July 1, 1995 (or July 1, 1996 if a State statutory change is necessary). The changes for all provisions except 261.22, 261.24, and Appendix II, Part 261, do not go into effect until States become authorized for them because this rule was promulgated under pre-HSWA authorities. Only final authorization is available. The changes to 261.22, 261.24, Appendix II, Part 261 and 268.7(a) affect the Toxicity Characteristic and the TCLP, both of which were added due to HSWA authority. Thus, these changes are considered HSWA provisions and go into effect immediately. Both interim and final authorization are available, with interim authorization expiring on January 1, 2003. The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 126, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office

Attorney General's Statement Entry: The following new entry should be placed at Subsection I BB in the Model Revision Attorney General's Statement.

Revision Checklist 126 Summary (cont'd)

BB. State statutes and regulations replace the current Second Edition (including Updates I and II) of the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, by incorporating by reference the Third Edition (and its first update) of this test methods manual. Throughout the State's code, references to test methods directly refer to the methods as they are found in SW-846, as indicated in Revision Checklist 126.

Federal Authority: RCRA §§1006; 2002, 3001, 3002, 3004, 3005, 3006, 3010, and 3014; 40 CFR 260.11(a); 260.22(d)(1)(i); 261.22(a)(1)&(2); 261.24(a); 261 Appendices II, III, and X; 264.190(a); 264.314(c); 265.190(a); 265.314(d); 268.7(a); 268.40(a); 268.41(a); 268 Appendices I & IX; 270.6(a); 270.19(c)(1)(iii)&(iv); 270.62(b)(2)(i)(C)&(D); and 270.66(c)(2)(i)&(ii) as amended August 31, 1993 (58 FR 46040) and September 19, 1994 (59 FR 47980).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 128 Summary

Rule Title:	Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Wastes from Wood Surface Protection
Checklist Title:	Wastes From the Use of Chlorophenolic Formulations in Wood Surface Protection
Reference:	59 FR 458-469
Promulgation Date:	January 4, 1994
Effective Date:	January 4, 1994
Cluster:	RCRA Cluster IV
Provision Type:	Non-HSWA
Linkage:	Revision Checklists 132, 139 and 180; Related to Revision Checklist 82 but not directly linked - see the summary
Optional:	No

Summary: Three categories of wastes (F032, F034 and F035) from wood preserving processes were listed as hazardous in 1990 (55 FR 50450; Revision Checklist 82). A final listing determination for wood surface protection wastes was deferred due to lack of data (53 FR 53282). This present rule announces that upon reviewing the public comments received on its proposal of April 27, 1993 (58 FR 25707), EPA has decided not to list wastes from the use of chlorophenolic formulations in wood surface protection processes. As a result of this determination, EPA is not mandating in this rule any specific operating or information collection requirements for owners/operators of wood surface protection plants. However, the Agency would very likely re-evaluate this decision not to list if use of chlorophenolic formulations resumes in the future. Although this final rule does not list as hazardous any wastes from wood surface protection processes, EPA believes that certain constituents contained in these wastes warrant inclusion in 40 CFR Part 261, Appendix VIII. Thus, the Agency is adding the following four chemicals to Part 261, Appendix VIII: the sodium and the potassium salts of pentachlorophenol and of tetrachlorophenol. This rule also finalizes the proposed amendment of SW-846 ("Test Methods for Evaluating Solid Waste, Physical/Chemical Methods") to include Method 4010 (Immunoassay Test for the Presence of Pentachlorophenol).

State Authorization: This rule is placed in RCRA Cluster IV and the changes addressed by it were made under non-HSWA authority. The State modification deadline is July 1, 1995 (or July 1, 1996 if a State statutory change is necessary). These changes do not go into effect until States become authorized for them because this rule was promulgated under pre-HSWA authorities. Only final authorization is available.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 128, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following new entry should be placed at Subsection I A (27) in the Model Revision Attorney General's Statement.

> (27) Listing of three chemicals from wood surface protection processes, 40 CFR 261 Appendix VIII, as amended January 4, 1994 [59 FR 458], Revision Checklist 128.

The following new entry should be placed at Subsection I CC in the Model Revision Attorney General's State

Revision Checklist 128 Summary (cont'd)

CC. State statutes and regulations incorporation by reference "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, the Third Edition (November 1986), as amended by Updates I, II and IIA, as indicated in Revision Checklist 128.

Federal Authority: RCRA §§2002(a), 3001(b), and 3001(e)(1); 40 CFR 260.11(a) as amended January 4, 1994 (59 FR 458).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 131 Summary

Rule Title:	Recordkeeping Instructions
Checklist Title:	Recordkeeping Instructions; Technical Amendment
Reference:	59 FR 13891-13893
Promulgation Date:	March 24, 1994
Effective Date:	March 24, 1994
Cluster:	RCRA Cluster IV
Provision Type:	Non-HSWA
Linkage:	None
Optional:	No

Summary: This rule amends the recordkeeping instructions in Appendix I of Part 264 and Appendix I of Part 265 so that unit of measurement codes and handling codes, used by hazardous waste treatment, storage and disposal facilities to maintain records on-site, match the codes used by these facilities on the Part A Permit Application Form. This technical amendment also adds handling codes for the proper recording of those processes relating to Boilers and Industrial Furnaces and Miscellaneous Units facilities. The Agency intends this amendment to encourage the consistent recordkeeping and reporting of information by hazardous waste treatment, storage and disposal facilities.

State Authorization: This rule is placed in RCRA Cluster IV; the changes addressed by it were promulgated under non-HSWA authority. Thus, this regulation is immediately applicable only in states that do not have final authorization for a base RCRA program. For states that are authorized for a base program, these changes do not go into effect until States become authorized for them. Only final authorization is available. The State modification deadline is July 1, 1995 (or July 1, 1996 if a State statutory change is necessary).

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 131, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection VII F in the Model Revision Attorney General's Statement.

> F. State statutes and regulations incorporate updates to the recordkeeping instructions so that the codes used by hazardous waste treatment, storage and disposal facilities to maintain records on-site match the codes used by these facilities on the Part A Permit Application Form as indicated on Revision Checklist 131. The new handling codes for Miscellaneous Units and Boilers and Industrial Furnaces, addressed by Checklist 131, are also incorporated into the statutes and regulations.
>
> Federal Authority: RCRA §§ 3004 and 3005; 40 CFR 264 Appendix I, 265 Appendix I as amended March 24, 1994 (59 FR 13891).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Revision Checklist 132 Summary

Rule Title:	Hazardous Waste Management System: Identification and Listing of Hazardous Wastes; Wastes from Wood Surface Protection; Correction
Checklist Title:	Wood Surface Protection; Correction
Reference:	59 FR 28484
Promulgation Date:	June 2, 1994
Effective Date:	June 2, 1994
Cluster:	RCRA Cluster IV
Provision Type:	Non-HSWA
Linkage:	Revision Checklists 128, 139 and 180
Optional:	No

Summary: This notice corrects inaccurate references to EPA Publication SW-846 in the final rule published January 4, 1994 (59 FR 458; Revision Checklist 128).

State Authorization: This rule is placed in RCRA Cluster IV. The State modification deadline is July 1, 1995 (or July 1, 1996 if a State statutory change is necessary). This rule was promulgated under non-HSWA authority and the changes do not go into effect until States become authorized for them. Only final authorization is available.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 132, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

AttorneyGeneral's Statement Entry: The entry at Subsection I CC in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> CC. State statutes and regulations incorporation by reference "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, the Third Edition (November 1986), as amended by Updates I, II and IIA, as indicated in Revision Checklists 128 and 132.
>
> Federal Authority: RCRA §§2002(a), 3001(b), and 3001(e)(1); 40 CFR 260.11(a) as amended January 4, 1994 (59 FR 458) and June 2, 1994 (59 FR 28484).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Revision Checklist 134 Summary

Rule Title:	Hazardous Waste Management System; Correction of Listing of P015--Beryllium Powder
Checklist Title:	Correction of Beryllium Powder (P015) Listing
Reference:	59 FR 31551-31552
Promulgation Date:	June 20, 1994
Effective Date:	June 20, 1994
Cluster:	RCRA Cluster IV
Provision Type:	Non-HSWA
Linkage:	None
Optional:	No

Summary: On April 22, 1988, EPA published a technical correction to the lists of hazardous wastes in 40 CFR 261.33(e) and (f) (Revision Checklist 46, 53 FR 13382). In that notice, the word "dust" was inadvertently omitted from the P015 listing for "beryllium dust" in the 261.33(e) list of hazardous wastes. In addition, the sole manufacturer of this commercial chemical product has since indicated that the term "beryllium dust" is not used by the industry to describe this commercial chemical product; the actual term used by the industry is "beryllium powder". This technical correction, thus, adds "powder" to the P015 hazardous waste listing for "beryllium" and makes conforming changes to the list of hazardous constituents in Part 261 Appendix VIII and to Table 2 in § 268.42(a). Conforming changes were also made to the CERCLA list of hazardous substances, although only the changes to the RCRA regulations are addressed by this checklist.

State Authorization: This rule is placed in RCRA Cluster IV. The State modification deadline is July 1, 1995 (or July 1, 1996 if a State statutory change is necessary). These changes do not go into effect until States become authorized for them because this rule was promulgated under pre-HSWA authorities. Only final authorization is available.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 134, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: Subsection I A(28) in the Model Revision Attorney General's Statement should be added to read as follows:

> (28) Listing of Beryllium (P015) is amended to read "Beryllium powder," 40 CFR 261.33 and Part 261 Appendix VIII, as amended June 20, 1994 [59 FR 31551], Revision Checklist 134.

The following new entry should be placed at Subsection XXI P in the Model Revision Attorney General's Statement.

Revision Checklist 134 Summary (cont'd)

P. State statutes and regulations include a revision to P015 listing in the land disposal restrictions technology-based treatment standards as indicated on Revision Checklist 134.

Federal Authority: RCRA §3004(d)-(k) and (m); 40 CFR 268.42(a)/Table 2, as amended June 20, 1994 (59 FR 31551).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 136 Summary

Rule Title:	Standards for the Management of Specific Hazardous Wastes; Amendment to Subpart C--Recyclable Materials Used in a Manner Constituting Disposal; Final Rule
Checklist Title:	Removal of the Conditional Exemption for Certain Slag Residues
Reference:	59 FR 43496-43500
Promulgation Date:	August 24, 1994
Effective Date:	February 24, 1995
Cluster:	RCRA Cluster V
Provision Type:	HSWA
Linkage:	Revision Checklists 167A-C
Optional:	No

Summary: This rule amends 266.20 so that certain uses of slag residues produced from the high temperature metal recovery (HTMR) treatment of electric arc furnace dust (K061), steel finishing pickle liquor (K062), and electroplating sludges (F006) are not exempt from RCRA Subtitle C regulations. Specifically, this rule prohibits anti-skid/deicing uses of HTMR slags derived from K061, K062, and F006 as waste-derived products placed on the land, unless there is compliance with all Subtitle C standards applicable to land disposal. Because the land disposal requirements cannot be realistically met by entities that would use the HTMR slag in this fashion, EPA is effectively prohibiting uses of HTMR slags as anti-skid/deicing materials. This rule also clarifies the definition of non-encapsulated uses of HTMR slags by specifying these uses to be the anti-skid/deicing uses.

This rule partially implements a settlement agreement that EPA entered into on August 13, 1993 with the Natural Resources Defense Council and the Hazardous Waste Treatment Council. This agreement addresses the challenge made by both Councils to EPA's August 13, 1991 (Revision Checklist 95; 56 FR 41164) decision not to apply the generic exclusion levels at which K061 slags are deemed nonhazardous to K061 slags used as waste-derived products that are applied to or placed on the land. (This decision was extended to K062 and F006 HTMR slags on August 18, 1992 (Revision Checklist 109; 57 FR 37194)). The generic exclusion levels established for some metals in the K061 HTMR slags are lower than the BDAT standards that apply to K061. Therefore, while the generic exclusion requires nonhazardous K061 slags meeting exclusion levels to be disposed of in a Subtitle D unit, K061 slags that may exhibit metal levels above the exclusion levels, but below BDAT, may be used as products in a manner constituting disposal in the exemption in 266.20(b). While this amendment effectively prohibits the anti-skid/deicing uses of K061; K062; and F006-derived HTMR slags as waste-derived products placed on the land, it does not prohibit other uses of these slags that meet 266.20(b) requirements and does not prevent the disposal of HTMR slags in Subtitle D units if the residues can meet the risk-based exclusion levels specified at 261.3(c)(2). EPA proposed a rule covering the major HTMR slag uses on December 29, 1994 (59 FR 67256). The proposal has not been finalized yet.

State Authorization: This rule is placed in RCRA Cluster V. The State modification deadline is July 1, 1996 (or July 1, 1997 if a State statutory change is necessary). EPA views this rule as a HSWA regulation, as it is viewed as part of the process establishing land disposal prohibitions and treatment standards for K061, K062, and F006 hazardous wastes. Therefore these requirements go into effect immediately. Both interim and final authorization are available, with interim authorization expiring on January 1, 2003.

Revision Checklist 136 Summary (cont'd)

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 136, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XV V in the Model Revision Attorney General's Statement.

> V. State statutes and regulations remove from the 266.20(b) exemption anti-skid/deicing uses of slags from high temperature metals recovery (HTMR) processing of hazardous wastes K061, K062, and F006 as indicated in Revision Checklist 136.
>
> Federal Authority: RCRA §3004; 40 CFR Parts 266.20(c) and 268.41(a) as amended August 24, 1994 (59 FR 43496).
>
> Citation of Laws and Regulations; Date of Adoption and Effective Date
>
> Remarks of the Attorney General

Revision Checklist 137 Summary

Rule Title:	Land Disposal Restrictions Phase II--Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes
Checklist Title:	Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes
Reference:	59 FR 47982-48109 and 60 FR 242-302
Promulgation Date:	September 19, 1994 and January 3, 1995
Effective Date:	December 19, 1994
Cluster:	RCRA Cluster V
Provision Type:	HSWA/Non-HSWA
Linkage:	Revision Checklists 13, 34, 39, 50, 63, 66, 83, 100, 102, 103, 106, 109, 116, 123, 124, 151, 157, and 167A-C
Optional:	Partially

Summary: The September 19, 1994 rule promulgates Land Disposal Restrictions treatment standards for the newly identified organic toxicity characteristic (TC) wastes, except for those managed in the following:

- Clean Water Act (CWA) systems,
- CWA equivalent systems, or
- Class I Safe Drinking Water Act (SDWA) injection wells.

The September 19, 1994 rule also promulgates treatment standards for newly listed coke by-product and chlorotoluene production wastes. EPA is also promulgating dilution prohibitions for high total organic content (TOC) ignitable and toxicity characteristic pesticides. These newly promulgated treatment standards and dilution prohibitions fulfill the requirements of a proposed consent decree between EPA and the Environmental Defense Fund and of a settlement agreement between EPA, the Hazardous Waste Treatment Council, and a number of environmental groups including the Natural Resources Defense Council.

The September 19, 1994 rule also makes modifications to the existing Land Disposal Restrictions program to simplify and provide consistency in these requirements. Specifically:

- A single set of requirements, referred to as the universal treatment standards (UTS), is established that applies to most hazardous wastes. These standards replace the myriad constituent concentration levels with a uniform set of constituent levels.

- The three separate tables containing treatment standards are consolidated into a single table (the "Treatment Standards for Hazardous Wastes" table in 268.40).

- The information required on notification forms is reduced.

- The regulations for the treatment of lab packs are simplified.

The preamble to the September 19, 1994 rule also provides a series of easy-to-read flowcharts and a simple guide to paperwork requirements in order to make the rule's requirements clearer and easier to understand and implement.

Revision Checklist 137 Summary (cont'd)

Finally, the September 19, 1994 rule modifies the hazardous waste recycling requirements at 261.2(e)(1)(iii) to remove the requirement that the process be a primary production process. As a result, secondary materials that are recycled back into the secondary production process from which they were generated are excluded from the definition of solid waste.

The January 3, 1995 rule makes amendments to the September 19, 1994 rule including revising and republishing the 268.40 table.

State Authorization: This checklist is placed in RCRA Cluster V. The State modification deadline is July 1, 1996 (or July 1, 1997 if a State statutory change is necessary). Except for the modifications to the definition of solid waste, this rule was promulgated relative to HSWA authorities. Normally, all of the HSWA requirements would go into effect immediately. However, currently many States are authorized for the land disposal restrictions, and the modifications made to simplify the treatment standards (i.e., the Universal Treatment Standards (UTS)) would result in the authority for these programs to return, in part, to EPA. Because the Agency believes that it was not Congress' intent that the responsibility for already-authorized HSWA programs be returned to EPA every time EPA promulgates modifications to HSWA program requirements, EPA has decided not to implement the UTS separately for those wastes for which the State has already received LDR authorization. Under this approach, those States authorized for some or all of the LDRs will continue to implement those portions of the program for which they are authorized, whether or not they have adopted the new standards. In EPA's view, the regulated industry will be subject to the State standards, regardless of whether they differ from the new UTS. States are strongly urged to implement the new UTS standards as quickly as possible, both for simplicity of implementation and national consistency. (See the December 19, 1994 memo from Mike Shapiro in Appendix N of the SAM.)

This approach relative to implementation of HSWA authority applies only to the UTS for wastes that are already restricted. The treatment standards for the newly listed wastes addressed by the September 19, 1994 rule go into effect immediately in all States and will be enforced by EPA. This also is the case for changes made relative to the notification forms and to the regulations for the treatment of lab packs. The attached memo from the Director of the Office of Solid Waste outlines the rationale for this approach. Both interim and final authorization are available for those HSWA provisions going into effect immediately. Interim authorization expires January 1, 2003.

The changes to 260.30, 260.31, 260.32, 260.33, and 261.2 are considered non-HSWA changes. The changes to 261.2(e)(1)(iii) and 260.30(b) are considered by EPA to narrow the scope of the Federal regulations and are therefore designated as optional on the checklist. The changes to 260.30, 260.31, 260.32 and 260.33 are included to be consistent with the changes in the closed-loop exclusion and the related 260.30(b) variance. As such these also have also been marked as optional. EPA will implement these non-HSWA requirements only in States that do not have interim or final authorization. In authorized States, the non-HSWA requirements will not be applicable until the States revise their programs to adopt equivalent requirements under State law.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 137, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entries: The following entry should be placed at Subsection II C in the Model Revision Attorney General's Statement.

C. [OPTIONAL: This is a reduced requirement.] State statutes and regulations allow secondary materials that are recycled back into the secondary production process from which they

were generated to be excluded from the definition of solid as per 261.2(e)(1)(iii) and indicated in Revision Checklist 137.

Federal Authority: RCRA §§3001 and 3004; 40CFR 260.30, 260.30(b), 260.31(a)&(b), 260.32, 260.33, 260.33(a)&(b), and 261.2(e)(1)(iii) as amended September 19, 1994 (59 FR 47982).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection XXI Q in the Model Revision Attorney General's Statemer

Q. State statutes and regulations contain treatment standards for certain newly identified organic toxicity wastes and for newly listed coke product and chlorotoluene production wastes as well as dilution prohibitions for high total organic content (TOC) ignitable and toxicity characteristic pesticides as indicated in Revision Checklist 137.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40CFR 264.1(g)(6), 265.1(c)(10), and 268 as amended September 19, 1994 (59 FR 47982) and January 3, 1995 (60 FR 242).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection XXI R in the Model Revision Attorney General's Statemer

R. State statutes and regulations contain modifications to the land disposal restrictions which simplify and provide consistency including the Universal Treatment Standards, treatment standards from three tables consolidated into one table, reduced information on notification forms, and simplified regulations for lab pack treatment as indicated in Revision Checklist 137.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40CFR 264.1(g)(6), 265.1(c)(10), and 268 as amended September 19, 1994 (59 FR 47982) and January 3, 1995 (60 FR 242).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection XXI S in the Model Attorney General's Statement.

S. State statutes and regulations require compliance with the requirements in 40 CFR 268 applicable to users of materials that are used in a manner constituting disposal, as indicated in Revision Checklist 137.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 266.23(a), as amended September 19, 1994 (59 FR 47982).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection XX H in the Model Attorney General's Statement.

H. State statutes and regulations exempt certain mercury recovery furnaces from the requirements of 40 CFR 266.102 through 266.111, as indicated in Revision Checklist 137.

Federal Authority: RCRA §§ 2002 and 3004; 40 CFR 266.100(c)(1); 266.100(c)(3); and 266\Appendix XIII as amended September 19, 1994 (59 FR 47982).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

RCRA REVISION CHECKLIST 138
(WITHDRAWN)

Organic Air Emission Standards for Tanks,
Surface Impoundments, and Containers
59 FR 62896-62953
December 6, 1994
(HSWA provisions)

Note: This checklist has been withdrawn. Its applicable provisions are included in Revision Checklist 154 which is a consolidation all of the rules associated with the organic air emission standards for tanks, surface impoundments, and container requirements (Subpart CC). This consolidated revision checklist is placed in RCRA Cluster VII.

Attached is a memorandum from Bruce Jordan, EPA Office of Air Quality Planning and Standards, that strongly encourages States to not adopt the December 6, 1994 rule, as well as its related amendments, until the final amendment to the Subpart CC rule is issued. This amendment was published in in the Federal Register on November 25, 1996 at 61 FR 59931. EPA encourages States to adopt Revision Checklist 154 which includes all of the following notices: 59 FR 62896, December 6, 1994; 60 FR 26828, May 19, 1995; 60 FR 56952, November 13, 1995; 61 FR 28508, June 5, 1996; 60 FR 50426, September 29, 1995; 61 FR 4903, February 9, 1996; and 61 FR 59931, November 25, 1996.

Revision Checklist 151 Summary

Rule Title:	Land Disposal Restrictions Phase III--Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners
Checklist Title:	Land Disposal Restrictions Phase III--Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners
Reference:	61 FR 15566-15660; 61 FR 15660-15668; 61 FR 19117; 61 FR 33680-33691; 61 FR 36419-36421; 61 FR 43924-43931; and 62 FR 7502-7600
Promulgation Date:	April 8, 1996 (61 FR 15566 and 61 FR 15660); April 30, 1996; June 28, 1996; July 10, 1996; August 26, 1996; and February 19, 1997
Effective Date:	April 8, 1996 for the April 8 and April 30 rules; June 28, 1996 for June 28 and July 10 rules; August 26, 1996 for the August 26, 1996 rule; and February 19, 1997 for the February 19, 1997 rule
Cluster:	RCRA Cluster VI
Provision Type:	HSWA
Linkage:	Revision Checklists 34, 39, 50, 66, 78, 83, 102, 109, 124, 137, 155, 157, 159, 160, 161, 162, 167A-C, 171 and 173
Optional:	No

Summary: There are seven rules associated with this Revision Checklist. The rule published on April 8, 1996 at 61 FR 15566-15660 was partially withdrawn and amended in the same Federal Register at 61 FR 15660-15668. The first April 8, 1996, rule (61 FR 15566) established treatment standards for hazardous wastes from the production of carbamate pesticides and from primary aluminum production under the Land Disposal Restrictions (LDR) program. In addition, this rule amended the treatment standards for hazardous wastes that exhibit the characteristic of reactivity and began the process of amending existing treatment standards for wastewaters which are hazardous because they display the characteristic of ignitability, corrosivity, reactivity or toxicity. Finally, EPA codified as a rule its existing enforcement policy that combustion of inorganic wastes is an impermissible form of treatment because hazardous constituents are being diluted rather than effectively treated.

Portions of the first April 8, 1996, rule published at 61 FR 15566, amended existing treatment standards for decharacterized wastewaters that are managed in surface impoundments regulated under the Clean Water Act (CWA) or in CWA-equivalent systems, and in Class I nonhazardous waste injection wells regulated under the Safe Drinking Water Act (SDWA). EPA promulgated these provisions to partially implement the holding and reasoning of the D.C. Circuit Court's opinion in CWM v. EPA, 976 F.2d 2 (D.C. Cir. 1992), cert. denied, 507 U.S. 1057 (1993). However, Congress passed the Land Disposal Flexibility Act of 1996 that put back in place the approach for centrally-managed, decharacterized wastewater which EPA adopted as part of the "Third Third" rule promulgated on June 1, 1990 (55 FR 22520). The purpose of the second April 8, 1996 rule (61 FR 15660) was to withdraw those portions

of the first April 8th rule which were inconsistent with the new law. This action put back into place, for certain wastewaters, the rules which existed prior to the LDR Phase III rule (i.e., only the characteristic property must be removed).

Three technical corrections were published on April 30, 1996 (61 FR 19117), June 28, 1996 (61 FR 33680-33691), and July 10, 1996 (61 FR 36419-36421). The sixth rule, published on August 26, 1996 (61 FR 43924-43931), was an emergency revision that addressed a serious analytic monitoring problem associated with the carbamate constituent treatment standards. The seventh rule, published on February 19, 1997 (62 FR 7502-7600), updated and corrected the 268.40 and 268.48 tables dealing with treatment standards, including the removal of treatment standards for the 25 waste codes whose listings were vacated by the November 1, 1996 D.C. Circuit Court of Appeals decision, Dithiocarbamate Task Force v. EPA, F.3d (D.C.Cir. 1996).

State Authorization: This rule is placed in RCRA Cluster VI. The State modification deadline is July 1, 1997 (or July 1, 1998 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 151, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XXI S in the Model Revision Attorney General's Statement.

> S. State statutes and regulations contain treatment standards for hazardous wastes from the production of carbamate pesticides and from primary aluminum production; contain the treatment standards for hazardous wastes that exhibit the characteristic of reactivity; and put back into place the LDR "Third Third" provisions for the treatment of certain wastewaters as indicated in Revision Checklist 151. These statutes and regulations also codify the Federal policy that combustion of inorganic waste is an impermissible form of treatment as also indicated in this checklist.
>
> Federal Authority: RCRA § 3004(d) through (k), 3004(m); Public Law 104-119, 100 Stat. 830, 40 CFR part 268 as amended April 8, 1996 (61 FR 15566 and 61 FR 15660); April 30, 1996 (61 FR 19117); June 28, 1996 (61 FR 33680); July 10, 1996 (61 FR 36419); August 26, 1996 (61 FR 43924), and February 19, 1997 (62 FR 7502).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption

Revision Checklist 151 Summary (cont'd)

Remarks of the Attorney General

Incorporation by Reference: Note that the CFR generally includes all rules published through July 1; however, the CFR revised as of July 1, 1996, includes the July 10, 1996 rule. Also, note that two rules were promulgated after July 10, 1996 (August 26, 1996 and the February 19, 1997 rules). States incorporating the 1996 CFR by reference should be aware of this and be sure to add the August 26, 1996 and February 19, 1997 rules to their incorporation by reference in order to completely adopt this revision checklist.

Revision Checklist 154 Summary

Rule Title:	Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
Checklist Title:	Consolidated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
Reference:	59 FR 62896-62953, 60 FR 26828-26829, 60 FR 50426-50430, 60 FR 56952-56954, 61 FR 4903-4916, 61 FR 28508-28511, and 61 FR 59932-59997
Promulgation Date:	December 6, 1994; May 19, 1995; September 29, 1995; November 13, 1995; February 9, 1996; June 5, 1996; and November 25, 1996
Effective Date:	December 6, 1996
Cluster:	RCRA Cluster VII
Provision Type:	HSWA
Linkage:	Revision Checklists 79, 87, 163 and 177
Optional:	No

Summary: These rules complete the second phase of EPA's regulatory development to implement the Congressional directive under RCRA §3004(n) to promulgate RCRA air standards that control organic emissions. The first phase (Revision Checklists 79 and 87) addressed controlling organic emissions vented from certain hazardous waste treatment processes (i.e., distillation, fractionation, thin-film evaporation, solvent extraction, steam stripping, and air stripping), as well as from leaks in certain ancillary equipment used for hazardous waste management processes.

On December 6, 1994, EPA promulgated air standards that will further reduce organic emissions from hazardous waste management activities. (These standards are known colloquially as the "subpart CC standards" due to their inclusion in subpart CC of Parts 264 and 265.) The December 6, 1994 rule contains air standards to reduce organic emissions from tanks, surface impoundments, containers and miscellaneous units managing particular types of hazardous waste. In addition, the December 6, 1994 final rule establishes a new EPA reference test method (Method 25E) to determine the organic vapor pressure of a waste. The December 6, 1994 rule added air emission control requirements for hazardous waste generators accumulating waste on-site in RCRA permit-exempt tanks and containers as per the requirements at 262.34. The initial effective date for the subpart CC standards was June 5, 1995.

On May 19, 1995, EPA published a notice of postponed effective date. The effective date of the December 6, 1994 final rule was postponed until December 6, 1995.

On September 29, 1995, EPA issued a stay subject to conditions for air standards applicable to TSDFs. The stay is applicable to tanks and containers used for the management of certain hazardous wastes generated by organic peroxide manufacturing processes. Certain organic peroxide

manufacturing wastes are inherently unstable and cannot safely be confined in closed units or systems. EPA believes that the administrative stay for this waste is needed, because the promulgated regulations could (in limited circumstances) make it more dangerous to manage the waste. Therefore, this stay is not optional.

On November 13, 1995, EPA further postponed the effective date of the subpart CC requirements. The effective date of December 6, 1995 was postponed until June 6, 1996.

On February 9, 1996, EPA published clarifying amendments in the regulatory text of the final standards, corrected typographical and grammatical errors, and clarified certain language in the preamble to the December 6, 1994 final rule.

The June 5, 1996, Federal Register article postponed the effective date of the December 6, 1994 final rule for a third time. The effective date was postponed until October 6, 1996.

On November 25, 1996, EPA amended and clarified the regulatory text of the final standards, clarified certain language in the preamble to the December 6, 1994 final rule, and in doing so provided additional options for compliance that give owners and operators increased flexibility in meeting the requirements of the rules while still providing sufficient controls to be protective of human health and the environment. In addition, the rule suspended the applicability and implementation of subpart CC of Parts 264 and 265 from October 6, 1996 to December 6, 1996.

On December 8, 1997, EPA published a final set of technical amendments to the rules. The preamble to those amendments also interprets certain provisions of the rule. These subpart CC rule technical amendments became effective as of December 8, 1997. The technical amendments are not incorporated into the attached checklist, but will be in a future checklist.

State Authorization: This rule is placed in RCRA Cluster VII based on the promulgation date of the most recent of the amendments, excluding the December 8, 1997 technical amendments. The State modification deadline is July 1, 1998 (or July 1, 1999, if a State statutory change is necessary). All changes go into effect in all states on December 6, 1996, because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 154, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional Office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XV (W) in the Model Revision Attorney General's Statement.

Revision Checklist 154 Summary (cont'd)

W. State statutes and regulations provide for organic air emission standards for tanks, surface impoundments and containers and provide that air emission control requirements be added to the permit terms and provisions specified for miscellaneous units as specified in Revision Checklist 154.

Federal Authority: RCRA § 3004(n); 40 CFR 60 Appendix A, 260, 261, 262, 264, 265, and 270 as amended December 6, 1994 (59 FR 62896); May 19, 1995 (60 FR 26828); September 29, 1995 (60 FR 50426); November 13, 1995 (60 FR 56952); February 9, 1996 (61 FR 4903); June 5, 1996 (61 FR 28508); and November 25, 1996 (61 FR 59932)

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference:

EPA strongly encourages States to adopt the Subpart CC requirements as reflected on this consolidated revision checklist. States incorporating the Federal regulations by reference should be aware that five of the seven rules for the Subpart CC standards were promulgated after June 30, 1995.

States choosing to incorporate the Federal regulations through June 30, 1995, should add the September 29, 1995 rule; the November 13, 1995 rule; the February 9, 1996 rule; the June 5, 1996 rule; and the November 25, 1996 rule to their incorporation by reference in order to completely adopt Revision Checklist 154.

If the State incorporates the Federal regulations through June 30, 1996, only the last of the rules for the Subpart CC standards (the November 25, 1996 final rule) need be added to the incorporation by reference in order to completely adopt Revision Checklist 154.

Note that the provisions at 265.1083(c)(4)(ii), which were added by the November 5, 1996 rule, reference §268.42(b) which is not delegable to States. Thus, a State should not replace the reference to EPA approval under §268.42(b) with its analogous State terms when adopting or incorporating by reference these provisions.

Revision Checklist 154 Summary (cont'd)

Revision Checklist 155 Summary

Rule Title:	Land Disposal Restrictions Phase III-- Emergency Extension of the K088 Capacity Variance
Checklist Title:	Land Disposal Restrictions Phase III-- Emergency Extension of the K088 Capacity Variance
Reference:	62 FR 1992-1997
Promulgation Date:	January 14, 1997
Effective Date:	January 8, 1997
Cluster:	RCRA Cluster VII
Provision Type:	HSWA
Linkage:	Revision Checklists 151, 160, and 173
Optional:	No

Summary: This rule extends for six (6) months the current national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088). Thus, K088 wastes do not have to be treated to meet LDR treatment standards until July 8, 1997, six months from the original effective date of January 8, 1997. There have been unanticipated performance problems with the treatment technology (the Reynold's process) which provides most of the available treatment capacity for these wastes. EPA has found that this primary treatment process, as it is presently performing and as it includes disposal in non-subtitle C units, is not satisfying the requirements of RCRA § 3004. The primary treatment process does not protect human health and the environment (RCRA § 3004(h)(2), and the remaining treatment capacity is far below that needed to accommodate the volume of K088 waste being generated. The length of the extension for the national capacity variance reflect's EPA's best current estimate of how long it will take to correct the current deficiencies in treatment performance.

State Authorization: This rule is placed in RCRA Cluster VII. The State modification deadline is July 1, 1998 (or July 1, 1999 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 155, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XXI (U) in the Model Revision Attorney General's Statement.

> U. State statutes and regulations provide a six (6) month extension of the current national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088) so that K088 wastes do not have to be treated to

Revision Checklist 155 Summary (cont'd)

meet LDR treatment standards until July 8, 1997, as indicated in Revision Checklist 155.

Federal Authority: RCRA §§ 3004(d) through (k), and 3004(m); 40 CFR 268.39(c) as amended January 14, 1997 (62 FR 1992).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance:

There is no special guidance for States that incorporate by reference with respect to this Revision Checklist.

Revision Checklist 157 Summary

Rule Title:	Land Disposal Restrictions -- Phase IV: Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions
Checklist Title:	Land Disposal Restrictions -- Phase IV
Reference:	62 FR 25998-26040
Promulgation Date:	May 12, 1997
Effective Date:	August 11, 1997 for all provisions, except §§148.18(b) and 268.30(b) which are effective May 12, 1999.
Cluster:	RCRA Cluster VII
Provision Type:	HSWA
Linkage:	Revision Checklists 34, 39, 50, 63, 66, 83, 100, 102, 103, 106, 109, 116, 123, 124, 137, 151
Optional:	No; however, certain provisions are optional

Summary: This rule finalizes treatment standards for hazardous waste generated from wood preserving operations and makes a uniform change to the standard for wastes from products of chlorinated aliphatics which carry the F024 waste code. It also 1) revises the land disposal restrictions to reduce paperwork, 2) finalizes the decision to employ polymerization as an alternative treatment method, 3) clarifies an exemption for de minimis amounts of characteristic wastewaters and 4) excludes processed circuit boards and scrap metal from RCRA regulation. This rule also discusses the Agency's decision not to ban certain wastes from biological treatment.

State Authorization: This rule is placed in RCRA Cluster VII. The State modification deadline is July 1, 1998 (or July 1, 1999 if a State statutory change is necessary). This rule contains HSWA provisions. These provisions take effect on this rule's effective date in authorized States with the exception of revisions that are considered optional. Optional changes only take effect when the State adopts and receives authorization for them. States may apply for interim or final authorization, however, interim authorizations will expire January 1, 2003. The State Revision application must include applicable regulations, an AG statement addendum, Revision Checklist 157, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Revision Checklist 157 Summary (cont'd)

Attorney General's Statement Entry: The following entries should be placed at Subsections XXI (V)-(Y) in the Model Revision Attorney General's Statement.

V. State statutes and regulations prohibit the land disposal of the wood preserving waste F032, F034 and F035 by August 11, 1997, and also prohibit any soil and debris and radioactive waste mixed with above chemicals from land disposal effective May 12, 1999. In between these effective dates, mixtures may only be land disposed if the facilities follow certain procedures included in State statutes and regulations as indicated in Revision Checklist 157. State statutes and regulations also include revisions to update the land disposal restrictions to better reflect the current program, as indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.4(a)(2)(iv), 268.7(c)(2), 268.9(a), 268.9(d)(1)(ii), 268.30(a)-(e), 268.32-36, 268.40/Table, 268.44(o), and Part 268 Appendices I-III, VI, VII, VIII and X as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

W. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions of record keeping and paperwork requirements indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.4(a)(4), 268.7(a)-(b)(6) and (c)(1) as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

X. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions introducing polymerization as an alternative treatment method as indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.42/Table 1 as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 157 Summary (cont'd)

Y. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions which indicate that the *de minimis* provision applies to minor losses of characteristic wastes as indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.1(e)(4) as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection I (KK) in the Model Revision Attorney General's Statement.

KK. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions of the exclusion of scrap metal and circuit boards from RCRA regulation as indicated in Checklist 157.

Federal Authority: RCRA §§3001; 40 CFR 261.1(c)(9)-(12), 261.2(c)/Table 1, 261.4(a)(13), 261.4(a)(14), and 261.6(a)(3)(ii) as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: The dates given at 268.30 are HSWA dates and should not be replaced with the State regulatory effective date.

Revision Checklist 157 Summary

Rule Title:	Land Disposal Restrictions -- Phase IV: Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions
Checklist Title:	Land Disposal Restrictions -- Phase IV
Reference:	62 FR 25998-26040
Promulgation Date:	May 12, 1997
Effective Date:	August 11, 1997 for all provisions, except §§148.18(b) and 268.30(b) which are effective May 12, 1999.
Cluster:	RCRA Cluster VII
Provision Type:	HSWA
Linkage:	Revision Checklists 34, 39, 50, 63, 66, 83, 100, 102, 103, 106, 109, 116, 123, 124, 137, 151
Optional:	No; however, certain provisions are optional

Summary: This rule finalizes treatment standards for hazardous waste generated from wood preserving operations and makes a uniform change to the standard for wastes from products of chlorinated aliphatics which carry the F024 waste code. It also 1) revises the land disposal restrictions to reduce paperwork, 2) finalizes the decision to employ polymerization as an alternative treatment method, 3) clarifies an exemption for de minimis amounts of characteristic wastewaters and 4) excludes processed circuit boards and scrap metal from RCRA regulation. This rule also discusses the Agency's decision not to ban certain wastes from biological treatment.

State Authorization: This rule is placed in RCRA Cluster VII. The State modification deadline is July 1, 1998 (or July 1, 1999 if a State statutory change is necessary). This rule contains HSWA provisions. These provisions take effect on this rule's effective date in authorized States with the exception of revisions that are considered optional. Optional changes only take effect when the State adopts and receives authorization for them. States may apply for interim or final authorization, however, interim authorizations will expire January 1, 2003. The State Revision application must include applicable regulations, an AG statement addendum, Revision Checklist 157, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Revision Checklist 157 Summary (cont'd)

Attorney General's Statement Entry: The following entries should be placed at Subsections XXI (V)-(Y) in the Model Revision Attorney General's Statement.

V. State statutes and regulations prohibit the land disposal of the wood preserving waste F032, F034 and F035 by August 11, 1997, and also prohibit any soil and debris and radioactive waste mixed with above chemicals from land disposal effective May 12, 1999. In between these effective dates, mixtures may only be land disposed if the facilities follow certain procedures included in State statutes and regulations as indicated in Revision Checklist 157. State statutes and regulations also include revisions to update the land disposal restrictions to better reflect the current program, as indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.4(a)(2)(iv), 268.7(c)(2), 268.9(a), 268.9(d)(1)(ii), 268.30(a)-(e), 268.32-36, 268.40/Table, 268.44(o), and Part 268 Appendices I-III, VI, VII, VIII and X as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

W. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions of record keeping and paperwork requirements indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.4(a)(4), 268.7(a)-(b)(6) and (c)(1) as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

X. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions introducing polymerization as an alternative treatment method as indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.42/Table 1 as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 157 Summary (cont'd)

Y. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions which indicate that the *de minimis* provision applies to minor losses of characteristic wastes as indicated in Revision Checklist 157.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.1(e)(4) as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection I (KK) in the Model Revision Attorney General's Statement.

KK. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions of the exclusion of scrap metal and circuit boards from RCRA regulation as indicated in Checklist 157.

Federal Authority: RCRA §§3001; 40 CFR 261.1(c)(9)-(12), 261.2(c)/Table 1, 261.4(a)(13), 261.4(a)(14), and 261.6(a)(3)(ii) as amended May 12, 1997 (62 FR 25998).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: The dates given at 268.30 are HSWA dates and should not be replaced with the State regulatory effective date.

Revision Checklist 159 Summary

Rule Title:	Hazardous Waste Management System; Carbamate Production, Identification and Listing of Hazardous Waste; Land Disposal Restrictions
Checklist Title:	Conformance With the Carbamate Vacatur
Reference:	62 FR 32974-32980
Promulgation Date:	June 17, 1997
Effective Date:	May 29, 1997
Cluster:	RCRA Cluster VII
Provision Type:	HSWA
Linkage:	Revision Checklist 140 and 151
Optional:	Yes

Summary: This rule amends regulations to conform with the Federal appeals court ruling in *Dithiocarbamate Task Force v. EPA* (98 F.3d 1394 (D.C. Cir. 1996)) that invalidated, in part, Agency regulations listing certain carbamate wastes as hazardous. These regulations also pertain to certain hazardous waste management of carbamate industry wastes under RCRA. The vacated hazardous waste listings and associated regulatory requirements are to be treated as if they were never in effect. States regulations, which may be more stringent or broader in scope than federal rules, are not necessarily affected by the court ruling and can list these wastes. Note that Revision Checklist 140, which addressed the carbamate testing, did not include the vacated wastes.

State Authorization: This rule is placed in RCRA Cluster VII. The rule is promulgated under HWSA authorities; thus, all changes go into effect immediately in States unauthorized for the HSWA base program. Because the standards in this checklist narrow and reduce regulatory requirements which preceded it, states are not required to adopt the changes addressed by this rule. States may, however, impose requirements that are broader in scope or more stringent than those imposed under Federal regulations. As such, the checklist developed for this rule has been designated optional. For states that choose to adopt the checklist, the State modification deadline is July 1, 1998 (or July 1, 1999 if a State statutory change is necessary). Both interim and final authorization are available. Interim authorization expires January 1, 2003. The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 159, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection I (MM) in the Model Revision Attorney General's Statement.

> MM. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions designed to conform with the Federal appeals court ruling (98 F.3d 1394 (D.C. Cir. 1996)) which invalidated, in part, certain EPA regulations listing certain carbamate wastes as hazardous as indicated in Revision Checklist 159.

Federal Authority: RCRA 3001 and 3004; 40 CFR 261.32, 261.33(f), 261 Appendix VII, 261 Appendix VIII as amended June 17, 1997 (62 FR 32974).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection XXI (Z) in the Model Revision Attorney General's Statement.

Z. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions designed to conform with the Federal appeals court ruling (98 F.3d 1394 (D.C. Cir. 1996)) which invalidated, in part, certain EPA regulations including the land disposal prohibitions and treatment standards for the vacated carbamate wastes as indicated in Revision Checklist 159.

Federal Authority: RCRA 3004(d)-(k) and (m); 40 CFR 268.39(a), 268.39(d), and 268.40 as amended June 17, 1997 (62 FR 32974).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance:

There is no special guidance for States that incorporate by reference with respect to this Revision Checklist.

Revision Checklist 160 Summary

Rule Title:	Land Disposal Restrictions Phase III -- Emergency Extension of the K088 National Capacity Variance
Checklist Title:	Land Disposal Restrictions Phase III -- Emergency Extension of the K088 National Capacity Variance, Amendment
Reference:	62 FR 37694-37699
Promulgation Date:	July 14, 1997
Effective Date:	July 7, 1997
Cluster:	RCRA Cluster VIII
Provision Type:	HSWA
Linkage:	Revision Checklists 151, 155 and 173
Optional:	No

Summary: This rule extends, for (3) months, the national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088). Thus, K088 wastes do not have to be treated to meet LDR treatment standards until October 8, 1997, three months from the treatment standard effective date of July 8, 1997, established by Revision Checklist 155. EPA is taking this action because it appears that sufficient treatment capacity exists. EPA is extending the national capacity variance in order to provide time for generators to make contractual and other logistical arrangements relating to utilization of the treatment capacity.

State Authorization: This rule is placed in RCRA Cluster VIII. The State modification deadline is July 1, 1999 (or July 1, 2000 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 160, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should replace the entry at Subsection XXI (U) in the Model Revision Attorney General's Statement.

> U. State statutes and regulations provide for an extension of the national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088) so that K088 wastes do not have to be treated to meet LDR treatment standards until October 8, 1997, as indicated in Revision Checklists 155 and 160.
>
> Federal Authority: RCRA §3004(d)-(k), and (m), 40 CFR 268.39(c) as amended January 14, 1997 (62 FR 1992) and July 14, 1997 (62 FR 37694).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Revision Checklist 160 Summary (cont'd)

Incorporation by Reference Guidance: None

Revision Checklist 161 Summary

Rule Title:	Second Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards for Listed Hazardous Wastes From Carbamate Production
Checklist Title:	Emergency Revision of the Carbamate Land Disposal Restrictions
Reference:	62 FR 45568-45573
Promulgation Date:	August 28, 1997
Effective Date:	August 21, 1997
Cluster:	RCRA Cluster VIII
Provision Type:	HSWA
Linkage:	Revision Checklists 151 and 171
Optional:	No

Summary: The emergency revision extends by one year the time that alternate carbamate treatment standards are in place. EPA is taking this action because analytical problems associated with the measurement of constituent levels in carbamate waste residues have not been resolved. This notice applies only to the carbamate wastes that remain listed as hazardous wastes. This is the second emergency rule related to the carbamate treatment standards. The first was promulgated on August 26, 1996 (61 FR 43924; Revision Checklist 151, Rule 151.5). That rule established temporary alternative treatment standards for carbamate wastes for a one-year period, because the Agency believed that one year was sufficient time for laboratory standards to be developed and for laboratories to take appropriate steps to conduct the necessary analysis for these wastes. This current rule further extends these alternate treatment standards, because not all of the laboratory standards have been developed. Additionally, there is confusion as to which analytical methods can be used to measure carbamate constituents.

State Authorization: This rule is placed in RCRA Cluster VIII. The State modification deadline is July 1, 1999 (or July 1, 2000 if a State statutory change is necessary). Because this rule was promulgated under HSWA authorities, these requirements go into effect in all States on the effective date of the rule. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, and Revision Checklist 161. Revisions to a State's program description and MOA are not needed.

Attorney General's Statement Entry: The following entry should be placed at Subsection XXI (AA) in the Model Revision Attorney General's Statement.

Revision Checklist 161 Summary *(cont'd)*

AA. State statutes and regulations provide an extension until August 26, 1998, the time that alternate carbamate treatment standards are in place as indicated in Revision Checklist 161.

Federal Authority: RCRA §3004(d)-(k) and (m); 40 CFR 268.40(g) and 268.48(a) as amended on August 28, 1997 (62 FR 45568).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance:

The dates in 268.40(g) and 268.48(a) should not be replaced with State effective dates.

Revision Checklist 162 Summary

Rule Title:	Clarification of Standards for Hazardous Waste Land Disposal Restriction Treatment Variances
Checklist Title:	Clarification of Standards for Hazardous Waste LDR Treatment Variances
Reference:	62 FR 64504-64509
Promulgation Date:	December 5, 1997
Effective Date:	December 5, 1997
Cluster:	RCRA Cluster VIII
Provision Type:	HSWA
Linkage:	Revision Checklists 34, 50, 66, 151, and 157
Optional:	Yes

Summary: This rule finalizes clarifying amendments to the rule authorizing treatment variances from the national LDR treatment standards, adopting EPA's interpretation that a treatment variance may be granted when treatment of any given waste to the level or by the method specified in the regulations is not appropriate, under either technical or environmental circumstances. EPA has also incorporated preamble language from the August 17, 1988 rule (53 FR 31200), requiring public participation for site-specific variances. Additionally, this rule withdraws the proposal to reissue the treatment variance granted to Citgo Petroleum under the clarified standard, and withdrawn the treatment variance for Citgo Petroleum.

State Authorization: 40 CFR 268.44 contains two types of variances. The provisions at 40 CFR 268.44(a)-(g) address general treatment standard variances. The authority for such variances is not delegable because these variances could result in nationally applicable standards for a new waste treatability group. The provisions at 40 CFR 268.44(h)-(m), on the other hand, address site-specific variances. In the HWIR-Media Proposal (61 FR 18780, 18828, April 29, 1996), EPA clarified that the authority to review and approve this second type of treatment variance can be delegated to States. The amendment to both types of treatment variances addressed by the December 5, 1997 rule are included in this checklist. States that have correctly adopted 40 CFR 268.44(a)-(g), leaving the authority for these variances with EPA, are encouraged to make the indicated amendments to these provisions so that the State's provisions are consistent with their Federal counterparts.

This rule is placed in RCRA Cluster VIII. All changes go into effect immediately because this rule was promulgated under HSWA authorities. Because the standards in this rule narrow and reduce regulatory requirements which preceded it, States are not required to adopt the changes addressed by this rule. As such, the checklist for this rule has been designated optional. For States that choose to adopt the checklist, the State modification deadline is July 1, 1999 (or July 1, 2000 if a State statutory change is necessary). Both interim and final authorization are available. Interim authorization expires January 1, 2003. The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 162, other associated

checklists and other application materials; i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XXI (BB) in the Model Revision Attorney General's Statement.

> BB. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions to the LDR treatment variances at 40 CFR 268.44, and specify that a variance may be granted when treatment to the level or by the method specified in the regulations either is not physically possible or is not appropriate under either technical or environmental circumstances as indicated in Revision Checklist 162.
>
> Federal Authority: RCRA 3004(m); 40 CFR 268.44(a), 268.44(h), and 268.44(m) as amended December 5, 1997 (62 FR 64504).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Incorporation by Reference Guidance: The term “Administrator” in 40 CFR 268.44(a) should not be substituted with an analogous state term because this provision is not delegable. “Administrator” at 40 CFR 268.44(h) should only be substituted if the State has or is seeking authorization for the site-specific variances at 40 CFR 268.44(h)-(m).

Revision Checklist 163 Summary

Rule Title:	Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
Checklist Title:	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment
Reference:	62 FR 64636-64671
Promulgation Date:	December 8, 1997
Effective Date:	December 8, 1997
Cluster:	RCRA Cluster VIII
Provision Type:	HSWA
Linkage:	Revision Checklists 154 and 177
Optional:	No

Summary: Under the RCRA authority, the EPA has promulgated standards (59 FR 62896, December 6, 1994; see Revision Checklist 154 for a complete history) to reduce organic air emissions from certain hazardous waste management activities to levels that are protective of human health and the environment. In response to public comments and inquiries since the publication of the final standards on December 6, 1994, EPA is making clarifying amendments to these subpart CC standards and providing clarification of certain preamble language that was contained in previous documents for this rulemaking.

State Authorization: This rule is placed in RCRA Cluster VIII. The State modification deadline is July 1, 1999 (or July 1, 2000 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 163, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The entry at Subsection XV (W) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> W. State statutes and regulations provide for organic air emission standards for tanks, surface impoundments and containers and provide that air emission control requirements be added to the permit terms and provisions specified for miscellaneous units as specified in Revision Checklists 154 and 163.

Revision Checklist 163 Summary (cont'd)

Federal Authority: RCRA § 3004(n); 40 CFR 60 Appendix A, 260, 261, 262, 264, 265, and 270 as amended December 6, 1994 (59 FR 62896); May 19, 1995 (60 FR 26828); September 29, 1995 (60 FR 50426); November 13, 1995 (60 FR 56952); February 9, 1996 (61 FR 4903); June 5, 1996 (61 FR 28508); November 25, 1996 (61 FR 59932); and December 8, 1997 (62 FR 64636)

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance:
There is no special guidance for States that incorporate by reference with respect to this checklist.

Revision Checklists 167 A-F Summary - Revised

Rule Title: Land Disposal Restrictions Phase IV – Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Metals and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils; and Exclusion of Recycled Wood Preserving Wastewaters

Checklist Title:

A. Land Disposal Restrictions Phase IV – Treatment Standards for Metal Wastes and Mineral Processing Wastes
B. Land Disposal Restrictions Phase IV – Hazardous Soils Treatment Standards and Exclusions
C. Land Disposal Restrictions Phase IV – Corrections
D. Mineral Processing Secondary Materials Exclusion
E. Bevill Exclusion Revisions and Clarification
F. Exclusion of Recycled Wood Preserving Wastewaters

Reference: 63 FR 28556-28753 and 63 FR 31266

Promulgation Date: May 26, 1998 and June 8, 1998

Effective Date: August 24, 1998 for May 26, 1998 rule, except for the following:

For definition of solid waste provisions at 261.2 and 261.4(a)(16)[1]: November 27, 1998 (non-HSWA).[2, 3]

For revision of the Bevill exclusion at 261.4(b): November 27, 1998 (non-HSWA).

For exclusion of recycled wood preserving wastewaters at 40 CFR 261.4(a)(9): May 26, 1998 (non-HSWA).

For prohibition on land disposal of wastes from elemental phosphorous processing and on mixed radioactive wastes at 40 CFR 268.34(b): May 26, 2000.

For land disposal restrictions treatment standards at 40 CFR 268.49 for soil contaminated with previously prohibited wastes: May 26, 1998 .

June 8, 1998 for June 8, 1998 correction.

Revision Checklist 167 A-F Summary (cont'd)

Cluster: RCRA Cluster VIII

Provision Type: HSWA/non-HSWA

Linkage:

CL 167 A:	Revision Checklists 78, 109, 116, 123, 124, 136, 137, 142A-E, 151, 155, 157, 159, 162, 170, 172, and 179.
CL 167 B:	Revision Checklists 78, 109, 116, 123, 124, 136, 137, 142A-E, 151, 155, 157, 159, 162, 179, 183, and 190.
CL 167 C:	Revision Checklists 78, 109, 116, 123, 124, 136, 137, 142A-E, 151, 155, 157, 159, 162, 179, and 183.
CL 167 D:	Revision Checklist 179
CL 167 E:	Revision Checklists 65, 71, 90, and 179.
CL 167 F:	Revision Checklists 82, 92, and 120

Optional: Checklists 167 B, 167 D and 167 F are optional; portions of Checklists 167 A and 167 E are optional.

Summary: This rule addresses four interrelated areas associated with the land disposal restrictions:

(1) This rule promulgates new land disposal restriction treatment standards for wastes identified as hazardous because they exhibit the toxicity characteristic for metals. The universal treatment standards for 12 metal constituents are also revised.

(2) This rule establishes a land disposal prohibition and treatment standards for a group of newly identified hazardous wastes/mineral processing wastes that exhibit a characteristic of hazardous waste. This group includes not only those mineral processing wastes exhibiting the toxicity characteristic but also mineral processing wastes exhibiting the characteristics of ignitability (D001), corrosivity (D002) or reactivity (D003).

(3) This rule includes alternative treatment standards for soil that contains a listed hazardous waste or which exhibits a characteristic of hazardous waste.

(4) Finally, this rule clarifies certain portions of the land disposal restrictions as well as corrects typographical errors.

This rule address three changes to the scope of the hazardous waste program by revising or clarifying which materials are considered solid waste and/or hazardous waste:

Revision Checklist 167 A-F Summary (cont'd)

(1) This rule defines the circumstances when secondary materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing are excluded from the definition of solid waste. Note, however, that the U.S. D.C. Circuit Court of Appeals vacated the portion of this rule that attempted to regulate as waste certain sludges and by-products exhibiting a characteristic of hazardous waste that are not listed in 40 CFR 261.31 or 261.32.

(2) This rule also addresses issues related to whether materials are within the scope of the Bevill exclusion and allows secondary materials from mineral processing to be co-processed with normal raw materials in beneficiation operations which generate Bevill exempt wastes, without changing the exempt status of the resulting Bevill wastes, provided certain requirements are met.
(3) This rule provides an exclusion from RCRA jurisdiction for certain wood preserving wastewaters and spent wood preserving solutions when recycled.

There are some changes described in the preamble to the May 26, 1998 final rule which were not addressed in the amendments portion of the rule. For instance, on page 63 FR 28600, Column 1 of the May 26, 1998 final rule (63 FR 28556; Revision Checklist 167), it is stated that EPA "is revoking five remanded waste listings (K064, K065, K066, K090 and K091) because there is a lack of information demonstrating threats to human health or the environment that would justify a listing at this time". However, the Agency did not amend 40 CFR 261.32 (listings of hazardous wastes from specific sources) to remove the remanded wastes. EPA intends to issue a technical correction in the future, that will include an amendment to remove K064, K065, K066, K090 and K091 from 40 CFR 261.32. Note that these five K wastes will still be regulated under RCRA Subtitle C if they exhibit a hazardous waste characteristic.

Another example is where EPA explained that the rule includes changes that clarify that a previously promulgated exclusion from hazardous waste regulation for recycled shredded circuit boards also applies to whole circuit boards under certain conditions. The language of the exclusion was not actually modified in the amendments portion of the rule.

Impact of Court Decisions: Two decisions by the D.C. Circuit Court of Appeals have impacted this rule:

(1) As mentioned in the first paragraph of this summary, an April 21, 2000, court decision vacated a portion of this rule addressed by Revision Checklist 167D (63 FR 28556; May 26, 1998). Prior to the May 26, 1998, final rule, all reclaimed spent materials and scrap metal were classified as solid waste while reclaimed sludges and by-products were only classified as solid waste if they had been specifically listed as hazardous waste by EPA. The May 26, 1998, final rule attempted to expand the definition of solid waste to include non-listed, characteristic sludges and by-products generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing unless the secondary materials are handled in accordance with the

requirements in 40 CFR 261.4(a)(16). However, in the April 21, 2000, opinion, the court held that EPA cannot extend its authority to regulate these materials as solid waste simply because they are not stored prior to reclamation in accordance with the provisions promulgated at 40 CFR 261.4(a)(16). As such, the court set aside the parenthetical "(except as provided under 40 CFR 261.4(a)(16))" - to the second sentence, through which EPA attempted to expand its regulation of mineral processing secondary materials. (Association of Battery Recyclers, Inc. v. EPA, 208 F.3d 1047 (D.C. Cir. 2000)). Based on the wording of 40 CFR 261.4(a)(16), listed sludges and by-products are never excluded from the definition of solid waste; therefore, as a result of the court decision, only reclaimed spent materials are covered by the conditional exclusion in that provision.

(2) On April 9, 1999, the U.S. Court of Appeals for the District of Columbia, in Great Lakes Chemical Corporation versus EPA (Docket No. 98-1312), granted the U.S. Government's motion for a voluntary vacatur of the organobromine production wastes K140 and U408, which were added to the listings of hazardous wastes at 40 CFR 268.40 and 268.48 by the May 4, 1998 rule (63 FR 24596) as amended June 29, 1998 (63 FR 35147).

State Authorization: EPA places this rule in RCRA Cluster VIII. Except for the modifications to the definition of solid waste, definition of hazardous waste, and exclusions relative to wood preserving and mineral processing secondary materials, this rule was promulgated under HSWA authorities. Normally, all of the HSWA requirements would go into effect immediately. However, the new Land Disposal Restrictions (LDR) treatment standards for mineral processing wastes will not apply unless the wastes are currently included in the authorized State's definition of solid waste. As per the December 19, 1994 memorandum, the revisions to the existing Universal Treatment Standards (UTS) numbers will not be implemented under HSWA authority separately for those States which have received LDR authorization for a particular waste. EPA views these changes from the existing limits to be neither more or less stringent since the technology basis of the standards has not changed. Accordingly, EPA will not implement the amendments to the UTS in those States with authorization for the treatment standards. The requirement to treat Underlying Hazardous Constituents, however, applies in all States except those authorized for Phase II. EPA will also not implement the treatment standards for soil contaminated with hazardous waste, and the associated site-specific risk based variance provision for contaminated soils, in States that are authorized for existing standards (i.e., authorized for Phase II) because the new standards are less stringent than the existing standards. Both interim and final authorization are available for the HSWA provisions. Only final authorization is available for the non-HSWA requirements. EPA will implement the non-HSWA requirements only in States that do not have interim or final authorization. In authorized States, the non-HSWA requirements will not be applicable until the States revise their programs to adopt equivalent requirements under State law. The State modification deadline is July 1, 1999 (or July 1, 2000 if a State statutory change is necessary). Interim authorization expires January 1, 2003.

The changes to 261.2(c)(3), 261.2(c)(4), 261.2(e)(1)(iii), 261.4(a)(9) and 261.4(a)(16), as well as the changes relative to soils contaminated with hazardous waste, are considered by EPA to be less

stringent than the existing Federal regulations and are designated as optional on the checklist (with the exception of the vacated change to 261.2(c)(3) which added the parenthetical to the second sentence). EPA strongly encourages the adoption of these provisions in order for there to be national consistency, properly conduct material recovery by the wood preserving industry, and encourage cleanups of contaminated sites based on remedies involving treatment of contaminated soils.

States that choose to ignore the April 21, 2000, court decision and include the second parenthetical in 261.2(c)(3), will have a broader in scope program because the effect is to include materials that are not considered solid waste by EPA. If a State has already adopted this language but does not wish to be broader in scope, the second parenthetical may be removed and the change addressed as a state-initiated change in the next authorization application package.

If a State chooses to follow the April 9, 1999 vacatur, it should remove the vacated wastes in the tables at 40 CFR 268.40 and 268.48. If the vacatur is not followed by a State, then the vacated wastes should remain as shown in the May 26, 1998 rule in tables 40 CFR 268.40 and 268.48. Note, in this latter case, that the State's regulations will be broader in scope to the extent that the wastes addressed by this listing are not hazardous under the hazardous waste characteristic criteria. The State's regulations will also be more stringent because certain requirements, regarding mixtures and when wastes are no longer hazardous are more stringent for listed hazardous wastes than for characteristic hazardous wastes.

To accommodate this rule's broad scope, EPA has broken it into a series of six checklists to allow States to choose those portions of the rule they want to adopt. This organization will also allow better tracking of those portions of the RCRA program for which States are authorized. The first three checklists deal with Land Disposal Restrictions Phase IV, with the first checklist (CL 167 A) addressing treatment standards for TC metal wastes and mineral processing wastes. This checklist is not optional and addresses only HSWA provisions. The second checklist (CL 167 B) addresses hazardous soil treatment standards and exclusions. It is optional and includes only HSWA provisions. The third checklist (CL 167 C) addresses corrections to the existing land disposal restrictions provision and also addresses only HSWA provisions. The fourth checklist (CL 167 D) addressing the exclusion of mineral processing secondary materials is both optional and addresses only non-HSWA provisions. The fifth checklist (167 E) deals with revisions and clarification to the Bevill Exclusion. The sixth and final checklist (CL 167 F) addresses the exclusion of recycled wood preserving wastewaters, is optional and addresses only non-HSWA provisions.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 167(A-F), other associated checklists, and other application materials (i.e., a program description and an MOA) as determined by the Regional office.

Revision Checklist 167 A-F Summary (cont'd)

Attorney General's Statement Entry: The following entries should be placed at Subsections I (OO) and (PP) in the Model Attorney General's Statement.

OO. [OPTIONAL: This is a reduced requirement.] State statutes and regulations provide for secondary materials from mineral processing to be co-processed with normal raw materials in beneficiation operations which generate Bevill exempt wastes, without changing the exempt status of the resulting Bevill waste, provided certain conditions are met as indicated in Revision Checklist 167 E.

Federal Authority: RCRA §3001; 40 CFR 261.4(b)(7) as amended May 26, 1998 (63 FR 28556).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

PP. State statutes and regulations contain clarifying amendments to requirements regarding exclusion of mixtures under 261.4(b)(7) involving Bevill waste, as indicated in Revision Checklist 167 E.

Federal Authority: RCRA §3001; 40 CFR 261.3(a)(2)(i)&(iii) as amended May 26, 1998 (63 FR 28556).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entries should be placed at Subsections II (D) & (E) in the Model Attorney General's Statement.

D. [OPTIONAL: This is a reduced requirement.] State statutes and regulations provide for a conditional exclusion from the definition of solid wastes for mineral processing spent materials as indicated in Revision Checklist 167 D.

Federal Authority: RCRA §3001; 40 CFR 261.2(c)(3), 261.2(c)(4) Table 1, 261.2(e)(1)(iii) and 261.4(a)(16) as amended May 26, 1998 (63 FR 28556).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 167 A-F Summary (cont'd)

E. [OPTIONAL: This is a reduced requirement.] State statutes and regulations provide for an exclusion from the definition of solid waste for certain materials generated and recycled by the wood preserving industry as indicated in Revision Checklist 167 F.

Federal Authority: RCRA §3001; 40 CFR 261.4(a)(9)(iii) as amended May 26, 1998 (63 FR 28556).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entries should be placed at Subsections XXI (DD)-(GG) in the Model Attorney General's Statement.

DD. State statutes and regulations include prohibitions and treatment standards for metal hazardous constituents in all hazardous wastes including the toxic characteristic wastes as indicated in Revision Checklist 167 A.

Federal Authority: RCRA §§3004(g)(4) and (m); 40 CFR 268.2(i), 268.3(d), 268.34, 268.40(e)&(h), 268.40 table, and 268.48 as amended May 26, 1998 (63 FR 28556).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

EE. State statutes and regulations include treatment standards for mineral processing wastes as indicated in Revision Checklist 167 A.

Federal Authority: RCRA §§3004(g)(4) and (m); 40 CFR 268.40 and 268.48 as amended May 26, 1998 (63 FR 28556).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

FF. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include treatment standards for contaminated soils as indicated in Revision Checklist 167 B.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.2(k), 268.7(a)(1)-(6), 268.7(b)(1)-(3), 268.7(b)(4) intro, 268.7(e), 268.44(h)(3)-(5), 268.49 as amended May 26, 1998 (63 FR 28556).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The following entry should be placed at Subsection XXI (GG) in the Model Attorney General's Statement.

GG. State statutes and regulations include corrections and clarifications to the land disposal restrictions as indicated in Revision Checklist 167 C.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.4(a)(2)(ii)&(iii), 268.7(a)(7), 268.7(b)(3)(ii)/Table, 268.7(b)(4)(iv)&(v), 268.7(b)(5)&(6), 268.40/Table, 268.40(e), 268.42(a), 268.45(a) intro, 268.45(d)(3)&(4), 268.48, 268 Appendices VII & VIII as amended May 26, 1998 (63 FR 28556) and June 8, 1998 (63 FR 31266).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance:

States choosing to follow the April 9, 1999 vacatur should exclude from their incorporation by reference the following entries:

1. the entries for K140 and U408 in the table at 40 CFR 268.40; and

2. the entry for 2,4,6-Tribromophenol in the table at 40 CFR 268.48(a).

States choosing not to follow the vacatur should not exclude the entries listed above. It should be noted that this makes the State more stringent and broader in scope as explained in the summary above. This should be noted in the Attorney General's Statement submitted with the authorization package containing this Revision Checklist.

State choosing to recognize the April 21, 2000, opinion of the D.C. Circuit Court of Appeals should exclude from their incorporation by reference the parenthetical to the second sentence in 40 CFR 261.2(c)(3). States choosing to include the parenthetical are broader in scope as explained in the

summary above. This should be noted in the Attorney General's Statement submitted with the authorization package containing this Revision Checklist.

At 261.4(a)(9)(iii)(E), States should replace the phrases "appropriate Regional Administrator or State Director" with the applicable State notification authority.

[1] Note there are typographical errors in 40 CFR 261.2 and 261.4(a)(16) provisions as amended by this rule. The provisions refer to 261.4(a)(15) rather than 261.4(a)(16) as they should. Revision Checklist 179 (64 FR 25408-25417; May 11, 1999) has redesignated 261.4(a)(16) as 261.4(a)(17).

[2] For the list of correct effective dates, see the memorandum entitled "Phase IV Land Disposal Restrictions Rule -- Clarification of Effective Dates", signed by Elizabeth Cotsworth, Acting Director, Office of Solid Waste, U.S. EPA, and dated October 19, 1998 (attached). On August 10, 1998, a final rule/correction of effective date and technical amendments was promulgated which affects CL 165 (rules promulgated May 4, 1998 and June 29, 1998) and CL 167 (rule promulgated May 26, 1998). The affected entries in CL 165 are the 268.40 and 268.48 tables. However, CL 167 includes the corrections to the affected tables in CL 165. Therefore, States should treat CL 167 as being later in time than the August 10, 1998 rule because the correct entries were included in the tables which were revised and reprinted entirely by the May 26, 1998 rule (CL 167). However, there is an error in the 268.40 Table as reprinted (rule promulgated May 26, 1998, 63 FR 28556, 28737) in which the CAS number for U408 listed as 111-79-6 should be 118-79-6. The August 10, 1998 rule affected the effective dates of CL 167. The correct effective dates for CL 167 are set forth in the memorandum cited at the beginning of this endnote.

[3] These provisions relating to the definition of solid waste apply only in unauthorized States.

Revision Checklist 170 Summary

Rule Title:	Hazardous Waste Recycling; Land Disposal Restrictions; Final Rule
Checklist Title:	Land Disposal Restrictions Phase IV -- Zinc Micronutrient Fertilizers, Administrative Stay
Reference:	63 FR 46332-46334
Promulgation Date:	August 31, 1998
Effective Date:	August 21, 1998
Cluster:	RCRA Cluster IX
Provision Type:	HSWA
Linkage:	Revision Checklists 167A and 179
Optional:	Yes

Summary: On May 26, 1998 (63 FR 28556), EPA published an amendment to the Land Disposal Restriction treatment standards for metal-bearing hazardous wastes which exhibit the characteristic of toxicity (developed as Revision Checklist 167, commonly referred to as the Phase IV rule). The Agency believes that the new, Phase IV treatment standards in that rule are not well suited for zinc micronutrient fertilizers and that the new standards could result in greater use of zinc fertilizers that contain relatively higher concentrations of hazardous constituents. EPA expects to develop a more consistent and comprehensive approach to regulating hazardous waste-derived fertilizers, and currently intends to leave this amendment, which places an administrative stay on the new treatment standards, in place until those new regulations are adopted. In the interim, the fertilizers affected by this amendment would remain subject to the previous treatment standards for toxic metals found at 40 CFR 268.41 in the July 1, 1990 edition of the CFR.

State Authorization: This rule is placed in RCRA Cluster IX. The State modification deadline is July 1, 2000 (or July 1, 2001 if a State statutory change is necessary). For States adopting this checklist, all changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 170, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XXI (II) in the Model Revision Attorney General's Statement.

> II. [OPTIONAL: This is a reduced requirement.] State statutes and regulations stay the May 26, 1998 Phase IV Land Disposal Restriction treatment standards for metal-bearing hazardous wastes which exhibit the characteristic of toxicity, until EPA develops more consistent and comprehensive regulations for hazardous waste-derived fertilizers. In the interim, affected fertilizers are subject

to the treatment standards that previously existed for toxic metals as specified on Revision Checklist 170.

Federal Authority: RCRA §§3001 and 3004(d), 40 CFR 268.40(i), as amended August 31, 1998 (63 FR 46332).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General.

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference with respect to this checklist.

Revision Checklist 171 Summary

Rule Title:	Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards for Listed Hazardous Wastes from Carbamate Production
Checklist Title:	Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards for Listed Hazardous Wastes from Carbamate Production
Reference:	63 FR 47410-47418
Promulgation Date:	September 4, 1998
Effective Dates:	August 26, 1998 for the rule
Compliance Dates:	Treatment standards for the wastes specified in 40 CFR 261.33 as P185, P191, P192, P197, U364, U394, and U395; August 26, 1998. The existing alternative standards of 40 CFR 268.40(g) continue to apply until March 4, 1999 . The numerical standards specified in 40 CFR 268.40 for the wastes specified in 261.33 as K156-K159, and K161, and in 261.33 as P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364, U367, U372, U373, U387, U389, U394-U395, U404, and U409-U411 and the numerical standards associated with the waste constituents in 268.48; March 4, 1999.
Cluster:	RCRA Cluster IX
Provision Type:	HSWA
Linkage:	Revision Checklists 151, 161, and 179
Optional:	No

Summary: This rule revises the waste treatment standards applicable to 40 waste constituents associated with the production of carbamate wastes. First, the rule establishes revised treatment standards for seven specific carbamate waste constituents (A2213; bendiocarb phenol; diethylene glycol, dicarbamate; dimetilan; formparanate; isolan; and tirpate) for which there are no available analytical reference standards. The revised treatment standards for the seven hazardous waste constituents are effective immediately; they extend indefinitely the temporary alternative treatment standards previously in effect, which expired on August 26, 1998. This rule also deletes the treatment standard for one additional constituent (o-phenylenediamine) for which available analytical methods do not achieve reliable measurements.

Secondly, this rule deletes the eight affected carbamate waste constituents listed above as underlying hazardous constituents.

Revision Checklist 171 Summary (cont'd)

Thirdly, the rule extends for an additional six months (until March 4, 1999), the temporary alternative treatment standards for 32 carbamate waste constituents that expired on August 26, 1998.

State Authorization: This rule is placed in RCRA Cluster IX. The State modification deadline is July 1, 2000 (or July 1, 2001 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 171, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XXI (JJ) in the Model Revision Attorney General's Statement.

> JJ. State statutes and regulations provide revised treatment standards for seven carbamate wastes and extend indefinitely the temporary treatment standards; remove the treatment standard for one carbamate waste; delete certain carbamate wastes as underlying hazardous constituents; and extend for six months the temporary alternative treatment standards for the other 32 carbamate wastes as indicated in Revision Checklist171.
>
> Federal Authority: RCRA § 3004(d)-(k) and (m); 40 CFR 268.40(g) & (i), 268.40/Table, and 268.48(a)/Table as amended September 4, 1998 (63 FR 47410).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Incorporation by Reference Guidance:

The dates in 268.40(g) and 268.40(i) should not be replaced with State effective dates.

Revision Checklist 172 Summary

Rule Title:	Characteristic Slags Generated From Thermal Recovery of Lead by Secondary Lead Smelters; Land Disposal Restrictions; Final Rule; Extension of Compliance Date
Checklist Title:	Land Disposal Restrictions Phase IV -- Extension of Compliance Date for Characteristic Slags
Reference:	63 FR 48124-48127
Promulgation Date:	September 9, 1998
Effective Dates:	August 28, 1998
Cluster:	RCRA Cluster IX
Provision Type:	HSWA
Linkage:	Revision Checklist 167A
Optional:	Yes

Summary: This rule extends the compliance date until November 26, 1998 for a limited portion of the Phase IV Final Rule (63 FR 28556). The Phase IV Final Rule amended the Land Disposal Restriction treatment standards for metal-bearing hazardous wastes exhibiting the toxicity characteristic. This action extends the date for treatment standards only for secondary lead slags exhibiting the toxicity characteristic for one or more metals that are generated from thermal recovery of lead-bearing wastes (principally batteries). This action is being taken because of potential short term logistical difficulties that may result in a temporary shortage of available treatment capacity for these particular wastes. In the interim, the affected wastes are still subject to the treatment standards for TC metals set forth in the Third Third Final Rule (55 FR 22520).

State Authorization: This rule is placed in RCRA Cluster IX. The State modification deadline is July 1, 2000 (or July 1, 2001 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 172, other associated checklists and other application materials, i.e. a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The following entry should be placed at Subsection XXI (KK) in the Model Revision Attorney General's Statement.

> KK. State statutes and regulations provide for an extension of the compliance date until November 26, 1998, for treatment standards for secondary lead slags that exhibit the toxicity characteristic for metals as indicated in Revision Checklist172.
>
> Federal Authority: RCRA § 3004(d)-(k) & (m); 40 CFR 268.34(b) as amended September 9, 1998 (63 FR 48124).

Revision Checklist 172 Summary (cont'd)

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance:

The date in 268.34(b) should not be replaced with a State effective date.

Revision Checklist 173 Summary

Rule Title:	Land Disposal Restrictions: Treatment Standards for Spent Potliners from Primary Aluminum Reduction (K088); Final Rule
Checklist Title:	Land Disposal Restrictions – Treatment Standards for Spent Potliners from Primary Aluminum Reduction (K088); Final Rule
Reference:	63 FR 51254-51267.
Promulgation Date:	September 24, 1998
Effective Date:	September 21, 1998
Cluster:	RCRA Cluster IX
Provision Type:	HSWA
Linkage:	Revision Checklists 151, 155, 160, and 179
Optional:	No

Summary: EPA is announcing interim replacement standards for spent potliners from primary aluminum reduction (EPA hazardous waste K088) under its Land Disposal Restrictions program. Spent potliners will now be prohibited from land disposal unless the wastes have been treated in compliance with the numerical standards contained within this rule. The newly promulgated treatment standards will be in place until EPA has fully reviewed all information on all treatment processes which may serve as a basis for a more permanent revised standard. In addition, EPA has extended the K088 national capacity variance until September 21, 1998.

State Authorization: EPA places this rule in RCRA Cluster IX. All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 173, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The entry at Subsection XXI (U) should be replaced with the following entry:

U. State statutes and regulations provide for an extension of the national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088) so that K088 wastes do not have to be treated to meet LDR treatment standards until September 21, 1988, as indicated in Revision Checklists 155, 160, and 173.

Federal Authority: RCRA §3004(d)-(k), and (m), 40 CFR 268.39(c) as amended January 14, 1997 (62 FR 1992), July 14, 1997 (62 FR 37694), and September 24, 1998 (63 FR 51254).

Revision Checklist 173 Summary (cont'd)

The following entry should be placed at Subsection XXI (LL) in the Model Attorney General's Statement.

LL. State statutes and regulations provide for interim replacement standards for spent potliners from primary aluminum reduction (EPA hazardous waste K088) as indicated in Revision Checklist 173.

Federal Authority: RCRA §3004(d)-(k), and (m); 40 CFR 268.40, as amended September 24, 1998 (63 FR 51254).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance:

The date in 40 CFR 268.39(c) should not be replaced with a State effective date.

Revision Checklist 177 Summary

Rule Title:	Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
Checklist Title:	Organic Air Emission Standards: Clarification and Technical Amendments
Reference:	64 FR 3382
Promulgation Date:	January 21, 1999
Effective Date:	January 21, 1999
Cluster:	RCRA Cluster IX
Provision Type:	HSWA
Linkage:	Revision Checklists 154 and 163
Optional:	No

Summary: Previously, the EPA set standards to reduce organic air emissions from certain hazardous waste management activities to levels that are protective of human health and the environment (59 FR 62896, December 6, 1994; see Revision Checklist 154 for a complete history). The standards were amended by the December 8, 1997 rule (62 FR 64636-64671, Revision Checklist 163), in response to public comments and inquiries. Today's amendments clarify certain regulatory text and reinstate certain regulatory provisions that were previously contained in the rules and later inadvertently removed.

State Authorization: This rule is placed in RCRA Cluster IX. The State modification deadline is July 1, 2000 (or July 1, 2001 if a State statutory change is necessary). All changes go into effect immediately because this rule was promulgated under HSWA authorities. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable regulations, AG statement addendum, Revision Checklist 177, other associated checklists and other application materials, i.e., a program description and an MOA, as determined by the Regional office.

Attorney General's Statement Entry: The entry at Subsection XV (W) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> W. State statutes and regulations provide for organic air emission standards for tanks, surface impoundments and containers and provide that air emission control requirements be added to the permit terms and provisions specified for miscellaneous units as specified in Revision Checklists 154, 163 and 177.

Federal Authority: RCRA § 3004(n); 40 CFR 60 Appendix A, 260, 261, 262, 264, 265, and 270 as amended December 6, 1994 (59 FR 62896); May 19, 1995 (60 FR

26828); September 29, 1995 (60 FR 50426); November 13, 1995 (60 FR 56952); February 9, 1996 (61 FR 4903); June 5, 1996 (61 FR 28508); November 25, 1996 (61 FR 59932); December 8, 1997 (62 FR 64636); and January 21, 1999 (64 FR 3382).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference with respect to this checklist.

Revision Checklist 179 Summary - Revised

Rule Title:	Land Disposal Restrictions -- Phase IV: Treatment Standards for Wood Preserving Wastes, Treatment Standards for Metal Wastes, Zinc Micronutrient Fertilizers, Carbamate Treatment Standards, and K088 Treatment Standards; Final Rule
Checklist Title:	Land Disposal Restrictions Phase IV -- Technical Corrections and Clarifications to Treatment Standards
Reference:	64 FR 25408-25417
Promulgation Date:	May 11, 1999
Effective Date:	May 11, 1999
Cluster:	RCRA Cluster IX
Provision Type:	HSWA/non-HSWA
Linkage:	Revision Checklists 157, 167A-E, 170, 171, and 173
Optional:	No

Summary: This rule clarifies and/or makes technical corrections to the following five final rules published by EPA:

(1) May 12, 1997, regulations promulgating Land Disposal Restrictions (LDR) treatment standards for wood preserving wastes, as well as reducing the paperwork burden for complying with LDRs (Revision Checklist 157);

(2) May 26, 1998, regulations promulgating LDR treatment standards for metal-bearing wastes, as well as amending the LDR treatment standards for soil contaminated with hazardous waste, and amending the definition of which secondary materials from mineral processing are considered to be wastes subject to the LDRs (Revision Checklist 167A-E);

(3) August 31, 1998, an administrative stay of the metal-bearing waste treatment standards as they apply to zinc micronutrient fertilizers (Revision Checklist 170);

(4) September 4, 1998, an emergency revision of the LDR treatment standards for hazardous wastes from the production of carbamate wastes (Revision Checklist 171); and,

(5) September 24, 1998, revised treatment standards for spent aluminum potliners from primary aluminum production (Revision Checklist 173).

State Authorization: This rule is placed in RCRA Cluster IX. The State modification deadline is July 1, 2000 (or July 1, 2001 if a State statutory change is necessary).

The revisions to 262.34(d)(4), 268.2(h), 268.2(k), 268.7(a)(4)/Table, 268.7(b)(3)(ii)/Table, 268.7(b)(4)(iv), 268.9(d)(2) intro, 268.9(d)(2)(i), 268.40(i), 268.40(j), 268.40/Table, 268.48(a)/Table, 268.49(c)(3) intro, 268.49(c)(3)(A)&(B) are made pursuant to HSWA. These regulations go into effect on the Federal effective date in all States. The revisions to 261.2(c)(3), 261.2(c)(4)/Table, 261.2(e)(1)(iii), first paragraph 261.4(a)(16), 261.4(a)(17)intro & (v), and 261.4(b)(7)(iii)&(iii)(A) are made related to non-HSWA authority. EPA will implement these requirements only in States that do not have interim or final authorization. In authorized States, the non-

Revision Checklist 179 Summary (cont'd)

HSWA requirements will not be applicable until the States revise their programs to adopt equivalent requirements under State law, unless the wastes are designated as hazardous due to the Toxicity Characteristic, which was promulgated relative to HSWA. In this latter case, the requirements relative to such wastes would become effective in all States on the rule's effective date. Both interim and final authorization are available for the HSWA provisions. Interim authorization expires January 1, 2003. Only final authorization is available for the non-HSWA provisions.

Note that the provisions at 261.2 and 261.4(a) that are amended by this checklist were previously amended by Revision Checklist 167 D (May 26, 1998; 63 FR 28556). An April 21, 2000, court decision set aside the parenthetical "(except as provided under 40 CFR 261.4(a)(16))" - to the second sentence, through which EPA attempted to expand its regulation of mineral processing secondary materials. (Association of Battery Recyclers, Inc. v. EPA, 208 F.3d 1047 (D.C. Cir. 2000)). As such, Revision Checklist 167 D and this checklist have been revised to reflect the court decision by only referring to the parenthetical added to the first sentence. States that have elected to ignore the April 21, 2000, court decision and include the second parenthetical in 261.2(c)(3), will have a broader in scope program because the effect is to include materials that are not considered solid waste by EPA.

The State Revision Application must include applicable statutes and regulations, Revision Checklist 179, and other application materials, i.e. a supplemental AG statement, a program description, and/or an MOA, as determined by the Regional office. Note that under 271.21(b), the Regional office is allowed flexibility to determine what specific documents must be included in an application. Also, under 40 CFR 271.21(d), the Regional office may require the submission of any additional application materials it deems necessary.

Attorney General's Statement Entries: The entry at Subsection I (OO) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> OO. [OPTIONAL: This is a reduced requirement.] State statutes and regulations provide for secondary materials from mineral processing to be co-processed with normal raw materials in beneficiation operations which generate Bevill exempt wastes, without changing the exempt status of the resulting Bevill waste, provided certain conditions are met as indicated in Revision Checklists 167 E and 179.
>
> Federal Authority: RCRA §3001; 40 CFR 261.4(b)(7) as amended May 26, 1998 (63 FR 28556) and May 11, 1999 (64 FR 25408).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

The entry at Subsection II (D) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

Revision Checklist 179 Summary (cont'd)

D. [OPTIONAL: This is a reduced requirement.] State statutes and regulations provide for a conditional exclusion from the definition of solid wastes for mineral processing spent materials as indicated in Revision Checklists 167 D and 179.

Federal Authority: RCRA §3001; 40 CFR 261.2(c)(3), 261.2(c)(4) Table 1, 261.2(e)(1)(iii) and 261.4(a)(16) as amended May 26, 1998 (63 FR 28556) and May 11, 1999 (64 FR 25408).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The entry at Subsection XXI (DD) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

DD. State statutes and regulations include prohibitions and treatment standards for metal constituents in all hazardous wastes including the toxic characteristic wastes as indicated in Revision Checklists 167 A and 179.

Federal Authority: RCRA §§3004(g)(4) and (m); 40 CFR 268.2(i), 268.3(d), 268.34, 268.40(e)&(h), 268.40 table, and 268.48 as amended May 26, 1998 (63 FR 28556) and May 11, 1999 (64 FR 25408).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The entry at Subsection XXI (FF) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

FF. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include treatment standards for contaminated soils as indicated in Revision Checklists 167 B and 179.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 262.34(d)(4), 268.2(h), 268.2(k), 268.7(a)(1)-(6), 268.7(b)(1)-(3), 268.7(b)(4) intro & (b)(iv), 268.9(d)(2) intro, 268.9(d)(2)(i), 268.7(e), 268.44(h)(3)-(5), 268.49 as amended May 26, 1998 (63 FR 28556) and May 11, 1999 (64 FR 25408).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 179 Summary (cont'd)

The entry at Subsection XXI (GG) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> GG. State statutes and regulations include corrections and clarifications to the land disposal restrictions as indicated in Revision Checklists 167 C and 179.
>
> Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.4(a)(2)(ii)&(iii), 268.7(a)(7), 268.7(b)(3)(ii)/Table, 268.7(b)(4)(iv)&(v), 268.7(b)(5)&(6), 268.40/Table, 268.40(e), 268.42(a), 268.45(a) intro, 268.45(d)(3)&(4), 268.48, 268 Appendices VII & VIII as amended May 26, 1998 (63 FR 28556), June 8, 1998 (63 FR 31266) and May 11, 1999 (64 FR 25408).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

The entry at Subsection XXI (II) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> II. [OPTIONAL: This is a reduced requirement.] State statutes and regulations stay the May 26, 1998 Phase IV Land Disposal Restriction treatment standards for metal-bearing hazardous wastes which exhibit the characteristic of toxicity, until EPA develops more consistent and comprehensive regulations for hazardous waste-derived fertilizers. In the interim, affected fertilizers are subject to the treatment standards that previously existed for toxic metals as specified on Revision Checklists 170 and 179.
>
> Federal Authority: RCRA §§3001 and 3004(d), 40 CFR 268.40(i), as amended August 31, 1998 (63 FR 46332) and May 11, 1999 (64 FR 25408).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

The entry at Subsection XXI (JJ) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> JJ. State statutes and regulations provide revised treatment standards for seven carbamate wastes and extend indefinitely the temporary treatment standards; remove the treatment standard for one carbamate waste; delete certain carbamate wastes as underlying hazardous constituents; and extend for six months the temporary alternative treatment standards for the other 32 carbamate wastes as indicated in Revision Checklists 171 and 179.

Revision Checklist 179 Summary (cont'd)

Federal Authority: RCRA § 3004(d)-(k) and (m); 40 CFR 268.40(g)-(j), 268.40/Table, and 268.48(a)/Table as amended September 4, 1998 (63 FR 47410) and May 11, 1999 (64 FR 25408).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

The entry at Subsection XXI (LL) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

LL. State statutes and regulations provide for interim replacement standards for spent potliners from primary aluminum reduction (EPA hazardous waste K088) as indicated in Revision Checklists 173 and 179.

Federal Authority: RCRA §3004(d)-(k), and (m); 40 CFR 268.40, as amended September 24, 1998 (63 FR 51254) and May 11, 1999 (64 FR 25408).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: As explained in the state authorization section of this summary and in the summary for Revision Checklists 167 A-E, States choosing to include the parenthetical to the second sentence as introduced by Revision Checklist 167D are broader in scope; this should be noted in the Attorney General's Statement submitted with the authorization package containing this Revision Checklist. States electing not to be broader in scope should recognize the April 21, 2000, opinion of the D.C. Circuit Court of Appeals by excluding from their incorporation by reference the parenthetical to the second sentence in 40 CFR 261.2(c)(3).

Revision Checklist 183 Summary

Rule Title:	Land Disposal Restrictions Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters
Checklist Title:	Land Disposal Restrictions Phase IV -- Technical Corrections
Reference:	64 FR 56469-56472
Promulgation Date:	October 20, 1999
Effective Date:	October 20, 1999
Cluster:	RCRA Cluster X
Provision Type:	HSWA/Non-HSWA
Linkage:	157, 167 B, 167 C, 171, 173, 179
Optional:	No; however, some provisions are optional

Summary: This rule corrects two minor typographical errors and one omission in the May 11, 1999 technical amendment (Revision Checklist 179; 64 FR 25408) to the Phase IV Land Disposal Restrictions (LDR). This rule also corrects three errors in the May 26, 1998 LDR Phase IV final rule (Revision Checklist 167; 63 FR 28556).

State Authorization: This rule is placed in RCRA Cluster X. The State modification deadline is July 1, 2001 (or July 1, 2002 if a State statutory change is necessary).

The revisions to 262.34(a)(4), 268.7(a)(3)(iii), 268.40(j), 268.40 Table, 268.49(c)(1)(A) and 268.49(c)(1)(B) are promulgated pursuant to HSWA authorities. There are HSWA revisions that are considered more stringent than the existing Federal regulations as well as HSWA revisions that are considered less stringent than the existing Federal regulations. An authorized State is required to adopt Federal regulations that are more stringent than the authorized State regulations. These required HSWA revisions take effect in an authorized State on the Federal effective date. A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. The revisions to 261.32 are promulgated pursuant to non-HSWA authorities. The non-HSWA changes do not go into effect in an authorized State until the State adopts and receives authorization for the revisions. Both interim and final authorization are available for the HSWA provisions. Interim authorization expires January 1, 2003. Only final authorization is available for the non-HSWA provisions.

The State Revision Application must include applicable statutes and regulations, Revision Checklist 183, and other application materials, i.e. a supplemental AG statement, a program description, and/or an MOA, as determined by the Regional office. Note that under 271.21(b), the Regional office is allowed flexibility to determine what specific documents must be included in an application. Also, under

Revision Checklist 183 Summary (cont'd)

271.21(d), the Regional office may require the submission of any additional application materials it deems necessary.

Attorney General's Statement Entry: The following entry should be placed at Subsection I (A)(32) in the Model Revision Attorney General's Statement.

(32) [OPTIONAL: This is a reduced requirement.] Removal of five vacated K-code wastes (K064, K065, K066, K090, and K091) from table at 40 CFR 261.32, as amended October 20, 1999 [64 FR 56469], Revision Checklist 183.

The entries at Subsection XXI (W), (FF), (JJ), and (LL) in the Model Revision Attorney General's Statement should be replaced with the following revised entries.

W. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions of record keeping and paperwork requirements indicated in Revision Checklists 157, 167 C, 179, and 183.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 262.34(a)(4), 262.34(d)(4), 268.4(a)(4), 268.7(a)-(b)(6), 268.7(c)(1), 268.9(d)(2) intro, and 268.9(d)(2)(i) as amended May 12, 1997 (62 FR 25998), May 26, 1998 (63 FR 28556), May 11, 1999 (64 FR 25408), and October 20, 1999 (64 FR 56469).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

FF. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include treatment standards for contaminated soils as indicated in Revision Checklists 167 B, 179, and 183.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.2(k), 268.7(a)(1)-(6), 268.7(b)(1)-(3), 268.7(b)(4) intro, 268.7(b)(4)(iv), 268.7(e), 268.44(h)(3)-(5), and 268.49 as amended May 26, 1998 (63 FR 28556), May 11, 1999 (64 FR 25408), and October 20, 1999 (64 FR 56469).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Revision Checklist 183 Summary (cont'd)

JJ. State statutes and regulations provide revised treatment standards for seven carbamate wastes and extend indefinitely the temporary treatment standards; remove the treatment standard for one carbamate waste; delete certain carbamate wastes as underlying hazardous constituents; and extend for six months the temporary alternative treatment standards for the other 32 carbamate wastes as indicated in Revision Checklists 171, 179, and 183.

Federal Authority: RCRA § 3004(d)-(k) and (m); 40 CFR 268.40(g)-(j), 268.40/Table, and 268.48(a)/Table as amended September 4, 1998 (63 FR 47410), May 11, 1999 (64 FR 25408), and October 20, 1999 (64 FR 56469).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

LL. State statutes and regulations provide for interim replacement standards for spent potliners from primary aluminum reduction (EPA hazardous waste K088) as indicated in Revision Checklists 173, 179, and 183.

Federal Authority: RCRA §3004(d)-(k), and (m); 40 CFR 268.40/Table, as amended September 24, 1998 (63 FR 51254), May 11, 1999 (64 FR 25408), and October 20, 1999 (64 FR 56469).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklist 185 Summary

Rule Title:	Organobromine Production Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Listing of CERCLA Hazardous Substances, Reportable Quantities; Final Rule
Checklist Title:	Vacatur of Organobromine Production Waste Listings
Reference:	65 FR 14472-14475
Promulgation Date:	March 17, 2000
Effective Date:	March 17, 2000
Cluster:	RCRA Cluster X
Provision Type:	HSWA
Linkage:	165 (withdrawn)
Optional:	Yes

Summary: EPA is amending its regulations to conform with an order issued on April 9, 1999 by the United States Court of Appeals for the D.C. Circuit in *Great Lakes Chemical Corporation v. EPA* [Docket No. 98-1312] that vacated Agency regulations listing certain organobromine wastes as hazardous wastes under RCRA (63 FR 24596; withdrawn Revision Checklist 165). The land disposal restrictions treatment standards of 40 CFR part 268 are also modified by deleting these wastes and their associated treatment standards. The vacated Federal hazardous waste listings and regulatory requirements based on those listings are to be treated as though they were never in effect. State regulations, which may be more stringent than Federal rules, were not necessarily affected by the court's ruling. Due to the vacatur, EPA withdrew Revision Checklist 165. Therefore, this revision checklist is only relevant for States that have already adopted the final rule addressed by withdrawn Revision Checklist 165 and wish to amend their regulations to conform to the vacatur.

State Authorization: This rule is placed in RCRA Cluster X. The State modification deadline is July 1, 2001 (or July 1, 2002 if a State statutory change is necessary). This rule was promulgated under HSWA authorities. The rule contains revisions that are considered less stringent than the existing Federal regulations. A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable statutes and regulations, Revision Checklist 185, and other application materials, i.e., a supplemental AG statement, a program description, and/or an MOA, as determined by the Regional office. Note that under 271.21(b), the Regional office is allowed flexibility to determine what specific documents must be included in an application. Also, under 271.21(d), the Regional office may require the submission of any additional application materials it deems necessary.

Revision Checklist 185 Summary (cont'd)

Attorney General's Statement Entry: The following entry should be placed at Subsection I(A)(33) in the Model Revision Attorney General's Statement.

(33) [OPTIONAL: This is a reduced requirement.] Removal of two vacated wastes (K140 and U408) from tables at 40 CFR 261.32, 261.33(f), and Part 261 Appendices VII and VIII , as amended March 17, 2000 [65 FR 14472], Revision Checklist 185.

The following entry should be placed at Subsection XXI (MM) in the Model Revision Attorney General's Statement.

MM. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include the removal of a waste-specific prohibition and treatment standards for K140 and U408 wastes under the land disposal restrictions program as indicated in Revision Checklist 185.

Federal Authority: RCRA §3004(d)-(k) and (m); 40 CFR 268.33, 268.40, and 268.48(a)/Table as amended March 17, 2000 (65 FR 14472).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference with respect to this checklist.

Revision Checklist 187 Summary

Rule Title:	Organobromines Production Wastes; Petroleum Refining Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Final Rule and Correcting Amendments
Checklist Title:	Petroleum Refining Process Wastes -- Clarification
Reference:	64 FR 36365-36367
Promulgation Date:	June 8, 2000
Effective Date:	June 8, 2000
Cluster:	RCRA Cluster X
Provision Type:	HSWA
Linkage:	169
Optional:	Conditionally optional

Summary: This rule corrects an error made in the August 6, 1998 rule (63 FR 42110; Revision Checklist 169) which listed four wastes from the petroleum refining industry as hazardous. The amending language in the August 6, 1998 rule included a typographical error that made the intent of the amendment unclear. The June 8, 2000 final rule addressed by this checklist revises the listing description for hazardous waste code F037 in 40 CFR 261.31(a) to reflect the original intent of the August 6, 1998 amendment. States that adopted the optional changes to 261.31(a) made by Revision Checklist 169 should also adopt the correction made by this rule.

Note that in the preamble to the June 8, 2000 rule, it states that the Agency neglected to delete the reference to U408 in Appendix VII of 40 CFR Part 268 in the March 17, 2000 rule (65 FR 14472; Revision Checklist 185). However, there was no entry for U408 in that Appendix. The actual amendment for the June 8, 2000 rule incorrectly removes the entry for U048 from Appendix VII to 40 CFR Part 268. U048 should not be removed from Appendix VII. States should not adopt any changes to this Appendix as part of the Revision Checklist.

State Authorization: This rule is placed in RCRA Cluster X. The State modification deadline is July 1, 2001 (or July 1, 2002 if a State statutory change is necessary).

This rule was promulgated under HSWA authorities. This rule contains a correction to an optional revision made by Revision Checklist 169. Therefore, this rule only takes effect on the Federal effective date in authorized States that have adopted the optional Revision Checklist 169 changes to 261.31(a). The rule does not take effect in authorized States that never adopted the Revision Checklist 169 changes to 261.31(a) until the State adopts and receives authorization for those changes. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable statutes and regulations, Revision Checklist 187, and other application materials, i.e. a supplemental AG statement, a program description, and/or an MOA, as determined by the Regional office. Note that under 271.21(b), the Regional office is

allowed flexibility to determine what specific documents must be included in an application. Also, under 271.21(d), the Regional office may require the submission of any additional application materials it deems necessary.

Attorney General's Statement Entry: The entry at Subsection II (G) in the Model Revision Attorney General's Statement should be replaced with the following entry.

> G. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include revisions to the exclusion for certain oil-bearing hazardous secondary materials, as well as new exclusions for petrochemical recovered oil, and spent caustic solutions from petroleum refining processes, and the related revisions to the references to these exclusions as indicated in Revision Checklists 169 and 187.
>
> Federal Authority: RCRA § 3001; 40 CFR 261.3(c)(2)(ii)(B), 261.4(a)(12), 261.4(a)(18) & (19), 261.6(a)(3)(iv)(C), 261.6(a)(3)(v), 261.31(a), and 266.100(b)(3), as amended August 6, 1998 (63 FR 42110), October 9, 1998 (63 FR 54356), and June 8, 2000 (64 FR 36365).
>
> Citation of Laws and Regulations; Date of Enactment and Adoption
>
> Remarks of the Attorney General

Incorporation by Reference Guidance: States should not adopt the revision to Appendix VII of 40 CFR 268, because the revision was made in error as explained in the above Summary section.

Revision Checklist 189 Summary

Rule Title:	Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Chlorinated Aliphatics Production Wastes; Land Disposal Restrictions for Newly Identified Wastes; and CERCLA Hazardous Substance Designation and Reportable Quantities
Checklist Title:	Chlorinated Aliphatics Listing and LDRs for Newly Identified Wastes
Reference:	65 FR 67068-67133
Promulgation Date:	November 8, 2000
Effective Date:	May 7, 2001
Cluster:	RCRA Cluster XI
Provision Type:	HSWA
Linkage:	None
Optional:	No

Summary: (1) This rule adds two wastes (K174 and K175) generated by the chlorinated aliphatics industry to the list of hazardous wastes at 40 CFR 261.32. The new wastes will be subjected to stringent management and treatment standards under RCRA and to emergency notification requirements. EPA is allowing a contingent-management listing approach for the K174 listing. Under this approach, the waste will not be a listed hazardous waste if sent to a specific type of management facility.

(2) In this rule, EPA also finalizes determinations not to list as hazardous four wastes generated by the chlorinated aliphatics industry.

State Authorization: This rule is placed in RCRA Cluster XI. The State modification deadline is July 1, 2002 (or July 1, 2003 if a State statutory change is necessary).

This rule was promulgated under HSWA authorities. The rule contains revisions that are considered more stringent than the existing Federal regulations. An authorized State is required to adopt Federal regulations that are more stringent than the authorized State regulations. These required HSWA revisions take effect in an authorized State on the Federal effective date. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

Attorney General Certification Guidance: Specific AG certification of statutory authority may not be required for this checklist as long as the AG has previously demonstrated authority for identification and listing of hazardous waste.

Revision Checklist 189 Summary (cont'd)

Program Description Guidance: A State seeking authorization for this checklist should determine whether the revisions impacts the program describe in the Program Description. Specifically, the State should determine the extent that the new waste listings will impact the size of the regulated community. The State should submit a Program Description revision that either (1) explains that the listed waste is not handled in the State, or (2) describes changes in the size of the regulated community. When describing changes to the scope of the program, the State should describe strategies and methods for identifying new members of the regulated community. When applicable, the State should provide an estimate of generators, transporters, and TSD facilities handling the newly listed wastes and an estimate of the quantity of newly regulated hazardous waste. The State should also describe any additional resources required to implement compliance monitoring and enforcement of newly regulated entities and activities associated with the newly listed hazardous wastes.

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklist 189 Summary

Rule Title:	Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Chlorinated Aliphatics Production Wastes; Land Disposal Restrictions for Newly Identified Wastes; and CERCLA Hazardous Substance Designation and Reportable Quantities
Checklist Title:	Chlorinated Aliphatics Listing and LDRs for Newly Identified Wastes
Reference:	65 FR 67068-67133
Promulgation Date:	November 8, 2000
Effective Date:	May 7, 2001
Cluster:	RCRA Cluster XI
Provision Type:	HSWA
Linkage:	None
Optional:	No

Summary: (1) This rule adds two wastes (K174 and K175) generated by the chlorinated aliphatics industry to the list of hazardous wastes at 40 CFR 261.32. The new wastes will be subjected to stringent management and treatment standards under RCRA, and to emergency notification requirements. EPA is allowing a contingent-management listing approach for one of these new wastes. Under this approach, the waste will not be a listed hazardous waste if sent to a specific type of management facility.

(2) In this rule, EPA also finalizes determinations not to list as hazardous four wastes generated by the chlorinated aliphatics industry.

State Authorization: This rule is placed in RCRA Cluster XI. The State modification deadline is July 1, 2002 (or July 1, 2003 if a State statutory change is necessary).

This rule was promulgated under HSWA authorities. The rule contains revisions that are considered more stringent than the existing Federal regulations. An authorized State is required to adopt Federal regulations that are more stringent than the authorized State regulations. These required HSWA revisions take effect in an authorized State on the Federal effective date. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable statutes and regulations, Revision Checklist 189, and other application materials, i.e. a supplemental AG statement, a program description, and/or an MOA, as determined by the Regional office. Note that under 40 CFR 271.21(b), the Regional office is allowed flexibility to determine what specific documents must be included in an application. Also, under 40 CFR 271.21(d), the Regional office may require the submission of any additional application materials it deems necessary.

Attorney General's Statement Entry: The following entry should be placed at Subsection I (A)(34) in the Model Revision Attorney General's Statement:

(34) Listing of two wastes (K174 and K175) generated during chlorinated aliphatic hydrocarbon production, 40 CFR 261.32, Part 261 Appendix VII and Part 261

Appendix VIII as amended November 8, 2000 (65 FR 67068), Revision Checklist 189.

The entry at Subsection XXI (**NN**) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

NN. State statutes and regulations provide for stringent management and treatment standards for two wastes (K174 and K175) generated by the chlorinated aliphatics industry as indicated in Revision Checklist 189.

Federal Authority: RCRA §§2002(a), 3001(b), 3001(e)(2), and 3007(a); 40 CFR 268.33, 268.40/Table, and 268.48(a)/Table as amended November 8, 2000 (65 FR 67068).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklist 190 Summary

Rule Title:	Deferral of Phase IV Standards for PCBs as a Constituent Subject to Treatment in Soil
Checklist Title:	Land Disposal Restrictions Phase IV – Deferral for PCBs in Soil
Reference:	65 FR 81373-81381
Promulgation Date:	December 26, 2000
Effective Date:	December 26, 2000
Cluster:	RCRA Cluster XI
Provision Type:	HSWA
Linkage:	Revision Checklist 167 B
Optional:	Yes

Summary: This rule temporarily defers the requirement that polychlorinated biphenyls (PCBs) be treated as a constituent subject to treatment (CST) when present in soils that exhibit the Toxicity Characteristic for metals. This temporary deferral is in response to comments from the regulated community and gives the Agency more time to study the issue of appropriate treatment standards for metal-contaminated soils containing PCBs as CST. Only States that adopted the optional Revision Checklist 167 B will be eligible to consider adopting this rule.

State Authorization: This rule is placed in RCRA Cluster XI. The State modification deadline is July 1, 2002 (or July 1, 2003 if a State statutory change is necessary).

This rule was promulgated under HSWA authorities. The rule contains revisions that are considered less stringent than the existing Federal regulations. A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

This rule has been designated as minor or routine; therefore, as indicated in the April 28, 1999 memorandum from the Acting Director of the Office of Solid Waste, States are not required to submit an Attorney General's (AG) statement, program description, and an MOA. The State Revision Application must include applicable regulations and Revision Checklist 190. Note that under 40 CFR 271.21(d), the Regional office retains the ability to request an AG statement addendum, other associated checklists, a program description and an MOA if necessary.

Attorney General's Statement Entry: The entry at Subsection XXI (OO) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> OO. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include a temporary deferral from the requirement that PCBs be treated as a constituent subject to

treatment when present in soils that exhibit the toxicity characteristic for metals, as indicated in Revision Checklist 190.

Federal Authority: RCRA §§3004(g) and (m); 40 CFR 268.32, 268.48(a)/Table UTS, 268.49(d), and Part 268 Appendix III as amended December 26, 2000 (65 FR 81373).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklist 190 Summary

Rule Title:	Deferral of Phase IV Standards for PCBs as a Constituent Subject to Treatment in Soil
Checklist Title:	Land Disposal Restrictions Phase IV – Deferral for PCBs in Soil
Reference:	65 FR 81373-81381
Promulgation Date:	December 26, 2000
Effective Date:	December 26, 2000
Cluster:	RCRA Cluster XI
Provision Type:	HSWA
Linkage:	Revision Checklist 167 B
Optional:	Yes

Summary: This rule temporarily defers the requirement that polychlorinated biphenyls (PCBs) be treated as a constituent subject to treatment (CST) when present in soils that exhibit the Toxicity Characteristic for metals. This temporary deferral is in response to comments from the regulated community and gives the Agency more time to study the issue of appropriate treatment standards for metal-contaminated soils containing PCBs as CST. Only States that adopted the optional Revision Checklist 167 B will be eligible to consider adopting this rule.

State Authorization: This rule is placed in RCRA Cluster XI. The State modification deadline is July 1, 2002 (or July 1, 2003 if a State statutory change is necessary).

This rule was promulgated under HSWA authorities. The rule contains revisions that are considered less stringent than the existing Federal regulations. A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

This rule has been designated as minor or routine; therefore, as indicated in the April 28, 1999 memorandum from the Acting Director of the Office of Solid Waste, States are not required to submit an Attorney General's (AG) statement, program description, and an MOA. The State Revision Application must include applicable regulations and Revision Checklist 190. Note that under 40 CFR 271.21(d), the Regional office retains the ability to request an AG statement addendum, other associated checklists, a program description and an MOA if necessary.

Attorney General's Statement Entry: The entry at Subsection XXI (OO) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> OO. [OPTIONAL: This is a reduced requirement.] State statutes and regulations include a temporary deferral from the requirement that PCBs be treated as a constituent subject to

treatment when present in soils that exhibit the toxicity characteristic for metals, as indicated in Revision Checklist 190.

Federal Authority: RCRA §§3004(g) and (m); 40 CFR 268.32, 268.48(a)/Table UTS, 268.49(d), and Part 268 Appendix III as amended December 26, 2000 (65 FR 81373).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklist 190 Summary

Rule Title:	Deferral of Phase IV Standards for PCBs as a Constituent Subject to Treatment in Soil
Checklist Title:	Land Disposal Restrictions Phase IV – Deferral for PCBs in Soil
Reference:	65 FR 81373-81381
Promulgation Date:	December 26, 2000
Effective Date:	December 26, 2000
Cluster:	RCRA Cluster XI
Provision Type:	HSWA
Linkage:	Revision Checklist 167 B
Optional:	Yes

Summary: This rule temporarily defers the requirement that polychlorinated biphenyls (PCBs) be regarded as a Constituent Subject to Treatment (CST) when present in soils that exhibit the Toxicity Characteristic for metals. This temporary deferral is in response to comments from the regulated community and gives the Agency more time to study the issue of appropriate treatment standards for metal-contaminated soils containing PCBs as CST. Only States that adopted the optional Revision Checklist 167 B will be eligible to consider adopting this rule.

State Authorization: This rule is placed in RCRA Cluster XI. The State modification deadline is July 1, 2002 (or July 1, 2003 if a State statutory change is necessary).

This rule was promulgated under HSWA authorities. The rule contains revisions that are considered less stringent than the existing Federal regulations. A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

Attorney General Certification Guidance: Specific AG certification of statutory authority may not be required for this checklist as long as the AG has previously demonstrated authority for land disposal restrictions.

Program Description Guidance: A State seeking authorization for this checklist may not need to submit a revised Program Description if the current Program Description already addresses land disposal restrictions.

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklists 192 A and B Summary

Rule Title:	Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-From Rules
Checklist Title:	A. Mixture and Derived-From Rules Revisions B. Land Disposal Restrictions Correction
Reference:	66 FR 27266-27297
Promulgation Date:	May 16, 2001
Effective Date:	August 14, 2001
Cluster:	RCRA Cluster XI
Provision Type:	HSWA/Non-HSWA
Linkage:	Checklist 192 A: Revision Checklists 117A and 117B Checklist 192 B: Revision Checklist 187
Optional:	Checklist 192 A is **not** optional**, but certain provisions are optional**. Checklist 192 B is not optional

Summary: (A) This rule finalizes the retention and revision of the mixture and derived-from rules as proposed on November 19, 1999 (64 FR 63382). The mixture and derived-from rules that are being finalized today include two revisions. The first revision expands the exclusion for mixtures and/or derivatives of wastes listed solely for the ignitability, corrosivity and/or reactivity characteristic. The second revision is a new conditional exemption from the mixture and derived-from rules for radioactive mixed waste.

(B) This rule also corrects an error made by the June 8, 2000 rule (65 FR 36365; Revision Checklist 187). The June 8, 2000 rule inadvertently removed the entry for hazardous waste code U048 from 40 CFR part 268, Appendix VII. Revision Checklist 192 B reinserts the entry for U048.

State Authorization: This rule is placed in RCRA Cluster XI. The State modification deadline is July 1, 2002 (or July 1, 2003 if a State statutory change is necessary).

The revisions to 40 CFR 261.3(g) and 261.3(h)(1)-(3) are promulgated pursuant to HSWA authorities. The HSWA revisions **to 261.3(h)** are considered less stringent than the existing Federal regulations. **(Note the preamble to 66 FR 27266 implied that the revisions to 261.3(g) were not required. At that time, this was correct because there were no wastes listed because they exhibited the TC. However with the listing of K176 (Revision Checklist 195, 66 FR 58258), this is no longer the case and States are required to adopt the 261.3(g) changes.)** A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. The revisions to 40 CFR 261.3(a)(2)(iii) and (iv), and 261.3(c)(2)(i) are promulgated pursuant to non-HSWA authorities. The non-HSWA changes do

Revision Checklists 192 A and B Summary (cont'd)

not go into effect in an authorized State until the State adopts and receives authorization for the revisions. Both interim and final authorization are available for the HSWA provisions. Interim authorization expires January 1, 2003. Only final authorization is available for the non-HSWA provisions.

This rule also contains a revision to 40 CFR 268, Appendix VII that is considered more stringent than the existing Federal regulations. An authorized State is required to adopt Federal regulations that are more stringent than the authorized State regulations. This required HSWA revision to 40 CFR 268, Appendix VII takes effect in an authorized State on the Federal effective date. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

Attorney General Certification Guidance: Specific AG certification of statutory authority may not be required for this checklist as long as the AG has previously demonstrated authority for the mixture and derived-from rules and for the land disposal restrictions.

Program Description Guidance: A State seeking authorization for this checklist may not need to submit a revised Program Description if the current Program Description already addresses the mixture and derived-from rules and land disposal restrictions.

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklists 192 A and B Summary

Rule Title:	Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-From Rules
Checklist Title:	A. Mixture and Derived-From Rules Revisions B. Land Disposal Restrictions Correction
Reference:	66 FR 27266-27297
Promulgation Date:	May 16, 2001
Effective Date:	August 14, 2001
Cluster:	RCRA Cluster XI
Provision Type:	HSWA/Non-HSWA
Linkage:	Checklist 192 A: Revision Checklists 117A and 117B Checklist 192 B: Revision Checklist 187
Optional:	Checklist 192 A is optional Checklist 192 B is not optional

Summary: (A) This rule finalizes the retention of the mixture rule and the derived-from rule with two revisions. The first revision expands the exclusion for mixtures and/or derivatives of wastes listed solely for the ignitability, corrosivity and/or reactivity characteristic. The second revision is a new conditional exemption from the mixture and derived-from rules for mixed wastes.

(B) This rule also corrects an error made by the June 8, 2000 rule (65 FR 36365; Revision Checklist 187). The June 8, 2000 rule inadvertently removed the entry for hazardous waste code U048 from 40 CFR part 268, Appendix VII. Revision Checklist 192 B reinserts the entry for U048.

State Authorization: This rule is placed in RCRA Cluster XI. The State modification deadline is July 1, 2002 (or July 1, 2003 if a State statutory change is necessary).

The revisions to 40 CFR 261.3(g) and 261.3(h)(1)-(3) are promulgated pursuant to HSWA authorities. The HSWA revisions are considered less stringent than the existing Federal regulations. A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. The revisions to 40 CFR 261.3(a)(2)(iii) and (iv), and 261.3(c)(2)(i) are promulgated pursuant to non-HSWA authorities. The non-HSWA changes do not go into effect in an authorized State until the State adopts and receives authorization for the revisions. Both interim and final authorization are available for the HSWA provisions. Interim authorization expires January 1, 2003. Only final authorization is available for the non-HSWA provisions.

This rule also contains a revision to 40 CFR 268, Appendix VII that is considered more stringent than the existing Federal regulations. An authorized State is required to adopt Federal regulations that are more stringent than the authorized State regulations. This required HSWA revision to 40 CFR 268, Appendix VII takes effect in an authorized State on the Federal effective date. Both interim and final authorization are available. Interim authorization expires January 1, 2003.

The State Revision Application must include applicable statutes and regulations, Revision Checklists 192 A and/or B, and other application materials, i.e. a supplemental AG statement, a program description, and/or an MOA, as determined by the Regional office. Note that under 271.21(b), the Regional office is allowed flexibility to determine what specific documents must be included in an application. Also, under 40 CFR 271.21(d), the Regional office may require the submission of any additional application materials it deems necessary.

Attorney General's Statement Entry: The following entry should be placed at Subsection I (VV) in the Model Revision Attorney General's Statement:

> VV. [OPTIONAL: This is a reduced requirement.] State statutes and regulations expand the exclusion from classification as hazardous to include mixtures and/or derivatives of wastes listed solely for ignitability, corrosivity and/or reactivity characteristics, and provide a conditional exemption from mixture and derived-from rules for mixed wastes as indicated in Revision Checklist 192 A.
>
> Federal Authority: RCRA §§1006, 2002(a), and 3001-3005; 40 CFR 261.3(a)(2)(iv), (c)(2)(i), (g) and (h) as amended May 16, 2001 (66 FR 27266).

The entry at Subsection XXI (GG) in the Model Revision Attorney General's Statement should be replaced with the following revised entry:

> GG. State statutes and regulations include corrections and clarifications to the land disposal restrictions as indicated in Revision Checklists 167 C, 179 and 192 B.

Federal Authority: RCRA §§3004(d)-(k) and (m); 40 CFR 268.4(a)(2)(ii)&(iii), 268.40/Table, 268.40(e), 268.42(a), 268.45(a) intro, 268.45(d)(3)&(4), 268.48, 268 Appendices VII & VIII as amended May 26, 1998 (63 FR 28556), June 8, 1998 (63 FR 31266), May 11, 1999 (64 FR 25408), and May 16, 2001 (66 FR 27266).

Citation of Laws and Regulations; Date of Enactment and Adoption

Remarks of the Attorney General

Incorporation by Reference Guidance: There is no special guidance for States that incorporate by reference.

Revision Checklist 194 Summary

Rule Title:	Correction to the Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-From Rules
Checklist Title:	Mixture and Derived-From Rules Revision II
Reference:	66 FR 50332-50334
Promulgation Date:	October 3, 2001
Effective Date:	February 1, 2002 (see 66 FR 61053, December 3, 2001)
Cluster:	RCRA Cluster XII
Provision Type:	HSWA/Non-HSWA
Linkage:	192 A and 117A&B
Optional:	Yes, conditionally optional

Summary: This rule finalizes a clarifying revision to the May 16, 2001 (Revision Checklist 192A; 66 FR 27266) mixture rule. Specifically, the rule clarifies that mixtures of certain excluded wastes, commonly referred to as Bevill wastes, and listed hazardous wastes that are listed solely because they contain a characteristic of ignitability, corrosivity, and/or reactivity, are exempt once the characteristic has been removed. Only states that adopted the optional Revision Checklist 192 A should adopt this rule.

On December 3, 2001, EPA reopened the comment period for thirty days, and delayed the effective date of this rule by 60 days. The rule will be effective February 1, 2002, unless adverse comment is received.

State Authorization: This rule is placed in RCRA Cluster XII. The State modification deadline is July 1, 2003 (or July 1, 2004 if a State statutory change is necessary).

The revision to 40 CFR 261.3(g) is promulgated pursuant to HSWA authorities. The HSWA revision is considered less stringent than the existing Federal regulations. A State is not required to modify its program when EPA promulgates Federal regulations that are less stringent than the authorized State regulations. As such, optional revisions are not effective under HSWA in an authorized State until the State adopts and receives authorization for the changes. Both interim and final authorization are available for the HSWA provisions. Interim authorization expires January 1, 2003.

No new State authorities are needed to implement this rule. No revisions made by this rule create a direct requirement for changes in the State's Memorandum of Agreement with EPA. This rule also makes no revisions which require a change in the State's Program Description, except to address the expanded number of rules adopted by the State. This rule has been designated as minor or routine; therefore, States are not required to submit an Attorney General's (AG) statement, program description, and an MOA. The State Revision Application must include applicable regulations and, if required by the applicable Region, Revision Checklist 194. Note that under 40 CFR 271.21(d), the Regional office retains the ability to request an AG

statement addendum, other associated checklists, a program description, and an MOA if necessary.

Attorney General Certification Guidance: Specific AG certification of statutory authority may not be required for this checklist as long as the AG has previously demonstrated authority for identification and listing of hazardous waste.

Program Description Guidance: A State seeking authorization for this checklist should determine whether the revisions impacts the program describe in the Program Description. Specifically, the State should determine the extent that the new waste listings will impact the size of the regulated community. The State should submit a Program Description revision that either (1) explains that the listed waste is not handled in the State, or (2) describes changes in the size of the regulated community. When describing changes to the scope of the program, the State should describe strategies and methods for identifying new members of the regulated community. When applicable, the State should provide an estimate of generators, transporters, and TSD facilities handling the newly listed wastes and an estimate of the quantity of newly regulated hazardous waste. The State should also describe any additional resources required to implement compliance monitoring and enforcement of newly regulated entities and activities associated with the newly listed hazardous wastes.

Incorporation by Reference Guidance: In the 2001 version of the CFR, 40 CFR 261.3(a)(2)(iv) is incorrect. States that incorporate by reference the 2001 version of the CFR should exclude 40 CFR 261.3(a)(2)(iv) from the incorporation and instead, adopt the version found at either 66 FR 27297 (Revision Checklist 192 A; May 16, 2001) or 66 FR 50333 (Revision Checklist 194; October 3, 2001).

Revision Checklist 199 Summary

Rule Title:	Hazardous Waste Management System; Definition of Solid Waste; Toxicity Characteristic
Checklist Title:	Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste
Reference:	67 FR 11251-11254
Promulgation Date:	March 13, 2002
Effective Date:	March 13, 2002
Cluster:	RCRA Cluster XII
Provision Type:	Non-HSWA
Linkage:	Revision Checklist 167
Optional:	No; however, most provisions are conditionally optional

Summary: This rule was promulgated in response to vacaturs ordered by the United States Court of Appeals for the District of Columbia Circuit in *Association of Battery Recyclers, v. EPA 208 F.3d 1047 (2000)*. The court vacated two parts of the May 26, 1998 Phase IV LDR rule (63 FR 28556; Revision Checklist 167) in response to a legal challenge from the Association of Battery Recyclers, the National Mining Association and other trade groups. The first vacated part of the rule required deletion of regulatory language classifying mineral processing characteristic by-products and sludges being reclaimed as solid wastes. The second vacated part disallows the Toxicity Characteristic Leaching Procedure (TCLP) to be used for determining whether manufactured gas plant (MGP) waste is hazardous.

State Authorization: This rule is placed in RCRA Cluster XII. The State modification deadline is July 1, 2003 (or July 1, 2004 if a State statutory change is necessary).

All revisions in this rule are promulgated under non-HSWA authority and will only become effective in an authorized State when the State amends its regulations to include these vacaturs and receives authorization. For States without authorization, the vacaturs go into effect on the effective date of this rule.

With the exception of changes to 261.24(a), the revisions in this rule are conditionally optional; if a State adopted the optional provisions when it was added to the Federal program by Revision Checklist 167, then the State must make the Revision Checklist 199 revision.

Attorney General (AG) Certification Guidance: Specific AG certification of statutory authority may not be required for this checklist as long as the AG has previously demonstrated authority for identification and listing of hazardous waste.

Program Description (PD) Guidance: A State seeking authorization for this checklist should determine whether the revisions impact the program described in the Program Description. EPA

Revision Checklist 199 Summary (cont'd)

believes that this rule does not include any significant changes or additions affecting the RCRA program and thus, States should not need to submit a revised PD.

Incorporation by Reference Guidance: States that followed the IBR guidance for Revision Checklist 167 D should remove any exceptions to the IBR for 40 CFR 261.2(c)(3). Instead, they should incorporate by reference, the rule addressed by this checklist.

[NOTE: See MN Rule language corrections for 40 CFR 261.3(c)(2)(ii)(C) at MNR 7045.0214, 3, E on this page of this document. This checklist was submitted in a prior authorization application and this amendment addresses an EPA comment from that application.]

RCRA REVISION CHECKLIST 95

Land Disposal Restrictions for
Electric Arc Furnace Dust (K061)
56 FR 41164-41178
August 19, 1991
(RCRA Cluster II, HSWA Rule)

Note: This checklist revises and finalizes treatment standards for K061 nonwastewaters in the high zinc subcategory originally regulated in the First Third Land Disposal Restrictions rule addressed by Revision Checklist 50 (53 FR 31138; August 17, 1988). Other related checklists include Revision Checklist 62 (54 FR 18836; May 2, 1989) and Revision Checklist 66 (54 FR 36967; September 6, 1989), as these two checklists amended and corrected Revision Checklist 50.

	STATE ANALOG IS:				
FEDERAL REQUIREMENT	FEDERAL RCRA CITATION		ANALOGOUS	EQUIV-	MORE BROADER STATE CITATION

PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

SUBPART A - GENERAL

DEFINITION OF HAZARDOUS WASTE

†	add new paragraph which excludes as hazardous waste certain nonwastewater residues resulting from high temperature metals recovery processing of K061 waste; generic exclusion levels; testing requirements; notification and certification requirements for each shipment of certain K061 HTMR residues sent to a subtitle D unit	261.3(c)(2)(ii)(C)	7045.0214, 3, E	Equivalent	

SPA 12

	EXCLUSIONS			
†	add new paragraph which excludes as solid waste nonwastewater splash condenser dross residue from the treatment of K061 in high temperature metals recovery units, provided it is shipped in drums (if shipped) and not land disposed before recovery	261.4(a)(11)	7045.0125, 4, K	existing rule identical to 2001 CFR

PART 268 - LAND DISPOSAL RESTRICTIONS

SUBPART D - TREATMENT STANDARDS

TREATMENT STANDARDS EXPRESSED AS CONCENTRATIONS IN WASTE EXTRACT			
in Table CCWE revise entry for K061, high zinc subcategory as shown below (see 56 FR 41177)	268.41(a)/Table CCWE	7045.1390	IBR
at end of paragraph add "except that mixtures of high and low zinc nonwastewater K061 are subject to the treatment standard for high zinc K061"	268.41(b)	7045.1390	IBR
TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES			
in Table 2 remove entry for K061	268.42(a)/Table 2	7045.1390	IBR

RCRA REVISION CHECKLIST 100

Liners and Leak Detection Systems for Hazardous Waste
Land Disposal Units
57 FR 3462-3497
January 29, 1992
(RCRA Cluster II, Both HWSA and Non-HWSA provisions)

Note: As is explained in the preamble (57 FR 3480 & 3481), EPA considers all of this rule to be promulgated pursuant to HSWA, with the exception of the Construction Quality Assurance Program (CQA) as it applies to final cover requirements.

[NOTE: See MN Rule language corrections for 40 CFR 264.310(b)(3) at MNR 7045.0538, 7, B, (4), and for 40 CFR 265.310(b)(2) at MNR 7045.0638, 4, B, (2) in this document. This checklist was submitted in a prior authorization application and these amendments address EPA comments from that application so the MPCA only completed the checklist items needing revision. The other provisions, addressed in a prior version of this checklist, remain in effect.]

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART B - DEFINITIONS						
DEFINITIONS						
add "replacement unit"	260.10					
revise "sump"	260.10					
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL INSPECTION REQUIREMENTS						
replace "264.194" with "264.193, 264.195"; remove "264.253"; add "264.278	264.15(b)(4)					
[1] CONSTRUCTION QUALITY ASSURANCE PROGRAM						
[2] CQA program	264.19(a)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
required for all surface impoundment, wastepile and landfill units that must comply with 264.221(c)&(d), 264.251(c)&(d), and 264.301(c)&(d); program must ensure constructed unit meets or exceeds all permit design criteria and specifications; program must be developed and implemented under a CQA officer who is a registered professional engineer	264.19(a)(1)					
	264.19(a)(2)					
	264.19(a)(2)(i)					
	264.19(a)(2)(ii)					
	264.19(a)(2)(iii)					
	264.19(a)(2(iv)					
	264.19(a)(2)(v)					
the physical components the CQA program must address	264.19(a)(2)(vi)					
before construction begins, owner/operator must develop a written CQA plan; must identify steps that will be used to monitor and document quality of materials and condition and manner of their installation; what the CQA plan must include:	264.19(b)					
identification of applicable units and how they will be constructed	264.19(b)(1)					
identification of key CQA plan development and implementation personnel; CQA officer qualifications	264.19(b)(2)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
inspection and sampling activities' description; what must be described	264.19(b)(3)					
contents of program	264.19(c)					
must include observations, inspections, tests, and measurements sufficient to ensure:	264.19(c)(1)					
structural stability and integrity of 264.19(a)(2) units	264.19(c)(1)(i)					
proper construction according to permit specifications and good engineering practices, and proper installation according to design specifications	264.19(c)(1)(ii)					
material conformity with design and other material specifications	264.19(c)(1)(iii)					
test fills for compacted soils liners, using full scale compaction methods to ensure liners are constructed to meet specific hydraulic conductivity requirements; compliance verified by in-situ testing on constructed test fill; conditions under which alternate may be accepted	264.19(c)(2)					
certification to Regional Administrator before waste received; signed by CQA officer stating that approved CQA plan successfully carried out and units meet specific requirements; 270.30(l)(2)(ii) procedure complete; documentation furnished upon request	264.19(d)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
OPERATING RECORD						
insert "264.19, 264.191, 264.193, 246.195, 264.222, 264.223"; replace "264.253, 264.254" with "264.252 - 264.254" and "264.303" with "264.302 - 264.304"	264.73(b)(6)					SUBP ART K - SURF ACE IMPO UNDM ENTS
DESIGN AND OPERATING REQUIREMENTS						
completely revise paragraph; surface impoundments which must install two or more liners and a leachate collection and removal system between such liners; "construction commences" defined under "existing facility"	264.221(c)					
liner system must include:	264.221(c)(1)(i)					
top liner designed and constructed to prevent migration of hazardous constituents into liner for specified period	264.221(c)(1)(i)(A)					
[3] composite bottom liner consisting of at least two components; upper component to prevent migration of hazardous constituents into this component during specified period; lower component designed and constructed to minimize such migration if upper component is breached; specified thickness and hydraulic conductivity	264.221(c)(1)(i)(B)					
liners must comply with 264.221(a)(1),(2)&(3)	264.221(c)(1)(ii)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
relationship between leachate collection and removal system and a "leak detection system"; what system must be capable of; minimum requirements	264.221(c)(2)					
bottom slope of 1 percent or more	264.221(c)(2)(i)					
[4] constructed of: 1) granular drainage materials with $1x10^{-1}$cm/sec or more hydraulic conductivity and 12 in. (30.5 cm) or more thickness, or 2) synthetic or geonet drainage materials with $3x10^{-4}m^2$/sec or more transmissivity	264.221(c)(2)(ii)					
construction material specifications	264.221(c)(2)(iii)					
designed and operated to minimize clogging during active life and post-closure care period	264.221(c)(2)(iv)					
specifications for sumps and liquid removal methods	264.221(c)(2)(v)					
collect and remove pumpable liquids in sumps to minimize head on bottom liner	264.221(c)(3)					
what must be demonstrated if leak detection system is not located completely above seasonal high water table	264.221(c)(4)					
Regional Administrator may approve alternate design or operating practices if owner or operator can demonstrate that design/practices will:	264.221(d)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
prevent hazardous constituent migration into ground or surface water as effectively as system specified in 264.221(c), and	264.221(d)(1)					
allow detection of hazardous constituent leaks through top liner at least as effectively	264.221(d)(2)					
redesignate old 264.221(f) as 264.221(g); add new paragraph on exemption from 264.221(c) for replacement surface impoundment unit	264.221(f)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	264.221(f)(1)					
no reason to believe liner is not functioning as designed	264.221(f)(2)					
old 264.221(f),(g)&(h) become 264.221(g),(h)&(i)	264.221(g)-(i)					
ACTION LEAKAGE RATE						
Regional Administrator approval of action leakage rate for surface impoundment units subject to 264.221(c)or(d); definition of action leakage rate; adequate safety margin	264.222(a)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly, during active life and closure period and monthly during post-closure care period	264.222(b)					
RESPONSE ACTIONS						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
approved response action plan before receipt of waste for surface impoundments subject to 264.221(c)or(d); address actions if action leakage rate exceeded; at a minimum plan must describe actions in 264.223(b)	264.223(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	264.223(b)					
notify Regional Administrator in writing within seven days of determination	264.223(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	264.223(b)(2)					
determine location, size and cause of any leak	264.223(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, or 3) unit should be closed	264.223(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	264.223(b)(5)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 264.223(b)(3)-(5) analyses, the results of actions taken, and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	264.223(b)(6)					
how the 264.223(b)(3)-(5) determinations must be made:	264.223(c)					
assess the source of liquids and amounts by source	264.223(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	264.223(c)(1)(ii)					
assess seriousness of leaks	264.223(c)(1)(iii)					
document why assessments not needed	264.223(c)(2)					
MONITORING AND INSPECTION						
if leak detection system required under 264.221(c)or(d), record amount of liquids removed from each sump, at least weekly during active life and closure period	264.226(d)(1)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
after final cover installed, at least monthly record the amount of liquids removed from each leak detection sump; when quarterly and semi-annual recording allowed; when monthly recording must resume	264.226(d)(2)					
definition of "pump operating level"	264.226(d)(3)					CLOSURE AND POST-CLOSURE CARE
redesignate old 264.228(b)(2) as 264.228(b)(3); add new paragraph addressing maintaining and monitoring leak detection system in accordance with 264.221(c)(2)(iv)&(3) and 264.226(d); comply with other applicable Part 264 leak detection requirements	264.228(b)(2)					
redesignated 264.228(b)(2) becomes new 264.228(b)(3)	264.228(b)(3)					
redesignated 264.228(b)(3) becomes new 264.228(b)(4)	264.228(b)(4)					

SUBPART L - WASTE PILES

DESIGN AND OPERATING REQUIREMENTS

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
redesignate old 264.251(c) as 264.251(g); add new paragraph addressing waste piles that must install two or more liners and a leachate collection and removal system above and between these liners; "construction commences" defined under "existing facility"	264.251(c)					
liner system must include:	264.251(c)(1)(i)					
top liner designed and constructed to prevent migration of hazardous constituents into liner for specified period	264.251(c)(1)(i)(A)					
composite bottom liner consisting of at least two components; upper component to prevent migration of hazardous constituents into this component during specified period; lower component designed and constructed to minimize such migration if upper component is breached; specified thickness and hydraulic conductivity	264.251(c)(1)(i)(B)					
liners must comply with 264.251(a)(1)(i)-(iii)	264.251(c)(1)(ii)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
leachate collection and removal system must collect and remove leachate from the waste pile during the active life and post-closure care period; Regional Administrator to specify permit conditions to ensure leachate depth over liner does not exceed 30 cm (1 ft); leachate collection and removal system must comply with 264.251(c)(3)(iii)&(iv)	264.251(c)(2)					
relationship between leachate collection and removal system and the leak detection system; what the leak detection system must be capable of; minimum requirements:	264.251(c)(3)					
bottom slope of 1 percent or more	264.251(c)(3)(i)					
constructed of: 1) granular drainage materials with hydraulic conductivity of $1x10^{-2}$cm/sec or more, and 12 in. (30.5 cm) or more thickness; or 2) synthetic or geonet drainage materials with 3x10_$^{5}m^{2}$/sec or more transmissivity	264.251(c)(3)(ii)					
construction material specifications	264.251(c)(3)(iii)					
designed/operated to minimize clogging during active life and post-closure care period	264.251(c)(3)(iv)					
specifications for sumps and liquid removal methods	264.251(c)(3)(v)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
collect and remove pumpable liquids in leak detection system sumps to minimize head on the bottom liner	264.251(c)(4)					
what must be demonstrated if leak detection system not located completely above seasonal high water table	264.251(c)(5)					
redesignate old 264.251(d) as 264.251(h); add new paragraph addressing circumstances under which Regional Administrator may approve alternate design or operating practices if owner/operator can demonstrate that design/practices will:	264.251(d)					
prevent hazardous constituent migration into ground or surface water as effectively as system specified in 264.251(c), and	264.251(d)(1)					
allow detection of hazardous constituent leaks through top liner at least as effectively	264.251(d)(2)					
redesignate old 264.251(e) as 264.251(i); add new paragraph addressing monofills granted a 264.221(e) waiver by Regional Administrator	264.251(e)					
redesignate old 264.251(f) as 264.251(j); add new paragraph addressing when a replacement waste pile owner/operator is exempt from 264.251(c)	264.251(f)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	264.251(f)(1)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
no reason to believe liner is not functioning as designed	264.251(f)(2)					
old 264.251(c)-(g) become new 264.251(g)-(k)	264.251(f)(g)-(k)					
ACTION LEAKAGE RATE						
Regional Administrator approval of action leakage rate for waste pile units subject to 264.251(c) or (d); definition of action leakage rate; adequate safety margin	264.252(a)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly, during active life and closure period	264.252(b)					RESPONSE ACTIONS
approved response action plan before receipt of waste for waste piles subject to 264.251(c) or (d); address actions if action leakage rate exceeded; plan must describe actions in 264.253(b)	264.253(a)					
responsibilities if flow rate into leak system exceeds the action leakage rate for any sump:	264.253(b)					
notify Regional Administrator in writing within seven days of determination	264.253(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	264.253(b)(2)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
determine location, size and cause of any leak	264.253(b)(3)					
determine if 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	264.253(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	264.253(b)(5)					
within 30 days after Regional Administrator notification, submit the results of 264.253(b)(3)-(5) analyses, the results of actions taken and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	264.253(b)(6)					
how the 264.253(b)(3), (4), & (5) determinations must be made	264.253(c)					
assess the source of liquids and amounts by source	264.253(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	264.253(c)(1)(ii)					
assess seriousness of leaks	264.253(c)(1)(iii)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
document why assessments not needed	264.253(c)(2)					MONITORING AND INSPECTION
if leak detection system required under 264.251(c), record amount of liquids removed from each sump, at least weekly during active life and closure period	264.254(c)					
SUBPART N - LANDFILLS						
DESIGN AND OPERATING REQUIREMENTS						
completely revise paragraph; landfills that must install two or more liners and a leachate collection and removal system above and between such liners; "construction commences" defined under "existing facility"	264.301(c)					
the liner system must include:	264.301(c)(1)(i)					
top liner designed and constructed to prevent migration of hazardous constituents into liner for specified period	264.301(c)(1)(i)(A)					
composite bottom liner consisting of at least two components; upper component to prevent migration of hazardous constituents into this component during specified period; lower component designed and constructed to minimize such migration if upper component is breached; specified thickness and hydraulic conductivity	264.301(c)(1)(i)(B)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
liners must comply with 264.301(a)(1)(i)-(iii)	264.301(c)(1)(ii)					
6 leachate collection and removal system must collect and remove leachate from the landfill during the active life and post-closure care period; Regional Administrator to specify permit conditions to ensure leachate depth over liner does not exceed 30 cm (1 ft); leachate collection and removal system must comply with 264.301(c)(3)(iii)&(iv)	264.301(c)(2)					
relationship between leachate collection and removal system and the leak detection system; what the leak detection system must be capable of; minimum requirements:	264.301(c)(3)					
bottom slope of 1 percent or more	264.301(c)(3)(i)					
constructed of: 1) granular drainage materials with hydraulic conductivity of $1x10^{-2}$cm/sec or more, and 12 in. (30.5 cm) or more thickness; or 2) synthetic or geonet drainage materials with $3x10^{-5}m^2$/sec or more transmissivity	264.301(c)(3)(ii)					
construction material specifications	264.301(c)(3)(iii)					
designed/operated to minimize clogging during active life and post-closure care period	264.301(c)(3)(iv)					
specifications for sumps and liquid removal methods	264.301(c)(3)(v)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
collect and remove pumpable liquids in leak detection system sumps to minimize head on the bottom liner	264.301(c)(4)					
what must be demonstrated if leak detection system not located completely above seasonal high water table	264.301(c)(5)					
completely revise paragraph; Regional Administrator may approve alternate design or operating practices if owner/operator can demonstrate that design/practices will:	264.301(d)					
prevent hazardous constituent migration into ground or surface water as effectively as system specified in 264.301(c), and	264.301(d)(1)					
allow detection of hazardous constituent leaks through top liner at least as effectively	264.301(d)(2)					
redesignate old paragraph 264.301(f) as 264.301(g); add new paragraph addressing when a replacement landfill owner/operator is exempt from 264.301(c)	264.301(f)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	264.301(f)(1)					
no reason to believe liner is not functioning as designed	264.301(f)(2)					
old 264.301(f)-(k) become new 264.301(g)-(l)	264.301(g)-(l)					ACTION LEAKAGE RATE

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
[7] Regional Administrator approval of action leakage rate for landfill units subject to 264.301(c) or (d); definition of action leakage rate; adequate safety margin	264.302(a)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly, during active and closure period	264.302(b)					
MONITORING AND INSPECTION						
if leak detection system required 264.301(c) or (d), record amount of liquids removed from each sump at least weekly during the active life and closure period	264.303(c)(1)					
after final cover installed, at least monthly record the amount of liquids removed from each leak detection sump; when quarterly and semi-annual recording allowed; when monthly recording must resume	264.303(c)(2)					
definition of "pump operating level"	264.303(c)(3)					RESPONSE ACTIONS
approved response action plan before receipt of waste for landfills subject to 264.301(c) or (d); address actions if action leakage rate exceeded; at a minimum, plan must describe actions in 264.304(b)	264.304(a)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
responsibilities if flow rate into leak detection system exceeds the section leakage rate for any sump	264.304(b)					
notify Regional Administrator in writing within seven days of determination	264.304(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	264.304(b)(2)					
determine location, size and cause of any leak	264.304(b)(3)					
determine if 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	264.304(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	264.304(b)(5)					
within 30 days after Regional Administrator notification, submit the results of 264.304(b)(3)-(5) analyses, the results of actions taken and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	264.304(b)(6)					
how the 264.304(b)(3)-(5) determinations must be made	264.304(c)					
assess the source of liquids and amounts by source	264.304(c)(1)(i)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	264.304(c)(1)(ii)					
assess seriousness of leaks	264.304(c)(1)(iii)					
document why assessments not needed	264.304(c)(2)					CLOSURE AND POST-CLOSURE CARE
redesignate old 264.310(b)(3) as 264.310(b)(4); add new paragraph addressing maintaining and monitoring leak detection system according to 264.301(c)(3)(iv)&(4) and 264.303(c); comply with other applicable Part 264 leak detection requirements	264.310(b)(3)	7045.0538, 7, B, (4)	X			
old 264.310(b)(3)-(5) become 264.310(b)(4)-(6)	264.310(b)(4)-(6)					
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL INSPECTION REQUIREMENTS						
insert "265.260, 265.278, 265.304"	265.15(b)(4)					
CONSTRUCTION QUALITY ASSURANCE PROGRAM						
1 CQA program	265.19(a)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
required for all surface impoundment, waste pile and landfill units that must comply with 265.221(a), 265.254 and 265.301(a); program must ensure constructed unit meets or exceeds all permit design criteria and specifications; program must be developed and implemented under a CQA officer who is a registered professional engineer	265.19(a)(1)					
	265.19(a)(2)					
	265.19(a)(2)(i)					
	265.19(a)(2)(ii)					
	265.19(a)(2)(iii)					
	265.19(a)(2)(iv)					
	265.19(a)(2)(v)					
the physical components the CQA program must address	265.19(a)(2)(vi)					
before construction begins, owner/operator must develop a written CQA plan; identify steps that will be used to monitor and document the quality of materials and condition and manner of their installation; the CQA plan must include:	265.19(b)					
identification of applicable units and how they will be constructed	265.19(b)(1)					
identification of key CQA plan development and implementation personnel; CQA officer qualifications	265.19(b)(2)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
inspection and sampling activities' description; what must be described	265.19(b)(3)					
contents of program	265.19(c)					
must include observations, inspections, tests, and measurements sufficient to ensure:	265.19(c)(1)					
structural stability and integrity of 265.19(a)(2) units	265.19(c)(1)(i)					
proper construction according to permit specifications and good engineering practices, and proper installation according to design specifications	265.19(c)(1)(ii)					
material conformity with design and other material specifications under 264.221, 264.251, and 264.301	265.19(c)(1)(iii)					
test fills for compacted soils liners, using full scale compaction methods to ensure liners are constructed to meet specific hydraulic conductivity requirements; compliance verified by in-situ testing on constructed test fill; conditions under which test fill requirement may be waived	265.19(c)(2)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
certification to Regional Administrator at least 30 days before receiving waste; signed by CQA officer stating that CQA plan has been successfully carried out and that the unit meets specific requirements; may receive wastes in unit after 30 days from the Regional Administrator's receipt of the CQA, unless Regional Administrator determines in writing that construction is not acceptable or extends review period for 30 days or seeks additional information; CQA documentation	265.19(d)					SUBPART E - MANIFEST SYSTEM, RECORDKEEPING AND REPORTING
OPERATING RECORD						
replace "when required by" with ", and corrective action where required by subpart F and"; insert "265.19" before "265.90"; insert "265.222, 265.223, 265.226, 265.255, 265.259, 265.260" after "265.195" and "265.302 - 265.304" after "265.280(d)(1)"	265.73(b)(6)					
SUBPART K - SURFACE IMPOUNDMENTS						
DESIGN AND OPERATING REQUIREMENTS						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
completely revise paragraph; surface impoundment units that must install two or more liners and a leachate collection and removal system between such liners and operate leachate collection and removal systems in accordance with 264.221(c), "construction commences" defined under "existing facility"	265.221(a)					
revise paragraph; when a replacement surface impoundment unit is exempt from 265.221(a):	265.221(c)					
constructed in compliance with RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	265.221(c)(1)					
no reason to believe liner is not functioning as designed	265.221(c)(2)					
redesignate old paragraph 265.222(a) as 265.221(f)	265.221(f)					
redesignate old paragraph 265.222(b) as 265.221(g)	265.221(g)					
ACTION LEAKAGE RATE						
redesignate old 265.222(a) as 265.221(f); add new paragraph addressing proposed action leakage rate to Regional Administrator when submitting 265.221(b) notice; within 60 days of receipt, Regional Administrator will establish action leakage rate or extend review period; when the proposed rate will be approved	265.222(a)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
redesignate old 265.222(b) as 265.221(g); add new paragraph addressing Regional Administrator approval of action leakage rate for 265.221(a) units; definition of action leakage rate; adequate safety margin	265.222(b)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly during active life and closure period, and monthly during post-closure care period	265.222(c)					
RESPONSE ACTIONS						
if unit subject to 265.221(a), then must submit a response action plan to the Regional Administrator when submitting 265.222 proposed action leakage rate; must set forth actions to be taken if action leakage rate is exceeded; content as specified in 265.223(b)	265.223(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	265.223(b)					
notify Regional Administrator in writing within seven days of determination	265.223(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	265.223(b)(2)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
determine location, size and cause of any leak	265.223(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	265.223(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	265.223(b)(5)					
within 30 days after Regional Administrator notification, submit the results of 265.223(b)(3)-(5) analyses, the results of actions taken, and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	265.223(b)(6)					
how the 265.223(b)(3), (4) & (5) determinations must be made	265.223(c)					
assess the source of liquids and amounts by source	265.223(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	265.223(c)(1)(ii)					
assess seriousness of leaks	265.223(c)(1)(iii)					
document why assessments not needed	265.223(c)(2)					

MONITORING AND INSPECTION

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
if leak detection system required under 265.221(a), record amount of liquid removed from each sump, at least weekly during active life and closure period	265.226(b)(1)					
after final cover installed, record amount of liquids at least monthly; when quarterly and semi-annual recording allowed; when monthly recording must resume	265.226(b)(2)					
"pump operating level" defined	265.226(b)(3)					CLOSURE AND POST-CLOSURE CARE
redesignate old 265.228(b)(2) as 265.228(b)(3); add new paragraph regarding maintaining and monitoring the leak detection system in accordance with 265.221(c)(2)(iv) and (3) and 265.226(b) and comply with other applicable Part 265 leak detection system requirements	265.228(b)(2)					
redesignated 265.228(b)(2) becomes new 265.228(b)(3)	265.228(b)(3)					
redesignated 265.228(b)(3) becomes new 265.228(b)(4)	265.228(b)(4)					

SUBPART L - WASTE PILES

DESIGN AND OPERATING REQUIREMENTS

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
completely revise section; waste piles which must install two or more liners and a leachate collection and removal system in accordance with 264.251(c) unless exempt under 264.251(d), (e) or (f); compliance with 265.221(b) procedures; "construction commences" defined under "existing facility"	265.254					
ACTION LEAKAGE RATES						
proposed action leakage rate to Regional Administrator when submitting 265.254 notice; within 60 days of receipt, Regional Administrator will establish action leakage rate or extend review period; when the proposed rate will be approved	265.255(a)					
[8] Regional Administrator approval of action leakage rate for 265.254 units; definition of action leakage rate; adequate safety margin	265.255(b)					
how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly during active life and closure period	265.255(c)					RESPONSE ACTIONS

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
if unit subject to 265.254, then must submit a response action plan to the Regional Administrator when submitting 265.255 proposed action leakage rate; must set forth actions to be taken if action leakage rate is exceeded; content as specified in 265.259(b)	265.259.(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	265.259(b)					
notify Regional Administrator in writing within seven days of determination	265.259(b)(1)					
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	265.259(b)(2)					
determine location, size and cause of any leak	265.259(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	265.259(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	265.259(b)(5)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
within 30 days after Regional Administrator notification, submit the results of 265.259(b)(3)-(5) analyses, the results of actions taken and actions planned thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	265.259(b)(6)					
how the 265.259(b)(3),(4) & (5) determinations must be made:	265.259(c)					
assess the source of liquids and amounts by source	265.259(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	265.259(c)(1)(ii)					
assess seriousness of leaks	265.259(c)(1)(iii)					
document why assessments not needed	265.259(c)(2)					MONITORING AND INSPECTION
if leak detection system required under 265.254, record amount of liquids removed from each sump, at least weekly during active life and closure period	265.269					
SUBPART N -- LANDFILLS						
DESIGN AND OPERATING REQUIREMENTS						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
completely revise paragraph; landfills which must install two or more liners and a leachate collection and removal system above and between such liners, and operate in accordance with 264.301(d), (e) or (f); "construction commences" defined under "existing facility"	265.301(a)					
revise paragraph; when a landfill owner/operator is exempt from 265.301(a)	265.301(c)					
meets RCRA 3004(o)(1)(A)(i) and (o)(5) design standards	265.301(c)(1)					
no reason to believe liner is not functioning as designed	265.301(c)(2)					
redesignated 265.302(a), (b), (c) & (d) became new 265.301(f), (g), (h) and (i)	265.301(f)-(i)					
ACTION LEAKAGE RATE						
redesignate old 265.302(a) as 265.301(f); add new paragraph addressing proposed action leakage rate to Regional Administrator when submitting 265.301(b) notice; within 60 days of receipt Regional Administrator will establish action leakage rate or extend the review period; when the proposed rate will be approved	265.302(a)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
redesignate old 265.302(b) as 254.301(g); add new paragraph addressing Regional Administrator approval of action leakage rate for 265.301(a) units; definition of action leakage rates; adequate safety margin	265.302(b)					
redesignate old 265.302(c) as 265.301(h); add new paragraph addressing how to determine if action leakage rate has been exceeded; unless another calculation approved, average daily flow rate calculated weekly during active life and closure period, and monthly during post-closure care period	265.302(c)					
old 265.302(d) becomes 265.301(i)	265.302(d)					
RESPONSE ACTIONS						
if unit subject to 265.301(a), then must submit a response action plan to the Regional Administrator when submitting 265.302 proposed action leakage rate; must set forth actions to be taken if action leakage rate is exceeded; content as specified in 265.303(b)	265.303(a)					
responsibilities if flow rate into leak detection system exceeds the action leakage rate for any sump:	265.303(b)					
notify Regional Administrator in writing within seven days of determination	265.303(b)(1)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
preliminary assessment to Regional Administrator within 14 days of determination; what assessment must address	265.303(b)(2)					
determine location, size and cause of any leak	265.303(b)(3)					
determine whether 1) waste receipt should cease or be curtailed, 2) waste should be removed for inspection, repairs, or controls, and 3) unit should be closed	265.303(b)(4)					
determine short- and longer-term actions to mitigate or stop any leaks	265.303(b)(5)					
within 30 days after Regional Administrator notification, submit the results of 265.303(b)(3)-(5) analyses, the results of actions taken and actions planned; thereafter, as long as flow rate exceeds action leakage rate, monthly report to Regional Administrator summarizing results of remedial actions taken and actions planned	265.303(b)(6)					
how the 265.303(b)(3), (4) & (5) determinations must be made:	265.303(c)					
assess the source of liquids and amounts by source	265.303(c)(1)(i)					
conduct analyses of liquids in leak detection system to identify sources of liquids and location of leaks, and the hazard and mobility of the liquid	265.303(c)(1)(ii)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
assess seriousness of leaks	265.303(c)(1)(iii)					
document why assessments not needed	265.303(c)(2)					
MONITORING AND INSPECTION						
if leak detection system required under 265.301(a), record amount of liquids removed from each sump, at least weekly during active life and closure period	265.304(a)					
after final cover installed, record amount of liquid at least monthly; when quarterly and semiannual recording allowed; when monthly recording must resume	265.304(b)					
definition of "pump operating level"	265.304(c)					
CLOSURE AND POST-CLOSURE CARE						
redesignate old 265.310(b)(2) as 265.310(b)(3); add new paragraph addressing maintaining and monitoring the leak detection system in accordance with 264.301(c)(3)(iv) & (4), and 265.304(b); comply with other applicable Part 265 leak detection system requirements	265.310(b)(2)	7045.0638, 4, B, (2)	X			
redesignated 265.310(b)(2), (3) & (4) become 265.310(b)(3), (4) & (5)	265.310(b)(3)-(5)					
PART 270 - EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM						
SUBPART A - GENERAL INFORMATION						
EFFECT OF A PERMIT						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
paragraph is reorganized so that requirements not included in a permit are subparagraphs (a)(1)&(2); add a third subparagraph addressing Part 264 requirements regarding leak detection systems for new and replacement surface impoundments, waste piles, landfills and lateral expansion of such units; what the leak detection system requirements include	270.4(a)					
	270.4(a)(1)					
	270.4(a)(2)					
	270.4(a)(3)					SUBPART B - PERMIT APPLICATION
SPECIFIC PART B INFORMATION REQUIREMENTS FOR SURFACE IMPOUNDMENTS						
remove "or will be" after "impoundment is" and insert "and is or will be" after "designed"; insert "264.19," "264.222," and "264.223 of this chapter"; replace the last sentence with the following clause: ", addressing the following items:"	270.17(b)					
redesignate old 270.17(b)(2) as 270.17(b)(6); add new paragraph addressing double liner and leak (leachate) detection, collection and removal system if unit must meet 264.221(c) requirements; submission if seeking 264.221(d), (e) or (f) exemption	270.17(b)(2)					
redesignate old 270.17(b)(3) as 270.17(b)(7); add new paragraph addressing information required if surface impoundment is located in a saturated zone	270.17(b)(3)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
construction quality assurance plan, if required	270.17(b)(4)					
proposed action leakage rate with rationale and response action plan if required	270.17(b)(5)					
redesignated 270.17(b)(2)&(3) became new 270.17(b)(6)&(7)	270.17(b)(6)&(7)					
replace "liner and" with "double liner system, leak detection system"; replace "§ 264.226(a) and (b)" with "§ 264.226(a), (b) and (d) of this chapter"	270.17(c)					
SPECIFIC PART B INFORMATION REQUIREMENTS FOR WASTE PILES						
insert "waste" before "pile"; remove "or will be" after pile is"; insert "and is or will be" after "designed"; insert "264.19" "264.252" and "264.253 of this chapter"; replace last sentence with following clause: "addressing the following items:"	270.18(c)					
redesignate old 270.18(c)(1) as 270.18(c)(1)(i); after parenthetical clause addressing existing portion, insert "if the waste pile must meet the requirements of § 264.251(a) of this chapter"; replace "§ 264.252(b), the owner or operator must submit" with "§ 264.251(b) of this chapter, submit"	270.18(c)(1)(i)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
double liner and leak (leachate) detection, collection, and removal system if must meet 264.251(c) requirements; submission if seeking a 264.251(d), (e) or (f) exemption	270.18(c)(1)(ii)					
information required if leak detection system is located in a saturated zone	270.18(c)(1)(iii)					
construction quality assurance plan if required	270.18(c)(1)(iv)					
proposed action leakage rate with rationale and response action plan if required	270.18(c)(1)(v)					
replace "liner" with "double liner system, leachate collection and removal system, leak detection system, cover system"; replace "264.254(a) and (b)" with "264.254(a), (b) and (c) of this chapter"	270.18(d)					
SPECIFIC PART B INFORMATION REQUIREMENTS FOR LANDFILLS						
remove "or will be" after "landfill is" and insert "and is or will be" after "designed"; insert "264.19" and "264.302 and 264.303 of this chapter"; replace the last sentence with the following clause: ", addressing the following items:"	270.21(b)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
redesignate old 270.21(b)(1) as 270.21(b)(1)(i); remove "and leachate collection and removal system"; add "if the landfill must meet the requirements of §264.301(a) of this chapter" to first sentence; add "of this chapter" after "264.301(b)"; after "alternate" change "design" to "designs"; after "any hazardous" change "constituent" to "constituents"	270.21(b)(1)(i)					
double liner and leak (leachate) detection, collection, and removal system if must meet 264.301(c) requirements; submission if seeking exemption under 264.301(d), (e) or (f)	270.21(b)(1)(ii)					
information required if leak detection system located in a saturation zone	270.21(b)(1)(iii)					
construction quality assurance plan if required	270.21(b)(1)(iv)					
proposed action leakage rate, with rationale and response action plan if required	270.21(b)(1)(v)					
[9] remove "liner and" and insert "double liner system, leachate collection and removal system,"; after "cover system" insert "and appurtenances for control or run-on and run-off,"; replace "264.303(a) and (b)" with "264.303(a), (b), and (c) of this chapter"; in last sentence, replace "should" with "must"	270.21(d)					SUBPART D - CHANGES TO PERMIT

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN GENT	BROADER IN SCOPE
PERMIT MODIFICATION AT THE REQUEST OF THE PERMITTEE						
add the "7. a. & b." entries under "B. General Facility Standards"; add the "6., and 7. a., b. & c." entries under "H. Surface Impoundments"; add the entries "7., and 8. a., b. & c." entries under "J. Landfills and Unenclosed Waste 270.42/Piles"	270.42/Appendix I					

[1] This section is considered to be both a HSWA and a Non-HSWA provision. It is Non-HSWA only to the extent that it applies to the final cover requirements for the Construction Quality Assurance Program.

[2] Note that there is a typographical error in the Federal Register; "COA" should be "CQA."

[3] Note that there is a technical error in the Federal Register; "1x10^{-7}/cm/sec" should be "1x10^{-7}cm/sec."

[4] Note that there are two technical errors in the Federal Register; "1x10/$^{-1}$/cm/sec" should be "1x10^{-1}cm/sec" and 3x10/$^{-4}$/m^{2}sec" should be 3x10^{-4}m^{2}/sec."

[5] Note that there is a typographical error in the Federal Register; "surface impoundment" should be "waste pile."

[6] Note that there is a technical error in the Federal Register; "paragraphs (3)(c)(iii) and (iv)" should be "paragraphs (c)(3)(iii) and (iv)."

[7] Note that there is a typographical error in the Federal Register; "surface impoundment" should be "landfill."

[8] Note that there is a typographical error in the Federal Register; "surface impoundment" should be "waste pile."

[9] Note that in the Federal Register this section is incorrectly designated as 270.21(c).

RCRA REVISION CHECKLIST 108

Toxicity Characteristics Revisions: Technical Corrections
57 FR 30657-30658
July 10, 1992
(RCRA Cluster III, HSWA provisions)

Note: This Revision Checklist corrects errors made at the time of the promulgation of the final Toxicity Characteristic (TC) rule on March 29, 1990 (55 FR 11798; Revision Checklist 74). States that have not adopted Revision Checklist 74 provisions are strongly encouraged to adopt these corrections at the same time that the Revision Checklist 74 provisions are adopted.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART A - GENERAL						
EXCLUSIONS						
i replace "characteristic of EP toxicity, and do not fail the test for" with "toxicity characteristic for any other constituent, and do not exhibit"	261.4(b)(6)(ii)	NA (MN Rules 7045.0120, 1, K omit the CL74 lists of excluded processes. EPA authorized MN for CL74—more stringent)			X	
insert "arsenical-treated" after "discarded"; replace "solely for arsenic" with "for Hazardous Waste Codes D004 through D017"; delete "or reasons," after "reason"	261.4(b)(9)	NA (MN has not exempted treated wood. May in part 7045.0120, 2, but plans to be more stringent).			X	

RCRA REVISION CHECKLIST 108: Toxicity Characteristics Revisions:
Technical Corrections (cont'd)

PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART N - LANDFILLS						
DESIGN REQUIREMENTS						
[ii] replace "EP toxicity characteristics" with "Toxicity Characteristic"; insert ", with EPA Hazardous Waste Number D004 through D017" after "chapter"	265.301(d)(1)	NA (MN Rule 7045.0638, 2, C/D, omits 265.301(d)(1) as MN requires double liners; EPA has authorized CL74 in MN)			X	

There is an error in the Federal Register at 57 FR 30658. "Specific waste" should read "Specific wastes" as found in the 1991 CFR. Note that there is also an error in the July 1, 1991 CFR for this citation; "charactristic of EP" should be "characteristic of EP."

There are several errors in the Federal Register for this citation. First, "such waste does not" should read "such wastes do not" and "261.4 of this chapter" should read "261.24 of this chapter" as they are found in the March 29, 1990 Federal Register and in the 1991 CFR. Second, "Waste Number" should be "Waste Numbers."

RCRA REVISION CHECKLIST 109

Land Disposal Restrictions for Newly Listed Wastes
and Hazardous Debris
57 FR 37194-37282
August 18, 1992
(RCRA Cluster III, HSWA provisions)

Note: This checklist may be subject to change in the future. EPA's State and Regional Programs Branch is currently discussing the relationship of hazardous waste injection issues to the State authorization program. In question are the changes made to 40 CFR Part 148 by the final rule addressed by this checklist and whether they should be included in the checklist. This present checklist does not include these changes.

2) The following Part 268 sections are not delegable to States because of the national concerns that must be examined when decisions are made relative to them: 268.5 (case-by-case effective date extensions); 268.42(b) (application for alternate treatment method); and 268.44 (variance from a treatment standard). "No migration" petitions under 268.6 will be handled by EPA, even though States may be authorized to grant such petitions in the future. States have the authority to grant such petitions under RCRA Section 3006 because such decisions do not require a national perspective, as do decisions under 268.5, 268.42(b) or 268.44. However, EPA has had few opportunities to implement the land disposal restrictions and expects to gain valuable experience and information from reviewing "no-migration" petitions. In the past, the nondelegable sections/paragraphs of the LDR regulations have been omitted from the LDR checklists because States could not assume the authority for them. However, this procedure has led to confusion among the States on how to handle the sections/paragraphs in their code. For this reason, the Agency has decided to include these nondelegable sections on the LDR checklists. To differentiate these sections from the delegable portions of the LDR restrictions, asterisks precede (a single row) and follow (a double row) each nondelegable section.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART A - GENERAL						
DEFINITIONS						
add "containment building"	260.10	7045.0020, 11a	X			
revise "miscellaneous unit"	260.10	7045.0020, 58a	X			
revise "pile"	260.10	7045.0020, 70	X			PART 261 - IDENTIFICATION AND

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
						LISTING OF HAZARDOUS WASTE
SUBPART A - GENERAL						
DEFINITION OF HAZARDOUS WASTE						
insert "of this part" after the first "subpart C"; insert "," before "or unless"; add a sentence addressing the relationship of nonwastewater mixtures and the Part 268 requirements	261.3(a)(2)(iii)	7045.0102, 2, A; however, (iii) became reserved in CL 192B 7045.0214, 3, E, F, G	NA			
split paragraph into two subparagraphs, (C)(*1*)&(*2*), with the second subparagraph addressing the notification for HTMR residues; in first subparagraph, insert ", K062 or F006" after "K061"; replace "(as defined in 40 CFR 260.10(6), (7), and (12))" with "(as defined in paragraphs (6), (7), and (13) of the definition for 'Industrial Furnace' in 40 CFR 260.10)"; replace "identified below" with "identified in the tables in this paragraph"; replace "The generic exclusion levels are:" with a sentence addressing burden of proof for	261.3(c)(2)(ii)(C)(*1*)	7045.0214, 3, E 7045.0214, 3, E, F, G	X			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
persons claiming this exclusion in an enforcement action; replace single table with the two tables indicated at 57 FR 37264						
completely revise requirements addressing notification and certification; one-time notification and certification for K061, K062 or F006 HTMR residues, which meet generic exclusion levels and exhibit no characteristics, that are sent to Subtitle D units; update of notification and certification; annual EPA/State notification; deadline for submission to EPA/State; what the notification must include; certification signed by authorized representative and what it must state	261.3(c)(2)(ii)(C)(*2*)	~~7045.0214, 3, E~~ 7045.0214, 3, E, F, G	X			
add new paragraph and subparagraphs addressing debris that is excluded from regulation provided it meets specified criteria:	261.3(f)	7045.0214, 3, G	X			
Part 268-defined hazardous debris treated using a specified 268.45, Table 1, extraction or destruction technology; burden of proof on claimant in an enforcement action	261.3(f)(1)	7045.0214, 3, G	X			
Part 268-defined debris	261.3(f)(2)	7045.0214, 3, G	X			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
determined by Regional Administrator to no longer be contaminated with hazardous waste						
PART 262 - STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE						
SUBPART C - PRE-TRANSPORT REQUIREMENTS						
ACCUMULATION TIME						
replace ";" at the end of text with a ":"	262.34(a)(1)(iii)	7045.0292, 1, B	X			
replace "." with "; and/or"	262.34(a)(1)(iii)(B)	7045.0292, 1, B	X			
add new subparagraphs addressing waste placed in containment buildings; compliance with 265, Subpart DD; professional engineer certification of compliance with 265.1101 design standards placed in operating record no later than 60 days after the date of initial unit operation; requirements after February 18, 1993; records which must be maintained	262.34(a)(1)(iv)	7045.0292, 1, B MPCA is adopting containment building rules that will apply to permitted facilities; but, not allowing these for generators without a permit.	~~X~~		X MN requires stds in op record B4 operation	
written description of procedures to ensure each waste volume remains in unit for no more than 90 days; written description of waste generation and management practices for the facility showing that they are consistent with respecting the 90 day limit; documentation that procedures are	262.34(a)(1)(iv)(A)	7045.0292, 1, B MPCA is adopting containment building rules that will apply to permitted facilities; but, not allowing these for generators without a permit.	~~X~~		X	

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
complied with						
documentation that unit is emptied at least once every 90 days	262.34(a)(1)(iv)(B)	7045.0292, 1, B MPCA is adopting containment building rules that will apply to permitted facilities; but, not allowing these for generators without a permit.	~~X~~		X	
i remove first paragraph numbered (a)(2) (including (a)(2)(i)&(ii)); remove unnumbered paragraph following (a)(2)(ii)	262.34(a)(2)	7045.0292, 1, B	X			
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART G - CLOSURE AND POST-CLOSURE						
APPLICABILITY						
remove "and" from the end of paragraph	264.110(b)(1)	7045.0490, 1, B	X			
replace "." with ";"	264.110(b)(2)	7045.0490, 1, B	X			
replace "." with "; and"	264.110(b)(3)	7045.0490, 1, C	X			
add new paragraph addressing containment buildings that are required under 264.1102 to meet the requirements for landfills	264.110(b)(4)	7045.0490, 1, B	X			
CLOSURE PERFORMANCE STANDARD						
change ", and 264.601 through 264.603" to ", 264.601 through 264.603, and 264.1102"	264.111(c)	7045.0486, 2	X			
CLOSURE PLAN; AMENDMENT OF PLAN						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
replace "264.90 et seq." with "subpart F of this part"; change "and 264.601" to ", 264.601 and 264.1102"	264.112(a)(2)	7045.0486, 3	X			
SUBPART H - FINANCIAL REQUIREMENTS						
APPLICABILITY						
replace ", and" with ";"	264.140(b)(1)	7045.0498, 1, B	X			
replace "." with ";"	264.140(b)(2)	7045.0498, 1, B	X			
replace "." with "; and"	264.140(b)(3)	7045.0498, 1, C	X			
add new paragraph regarding containment buildings that are required under 264.1102 to meet the requirements for landfills	264.140(b)(4)	7045.0498, 1, D	X			
COST ESTIMATE FOR CLOSURE						
change ", and 264.601 through 264.603" to ", 264.601 through 264.603, and 264.1102"	264.142(a)	7045.0498, 1, B	X			
SUBPART DD - CONTAINMENT BUILDINGS						
APPLICABILITY						
applies to owners/operators storing or treating hazardous waste in units designed and operated under 264.1101; effective February 18, 1993, but may notify Regional Administrator of earlier time; not subject to definition of land disposal in RCRA 3004(k) provided unit:	264.1100	7045.0551	Incorporated by reference (IBR)			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
is a completely enclosed, self-supporting structure designed and constructed as specified	264.1100(a)	7045.0551	IBR			
has a primary barrier designed to withstand movement of personnel, wastes and handling equipment within unit	264.1100(b)	7045.0551	IBR			
if used to manage liquids:	264.1100(c)	7045.0551	IBR			
primary barrier designed and constructed to prevent migration of hazardous constituents into barrier	264.1100(c)(1)	7045.0551	IBR			
liquid collection system to minimize accumulation of liquid on primary barrier	264.1100(c)(2)	7045.0551	IBR			
secondary containment system to prevent hazardous constituent migration into barrier; leak detection and liquid collection as specified; variance under 264.1101(b)(4)	264.1100(c)(3)	7045.0551	IBR			
controls to prevent fugitive dust emissions to meet 264.1101(c)(1)(iv) standards	264.1100(d)	7045.0551	IBR			
designed and operated to ensure containment and prevent tracking of materials from unit by personnel or equipment	264.1100(e)	7045.0551	IBR			

DESIGN AND OPERATING STANDARDS

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
all containment buildings must comply with following design standards:	264.1101(a)	7045.0551	IBR			
completely enclosed as specified	264.1101(a)(1)	7045.0551	IBR			
design and construction of floor, containment walls and secondary containment system; unit of sufficient structural strength to prevent collapse or failure; chemically compatible surfaces; standards for judging structural integrity requirements; when exception for light-weight doors and windows will apply:	264.1101(a)(2)	7045.0551	IBR			
provide effective barrier against fugitive dust emissions under 264.1101(c)(1)(iv)	264.1101(a)(2)(i)	7045.0551	IBR			
unit designed and operated so that wastes do not contact openings	264.1101(a)(2)(ii)	7045.0551	IBR			
no placement of incompatible wastes or treatment reagents that could cause unit or secondary containment system to leak, corrode or otherwise fail	264.1101(a)(3)	7045.0551	IBR			
must have primary barrier designed to withstand movement of personnel, waste and handling equipment in unit during unit	264.1101(a)(4)	7045.0551	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
operating life, as appropriate for waste characteristics						
requirements for hazardous waste containing free liquids or treated with free liquids:	264.1101(b)	7045.0551	IBR			
primary barrier to prevent migration of hazardous constituents into the barrier	264.1101(b)(1)	7045.0551	IBR			
liquid collection and removal system to minimize accumulation of liquid on primary barrier:	264.1101(b)(2)	7045.0551	IBR			
primary barrier sloped to drain liquids to collection system	264.1101(b)(2)(i)	7045.0551	IBR			
liquids and waste collected and removed to minimize hydraulic head on containment system at earliest practicable time	264.1101(b)(2)(ii)	7045.0551	IBR			
secondary containment system to prevent hazardous constituent migration into barrier; leak detection and liquid collection as specified	264.1101(b)(3)	7045.0551	IBR			
what must be installed at a minimum to satisfy leak detection component of secondary containment system	264.1101(b)(3)(i)	7045.0551	IBR			
constructed with 1% or greater bottom slope	264.1101(b)(3)(i)(A)	7045.0551	IBR			
granular, synthetic, or	264.1101(b)(3)(i)(B)	7045.0551	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	geonet drainage materials as specified						
	if treatment conducted in building, treatment area designed to prevent releases to other portions of building	264.1101(b)(3)(ii)	7045.0551	IBR			
	secondary containment construction materials specifications; requirements for use of containment building as tank secondary containment system	264.1101(b)(3)(iii)	7045.0551	IBR			
	for existing units other than 90-day generator units, Regional Administrator delay of secondary containment requirement if demonstrated that unit substantially meets Subpart DD standards; for demonstration, owner/operator must:	264.1101(b)(4)	7045.0551	IBR			
ii	provide written notice by February 18, 1993; what notice must contain	264.1101(b)(4)(i)	7045.0551	IBR			
	respond to Regional Administrator comments within 30 days	264.1101(b)(4)(ii)	7045.0551	IBR			
	if approved, fulfill terms of revised plans	264.1101(b)(4)(iii)	7045.0551	IBR			
	owners and operators of all containment buildings must:	264.1101(c)	7045.0551	IBR			
	use controls and practices to ensure containment of	264.1101(c)(1)	7045.0551	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
hazardous waste within unit; at a minimum:						
maintain primary barrier as specified	264.1101(c)(1)(i)	7045.0551	IBR			
maintain level of stored/treated hazardous waste as specified	264.1101(c)(1)(ii)	7045.0551	IBR			
take measures to prevent tracking of hazardous waste out of unit; equipment decontamination area; rinsate collection and management	264.1101(c)(1)(iii)	7045.0551	IBR			
take measures to control fugitive dust emissions; maintain particulate collection devices as specified; when "no visible emissions" must be maintained	264.1101(c)(1)(iv)	7045.0551	IBR			
certification by qualified registered professional engineer; for units in operation prior to February 18, 1993, certification placed in operating record or on-site files no later than 60 days after date of initial operation; after February 18, 1993, PE certification required prior to operation of unit	264.1101(c)(2)	7045.0551	IBR			
prompt repairs of unit throughout active life as specified, according to the following procedures:	264.1101(c)(3)	7045.0551	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
iii	detection of condition that has led to a release; leakage from primary barrier; owner or operator must:	264.1101(c)(3)(i)	7045.0551	IBR			
	enter record of discovery in facility operating record	264.1101(c)(3)(i)(A)	7045.0551	IBR			
	immediately remove portion of containment building affected by the condition from service	264.1101(c)(3)(i)(B)	7045.0551	IBR			
	determine steps to be taken for repair, remove leakage from secondary collection system and establish schedule for cleanup and repairs	264.1101(c)(3)(i)(C)	7045.0551	IBR			
	within 7 days, notify Regional Administrator of condition; within 14 working days, provide written notice to Regional Administrator; what written notice must include	264.1101(c)(3)(i)(D)	7045.0551	IBR			
	Regional Administrator must review notice, determine extent to which unit must be removed from service during repairs, and notify owner/operator of determination and rationale in writing	264.1101(c)(3)(ii)	7045.0551	IBR			
	written notification to Regional Administrator on completion of repair and cleanup; verification by a qualified, registered professional engineer that repairs and cleanup	264.1101(c)(3)(iii)	7045.0551	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
are in compliance with 264.1101(c)(3)(i)(D) plan						
what must be inspected and recorded in facility's operating records, at least once every seven days	264.1101(c)(4)	7045.0551	IBR			
for containment buildings that contain areas both with and without secondary containment, the owner/operator must:	264.1101(d)	7045.0551	IBR			
design and operate each area in accordance with 264.1101(a)-(c) requirements	264.1101(d)(1)	7045.0551	IBR			
take measures to prevent release of liquids or wet materials into areas without secondary containment	264.1101(d)(2)	7045.0551	IBR			
maintain in facility's operating log a written description of operating procedures used to maintain integrity of areas without secondary containment	264.1101(d)(3)	7045.0551	IBR			
Regional Administrator waiver of secondary containment requirements; what owner/operator must demonstrate	264.1101(e)	7045.0551	IBR			
CLOSURE AND POST-CLOSURE CARE						
what must be done at closure; closure plan,	264.1102(a)	7045.0551	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
closure activities, cost estimates, and financial responsibility must meet all 264 Subpart G & H requirements						
if 264.1102(a) requirements met and not all contaminated subsoils can be removed or decontaminated, close facility and perform post-closure care as for landfill under 264.310; owner/operator must meet 264 Subpart G & H requirements for landfills	264.1102(b)	7045.0551	IBR			
reserved	264.1103-264.1110	7045.0551	IBR			
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART G - CLOSURE AND POST-CLOSURE						
APPLICABILITY						
remove "and" from end of paragraph	265.110(b)(1)	7045.0600, 1	X			
remove "and" from end of paragraph	265.110(b)(2)	7045.0600, 1	X			
replace "." with "; and"	265.110(b)(3)	7045.0600, 1	X			
add new paragraph addressing containment buildings that are required under 265.1102 to meet the requirements for landfills	265.110(b)(4)	7045.0600, 1	X			
CLOSURE PERFORMANCE STANDARD						
iv change "and 265.404" to ", 265.404, and	265.111(c)	7045.0594, 2	X			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	264.1102"						
	CLOSURE PLAN; AMENDMENT OF PLAN						
4,v	replace "§§ 265.90 et seq." with "subpart F of this part, §§"; change ", and 265.404" to ", 265.404, and 264.1102"	265.112(d)(4) 265.118(f)	~~7045.0600, 2, D~~ 7045.0594, 3, A, (1) 7045.0600, 2, D	X			SUBPART H - FINANCIAL REQUIREMENTS
	APPLICABILITY						
	265.144 and 265.146 apply only to owners and operators of:	265.140(b)	7045.0608, 1	X			
	disposal facilities	265.140(b)(1)	7045.0608, 1	X			
	tank systems required to meet landfill requirements under 264.197	265.140(b)(2)	7045.0608, 1	X			
	containment buildings required to meet landfill requirements	265.140(b)(3)	7045.0608, 1	X			
	COST ESTIMATE FOR CLOSURE						
	replace "of §§ 265.178" with "in §§ 265.178"; change "and 265.404" to ", 265.404 and 265.1102"	265.142(a)	7045.0610, 1	X			SUBPART K - SURFACE IMPOUNDMENTS
	DESIGN AND OPERATING REQUIREMENTS						
	add new paragraph regarding surface impoundments newly subject to RCRA §3005(j)(1) must be in compliance with	265.221(h)	7045.0630, 2	X			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
265.221(a),(c)&(d) no later than 48 months after additional characteristic or listing promulgation; Part 268 land disposal prohibitions or an extension to an effective date, within the 48-month period, shall not cut short compliance period						
SUBPART DD - CONTAINMENT BUILDINGS						
APPLICABILITY						
applies to owners/operators storing or treating hazardous waste in units designed and operated under 265.1101; effective February 18, 1993, but may notify Regional Administrator of earlier time; not subject to definition of land disposal in RCRA 3004(k) provided unit:	265.1100	7045.0650	IBR			
is a completely enclosed, self supporting structure designed and constructed as specified	265.1100(a)	7045.0650	IBR			
has a primary barrier designed to withstand movement of personnel, wastes and handling equipment within unit	265.1100(b)	7045.0650	IBR			
if used to manage liquids:	265.1100(c)	7045.0650	IBR			
primary barrier designed	265.1100(c)(1)	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
and constructed to prevent migration of hazardous constituents into barrier						
liquid collection system to minimize accumulation of liquid on primary barrier	265.1100(c)(2)	7045.0650	IBR			
secondary containment system to prevent hazardous constituent migration into barrier; leak detection and liquid collection as specified; variance under 265.1101(b)(4)	265.1100(c)(3)	7045.0650	IBR			
vi controls to prevent fugitive dust emissions	265.1100(d)	7045.0650	IBR			
designed and operated to ensure containment and prevent tracking of materials from unit by personnel or equipment	265.1100(e)	7045.0650	IBR			
DESIGN AND OPERATING STANDARDS						
all containment buildings must comply with following design standards:	265.1101(a)	7045.0650	IBR			
completely enclosed as specified	265.1101(a)(1)	7045.0650	IBR			
design and construction of floor, containment walls and secondary containment system; unit of sufficient structural strength to prevent collapse or failure; chemically compatible surfaces; standards for judging	265.1101(a)(2)	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
structural integrity requirements; when exception for light-weight doors and windows will apply:						
provide effective barrier against fugitive dust emissions under 265.1101(c)(1)(iv)	265.1101(a)(2)(i)	7045.0650	IBR			
unit designed and operated so that wastes do not contact openings	265.1101(a)(2)(ii)	7045.0650	IBR			
no placement of incompatible wastes or treatment reagents that could cause unit or secondary containment system to leak, corrode or otherwise fail	265.1101(a)(3)	7045.0650	IBR			
must have primary barrier designed to withstand movement of personnel, waste and handling equipment in unit during unit operating life, as appropriate for waste characteristics	265.1101(a)(4)	7045.0650	IBR			
requirements for hazardous waste containing free liquids or treated with free liquids:	265.1101(b)	7045.0650	IBR			
primary barrier to prevent migration of hazardous constituents into the barrier	265.1101(b)(1)	7045.0650	IBR			
liquid collection and removal system to prevent accumulation of liquid on primary barrier:	265.1101(b)(2)	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
primary barrier sloped to drain liquids to collection system	265.1101(b)(2)(i)	7045.0650	IBR			
liquids and waste collected and removed to minimize hydraulic head on containment system at earliest practicable time to protect human health and environment	265.1101(b)(2)(ii)	7045.0650	IBR			
secondary containment system to prevent hazardous constituent migration into barrier; leak detection and liquid collection as specified	265.1101(b)(3)	7045.0650	IBR			
what must be installed at a minimum to satisfy leak detection component of secondary containment system	265.1101(b)(3)(i)	7045.0650	IBR			
construct with 1% or greater bottom slope	265.1101(b)(3)(i)(A)	7045.0650	IBR			
granular, synthetic, or geonet drainage materials as specified	265.1101(b)(3)(i)(B)	7045.0650	IBR			
if treatment conducted in building, treatment area designed to prevent releases to other portions of building	265.1101(b)(3)(ii)	7045.0650	IBR			
secondary containment construction materials specifications; requirements for use of containment building as tank secondary containment system	265.1101(b)(3)(iii)	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
for existing units other than 90-day generator units, Regional Administrator delay of secondary containment requirement if demonstrated that unit substantially meets Subpart DD standards; for demonstration, owner/operator must:	265.1101(b)(4)	7045.0650	IBR			
provide written notice by February 18, 1993; what notice must contain	265.1101(b)(4)(i)	7045.0650	IBR			
respond to Regional Administrator comments within 30 days	265.1101(b)(4)(ii)	7045.0650	IBR			
if approved, fulfill terms of revised plans	265.1101(b)(4)(iii)	7045.0650	IBR			
owners and operators of all containment buildings must:	265.1101(c)	7045.0650	IBR			
use controls and practices to ensure containment of hazardous waste within unit; at a minimum:	265.1101(c)(1)	7045.0650	IBR			
maintain primary barrier as specified	265.1101(c)(1)(i)	7045.0650	IBR			
maintain level of stored/treated hazardous waste as specified	265.1101(c)(1)(ii)	7045.0650	IBR			
take measures to prevent tracking of hazardous waste out of unit; equipment decontamination area; rinsate collection and management	265.1101(c)(1)(iii)	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
take measures to control fugitive dust emissions; maintain particulate collection devices as specified; when "no visible emissions" must be maintained	265.1101(c)(1)(iv)	7045.0650	IBR			
certification by qualified registered professional engineer; for units in operation prior to February 18, 1993, certification placed in operating record or on-site files no later than 60 days after date of initial operation; after February 18, 1993, PE certification required prior to operation of unit	265.1101(c)(2)	7045.0650	IBR			
prompt repairs of unit throughout active life, according to the following procedures:	265.1101(c)(3)	7045.0650	IBR			
detection of condition that has led to a release; leakage from primary barrier; owner or operator must:	265.1101(c)(3)(i)	7045.0650	IBR			
enter record of discovery in facility operating record	265.1101(c)(3)(i)(A)	7045.0650	IBR			
immediately remove portion of containment building affected by the condition from service	265.1101(c)(3)(i)(B)	7045.0650	IBR			
determine steps to be taken for repair; remove leakage from secondary collection system and	265.1101(c)(3)(i)(C)	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
establish schedule for cleanup and repairs						
within 7 days, notify Regional Administrator of condition; within 14 working days, provide written notice to Regional Administrator; what written notice must include	265.1101(c)(3)(i)(D)	7045.0650	IBR			
Regional Administrator must review notice, determine extent to which unit must be removed from service during repairs, and notify owner/operator of determination and rationale in writing	265.1101(c)(3)(ii)	7045.0650	IBR			
written notification of Regional Administrator on completion of repair and cleanup; verification by a qualified, registered professional engineer that repairs and cleanup are in compliance with 265.1101(c)(3)(i)(D) plan	265.1101(c)(3)(iii)	7045.0650	IBR			
what must be inspected and recorded in facility's operating records, at least once every seven days	265.1101(c)(4)	7045.0650	IBR			
for containment building that contains both areas with and without secondary containment, the owner/operator must:	265.1101(d)	7045.0650	IBR			
design and operate each area in	265.1101(d)(1)	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
accordance with 265.1101(a)-(c) requirements						
take measures to prevent release of liquids or wet materials into areas without secondary containment	265.1101(d)(2)	7045.0650	IBR			
maintain in facility's operating log a written description of operating procedures used to maintain integrity of areas without secondary containment	265.1101(d)(3)	7045.0650	IBR			
Regional Administrator waiver of secondary containment requirements; what owner/operator must demonstrate	265.1101(e)	7045.0650	IBR			CLOSURE AND POST-CLOSURE CARE
what must be done at closure; closure plan, closure activities, cost estimates, and financial responsibility must meet all 265 Subparts G & H requirements	265.1102(a)	7045.0650	IBR			
if 265.1102(a) requirements met and not all contaminated soils can be removed or decontaminated, close facility and perform post-closure care as for landfill under 265.310; owner/operator must meet 265 Subparts G & H requirements for landfills	265.1102(b)	7045.0650	IBR			
reserved	265.1103-265.1110	7045.0650	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART A – GENERAL						
DEFINITIONS APPLICABLE IN THIS PART						
remove definition of "inorganic solid debris"; add new paragraph defining "debris"	268.2(g)	7045.1390 MPCA rejects allowing Hg debris/hazardous debris in landfills	IBR		X	
add new paragraph defining "hazardous debris"	268.2(h)	7045.1390 MPCA rejects allowing Hg debris/hazardous debris in landfills	IBR		X	******** ******** ******** ******** ******** ******** ******** ******** Guidance note: 268.5 is NOT DELEGABLE. States should see Note 2 at the beginning of this checklist regarding how to incorporate this section into their code.
PROCEDURES FOR CASE-BY-CASE EXTENSIONS TO AN EFFECTIVE DATE						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
replace";" with "; or" at the end of the paragraph	268.5(h)(2)(ii)	7045.1390	IBR			
replace "." with "; or" at the end of the paragraph	268.5(h)(2)(iv)	7045.1390	IBR			
redesignate old 268.5(h)(2)(v) as 268.5(h)(2)(vi); add new paragraph addressing surface impoundments newly subject to RCRA 3006(j)(1); compliance with 265 Subpart F within 12 months and with 265.221(a), (c), and (d) within 48 months; effect of a national capacity variance	268.5(h)(2)(v)	7045.1390	IBR			
old 268.5(h)(2)(v) becomes new 268.5(h)(2)(vi)	268.5(h)(2)(vi)	7045.1390	IBR			
**********						
**********						
WASTE ANALYSIS AND RECORDKEEPING						
remove "and" from end of subparagraph	268.7(a)(1)(iii)	7045.1390	IBR			
vii redesignate old 268.7(a)(1)(iv) as 268.7(a)(1)(v); add new subparagraph addressing, for hazardous debris, the contaminants subject to treatment as provided by 268.45(b); statement that must be used	268.7(a)(1)(iv)	7045.1390	IBR			
old 268.7(a)(1)(iv) becomes 268.7(a)(1)(v)	268.7(a)(1)(v)	7045.1390	IBR			
add sentence to end addressing generators of hazardous debris that	268.7(a)(2)	7045.1390	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	is excluded from the definition of hazardous waste under 261.3(e)(2)						
	remove "and" from end of subparagraph	268.7(a)(3)(iv)	7045.1390	IBR			
viii	redesignate old 268.7(a)(3)(v) as 268.7(a)(3)(vi); add new subparagraph addressing, for hazardous debris, the contaminants subject to treatment as provided by 268.45(b); statement which must be used	268.7(a)(3)(v)	7045.1390	IBR			
8	old 268.7(a)(3)(v) becomes 268.7(a)(3)(vi)	268.7(a)(3)(vi)	7045.1390	IBR			
ix	in two places, replace "tanks or containers" with "tanks, containers, or containment buildings"; before the last sentence, insert a parenthetical sentence addressing generators treating hazardous debris under alternative treatment standards of Table 1, 268.45	268.7(a)(4)	7045.1390	IBR			
	add clause addressing debris excluded from the hazardous waste definition at 261.3(e), which is subject to notification and certification under 268.7(d)	268.7(b)(4)	7045.1390	IBR			
	add sentence addressing debris excluded from the definition of hazardous waste under 261.3(e),	268.7(b)(5)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
which is subject to notification and certification under 268.7(d)						
notification and certification requirements for generators or treaters who first claim that hazardous debris is excluded from the definition of hazardous waste under 261.3(e)	268.7(d)	7045.1390	IBR			
one-time notification including specified information	268.7(d)(1)	7045.1390	IBR			
	268.7(d)(1)(i)	7045.1390	IBR			
	268.7(d)(1)(ii)	7045.1390	IBR			
	268.7(d)(1)(iii)	7045.1390	IBR			
when notification must be updated	268.7(d)(2)	7045.1390	IBR			
how the owner or operator must document and certify compliance with Table 1, 268.45 treatment standards	268.7(d)(3)	7045.1390	IBR			
	268.7(d)(3)(i)	7045.1390	IBR			
	268.7(d)(3)(ii)	7045.1390	IBR			
	268.7(d)(3)(iii)	7045.1390	IBR			
SPECIAL RULES REGARDING WASTES THAT EXHIBIT A CHARACTERISTIC						
revise paragraph after "no longer hazardous"; place one-time notification and certification in generator's/treater's files and send to EPA region or authorized State; when notification and certification must be updated; annual EPA/State notification if such changes occur, by	268.9(d)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
December 31						
remove "The" at beginning of subparagraph	268.9(d)(1)(i)	7045.1390	IBR			
remove text after "Hazardous Waste Number(s)"; add "and treatability group(s);"	268.9(d)(1)(ii)	7045.1390	IBR			
remove "initial"	268.9(d)(1)(iii)	7045.1390	IBR			
replace "268.7(b)(5)(1)" with "268.7(b)(5)"	268.9(d)(2)	7045.1390	IBR			
x SUBPART B - SCHEDULE FOR LAND DISPOSAL PROHIBITION AND ESTABLISHMENT OF TREATMENT STANDARDS						
SURFACE IMPOUNDMENT EXEMPTIONS						
defines additional circumstances in which prohibited waste may continue to be placed in a surface impoundment	268.14(a)	7045.1390	IBR			
continued storage of "newly identified waste" in newly regulated impoundment for 48 months after the promulgation of the additional listing or characteristic, provided waste is not otherwise prohibited and impoundment is in compliance with 265, Subpart F within 12 months after new listing/characteristic promulgation	268.14(b)	7045.1390	IBR			
continue treatment of "newly identified waste" in newly regulated impoundment, provided waste is not otherwise	268.14(c)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
prohibited and surface impoundment is in compliance with 265, Subpart F within 12 months after new listing/characteristic promulgation						
SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS - NEWLY LISTED WASTES						
effective November 9, 1992, K107, K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126, K131, K132, K136, U328, U353 and U359 prohibited from land disposal	268.36(a)	7045.1390	IBR			
effective June 30, 1993, F037 and F038 not generated from surface impoundment cleanouts or closures are prohibited from land disposal	268.36(b)	7045.1390	IBR			
effective June 30, 1994, F037 and F038 generated from surface impoundment cleanout or closures are prohibited from land disposal	268.36(c)	7045.1390	IBR			
effective June 30, 1994, radioactive wastes mixed with specified wastes are prohibited from land disposal	268.36(d)	7045.1390	IBR			
effective June 30, 1994, debris contaminated with specified wastes and not contaminated	268.36(e)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
with other prohibited waste are prohibited from land disposal						
under what circumstances 268.36(b) wastes may be disposed in a landfill or generated and disposed in a surface impoundment	268.36(f)	7045.1390	IBR			
under what circumstances 268.36(d) and (e) wastes may be disposed in a landfill or generated and disposed in a surface impoundment	268.36(g)	7045.1390	IBR			
under what circumstances 268.36 (a)-(e) do not apply	268.36(h)	7045.1390	IBR			
	268.36(h)(1)	7045.1390	IBR			
	268.36(h)(2)	7045.1390	IBR			
	268.36(h)(3)	7045.1390	IBR			
	268.36(h)(4)	7045.1390	IBR			
how to determine whether a 268.36 waste exceeds a 268.41 or 268.43 treatment standard; waste prohibited and all Part 268 requirements apply if constituents in excess of applicable levels	268.36(i)	7045.1390	IBR			
SUBPART D - TREATMENT STANDARDS						
APPLICABILITY OF TREATMENT STANDARDS						
add clause addressing hazardous debris after "268.42(a)"	268.40(b)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
if 268.41 through 268.48 treatment standard established and waste is a hazardous debris, then waste subject to those standards rather than the 268.45 hazardous debris standards	268.40(d)	7045.1390	IBR			TREATMENT STANDARDS EXPRESSED AS CONCENTRATIONS IN WASTE EXTRACT
after "exceeded", replace "by" with "in"; after "treatment residual," replace "developed" with "extracted"; replace "Appendix I" with "appendix I"; after "of this part", replace "of" with "for"; remove clause addressing D004, D008, D031, K084, K101, K102, P010, P011, P012, P036 and U136; remove parenthetical sentence; in last sentence, remove "unless otherwise noted in the following Table CCW"	268.41(a)	7045.1390	IBR			
amend Table CCWE by revising the "F001-F005 spent solvents" entry; removing entries for "K061 (Low Zinc Subcategory - less than 15% Total Zinc)" and for "K061 (High Zinc	268.41(a)/Table CCWE	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Subcategory - greater than 15% Total Zinc) - Effective until August 7, 1991"; and by adding entries for "F037", F038" and "K061" as shown at 57 FR 37272						
add paragraph addressing treatment standards for constituents in F001-F005 listed in Table CCWE	268.41(c)	7045.1390	IBR			
TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES						
add entries for K107, K108, K109, K110, K112, K123, K124, K125, K126, U328, U353 and U359 as shown at 57 FR 37273	268.42/Table 2	7045.1390	IBR			
**********						
Guidance note: 268.42(b) is NOT DELEGABLE. States should see Note 2 at the beginning of this checklist regarding how to incorporate this paragraph into their code.						
replace "achievable" with "achieved"; after the first occurrence of "(a), (c) and (d) of this section" add "for wastes or specified in Table 1 of §268.45 for hazardous debris"; after the second occurrence of "(a), (c) and (d) of this section" add "for wastes or in Table 1 of §268.45 for hazardous debris"	268.42(b)	7045.1390	IBR			******** ******** ******** ******** ******** ******** ******** ******** ******* ******** ******** ******** ******** ******** ******** *******
change the first occurrence of "§268.41, §268.43" to "§§268.41 or 268.43"; change the second occurrence of "§268.41, §268.43" to	268.42(d)	7045.1390	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	"§§268.41, 268.43"; add sentence addressing hazardous debris containing radioactive waste						
	TREATMENT STANDARDS EXPRESSED AS WASTE CONCENTRATIONS						
xi	revise entries for F001-F005 spent solvents, K015, K016, K018, K019, K020, K023, K024, K028, K030, K043, K048, K049, K050, K051, K052, K087, K093, K094, U028, U069, U088, U102, U107 and U190; remove U042 entry; add entries for F037, F038, K111, K117, K118, K131, K132 and K136 as shown at 57 FR 37274-37277	268.43/Table CCW	7045.1390	IBR			TREATMENT STANDARDS FOR HAZARDOUS DEBRIS
	treatment of hazardous debris prior to land disposal as specified unless EPA determines under 261.3(e)(2) that debris is no longer contaminated with hazardous waste	268.45(a)	7045.1390	IBR			
	general; treatment for each 268.45(b) contaminant subject to treatment in accordance with 268.45, Table 1	268.45(a)(1)	7045.1390	IBR			
	characteristic debris; deactivation as specified in 268.45, Table 1	268.45(a)(2)	7045.1390	IBR			
	mixtures of debris types; standards for each	268.45(a)(3)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
debris type must be achieved; if applicable, immobilization must be used last						
mixtures of 268.45(b) contaminant types; 268.45, Table 1 treatment for each contaminant must be used; if applicable, immobilization must be used last	268.45(a)(4)	7045.1390	IBR			
waste PCBs; hazardous debris subject to both 40 CFR 761 and 268.45 must meet more stringent requirements	268.45(a)(5)	7045.1390	IBR			
hazardous debris treated for each "contaminant subject to treatment," determined as follows:	268.45(b)	7045.1390	IBR			
toxicity characteristic debris; those EP constituents for which debris exhibits a toxicity characteristic	268.45(b)(1)	7045.1390	IBR			
debris contaminated with listed waste; constituents for which BDAT standards are established for wastes under 268.41 and 268.43	268.45(b)(2)	7045.1390	IBR			
cyanide reactive debris; reactive because of cyanide must be treated for cyanide	268.45(b)(3)	7045.1390	IBR			
when hazardous debris that has been treated is not considered a	268.45(c)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
hazardous waste; hazardous debris contaminated with a listed waste that is treated by a Table 1 immobilization technology must be managed in a Subtitle C facility						
general requirements for treatment residues:	268.45(d)(1)	7045.1390	IBR			
separate residue from debris by simple physical or mechanical means;	268.45(d)(1)(i)	7045.1390	IBR			
residue is subject to 268 Subpart D waste-specific treatment standards	268.45(d)(1)(ii)	7045.1390	IBR			
residue from nontoxic debris, as specified, must be deactivated; not subject to 268 Subpart D waste-specific treatment standards	268.45(d)(2)	7045.1390	IBR			
residue from cyanide-reactive debris must meet 268.43, D003 standards	268.45(d)(3)	7045.1390	IBR			
ignitable nonwastewater residue, as specified, must meet technology-based "D001 Ignitable Liquids" standard	268.45(d)(4)	7045.1390	IBR			
layers of debris removed by spalling remain subject to 268.45 treatment standards	268.45(d)(5)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
alternative treatment standards for hazardous debris	268.45/Table 1	7045.1390	IBR			
ALTERNATIVE TREATMENT STANDARDS BASED ON HTMR						
Table 1 identifies alternative treatment standards for F006 and K062 nonwastewaters	268.46	7045.1390	IBR			
alternative treatment standards as shown at 57 FR 37281	268.46/Table 1	7045.1390	IBR			
SUBPART E - PROHIBITIONS ON STORAGE						
PROHIBITIONS ON STORAGE OF RESTRICTED WASTES						
remove "or" from between "tanks" and "containers"; after containers add "or containment buildings"; insert "and parts 264 and 265" after "262.34"; remove parenthesized sentence	268.50(a)(1)	7045.1390	IBR			
remove "or" between "tanks" and "containers" and add "or containment buildings" after "containers"	268.50(a)(2)	7045.1390	IBR			
APPENDIX II to PART 268						
TREATMENT STANDARDS (AS CONCENTRATIONS IN THE TREATMENT RESIDUAL EXTRACT)						
remove table; replace with note indicating that F001-F005 spent solvent waste treatment standards appear in 268.41, 268.42 and 268.43	Appendix II	7045.1390	IBR			
PART 270 - EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
SUBPART B - PERMIT APPLICATION						
CONTENTS OF PART A OF THE PERMIT APPLICATION						
for hazardous debris, description of debris category(ies) and contaminant category(ies) to be treated, stored or disposed of at facility	270.13(n)	MN not adopting now; would be this cite: 7001.0550, K	~~X~~		X	
CONTENTS OF PART B: GENERAL REQUIREMENTS						
insert "and hazardous debris" after "hazardous waste"; insert "of this chapter" after "part 264"	270.14(b)(2)	MN not adopting now; would be this cite: 7001.0560, B	~~X~~		X	SUBPART D - CHANGES TO PERMITS
PERMIT MODIFICATIONS AT THE REQUEST OF THE PERMITTEE						
replace "of restricted wastes" with ", or in containment buildings"	270.42(e)(3)(ii)(B)	7001.0650, 4, D	X			
APPENDIX I TO SECTION 270.42						
CLASSIFICATION OF PERMIT MODIFICATION						
add entry 6 to section I	270.42 Appendix I, I(6)	Not in MN Rule	X			
add new section M	270.42 Appendix I, M	Not in MN Rule	X			
SUBPART G - INTERIM STATUS						
CHANGES DURING INTERIM STATUS						
remove "or" before "containers" and insert "or containment buildings" after "containers"; in two places, insert "of this chapter" after "Part 268"	270.72(b)(6)	7001.0650, 5, F, (6)	X			

---

i This revision fixes an error in the July 1, 1991 CFR which makes it appear that there are two paragraphs designated as 262.34(a)(2) (see the editorial note in the CFR). Revision Checklist 82 originally inserted the first 262.34(a)(2), 262.34(a)(2)(i), 262.34(a)(2)(ii) and redesignated the old 262.34(a)(2)-(4) as 262.34(a)(3)-(5). However, Revision Checklist 92 redesignated 262.34(a)(3) as 262.34(a)(2), effectively removing the first 262.34(a)(2) and incorporating these requirements into 262.34(a)(1) at 262.34(a)(1)(iii) and (iii)(A)&(B). It was not the Agency's intent to include these requirements both at 262.34(a)(1)(iii)(A)&(B) and at 262.34(a)(2) as is indicated in the July 1, 1991 CFR. The first 262.34(a)(2) in that CFR should not be in the code. Revision Checklist 92 also redesignated 262.34(a)(3)-(5) as 262.34(a)(2)-(4), i.e., returned these subparagraphs to their original numbering prior to the redesignation by Revision Checklist 82. The revision, which is part of Revision Checklist 109, removes the first 262.34(a)(2), returning the code to what was intended by Checklist 92.

ii Note that there is an error in the Federal Register; the deadline for the written notice should be February 18, 1993, rather than November 16, 1992 as it appears in the Federal Register, in keeping with the effective date of these provisions, with the preamble to the rule at 57 FR 37215 (second full paragraph in the right-hand column), and with the similar provision under 265.1101(b)(4)(i).

iii Note that there is a typographical error in the Federal Register; "lead" should be "led."

iv There is a typographical error in the Federal Register article for this rule. The internal reference to "264.1102" should be to "265.1102".

v Note that the Federal Register for this rule introduces an error into the second-to-last sentence of this subparagraph by inserting an extraneous "with" between "§§" and "265.111."

vi Note there is an error in the Federal Register article for this rule. The phrase "as needed to permit" should read "as needed to prevent."

vii Note there is a typographical error in the Federal Register article for this checklist. The instructions preceding 268.7 (on page 57 FR 37270) incorrectly say that 268.7(a)(1)(v) is added. It is a new 268.7(a)(1)(iv) which is added, and the old 268.7(a)(1)(iv) is redesignated as 268.7(a)(1)(v).

viii Note that there is a typographical error in the Federal Register article for this checklist. The instructions preceding 268.7 (on page 57 FR 37270) incorrectly say 268.7(a)(3)(vi) is added. It is a new 268.7(a)(3)(v) which is added and the old 268.7(a)(3)(v) is redesignated as 268.7(a)(3)(vi).

ix Note that there is a typographical error in the Federal Register article for this checklist; there should be a comma, not a semicolon, after the second occurrence of "containers" in 268.7(a)(4).

x The addition of 268.14 to Federal code means that Subpart B of Part 268 is relevant to the States for the first time. The other sections of code in Subpart B, 268.10 through 268.13, contain the schedule by which EPA must evaluate wastes for land disposal restrictions. As such, States do not need requirements equivalent to 268.10 through 268.13. The surface impoundment exemptions of 268.14, however, address the length of time interim status impoundments can be used to receive or generate newly identified or listed hazardous wastes and resolve the potential conflicts between RCRA §§3004(h)(4), 3004(j)(6) and 3004(j)(11) [see the discussion in the Federal Register for this rule, pp. 37218-37221]. Therefore, States must adopt requirements analogous to 268.14(a)-(c).

xi Note there are two different entries in Table CCW for K030. Because there isn't an entry for K043, likely the second "K030" should read "K043." Also, the Federal Register adds an entry for K111, but this is not noted in the revision instructions for the table.

RCRA REVISION CHECKLIST 110

Coke By-Products Listings
57 FR 37284-37306
August 18, 1992
(RCRA Cluster III, HWSA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART A - GENERAL						
† EXCLUSIONS						
replace "No. K087" with "Nos. K060, K087, K141, K142, K143, K144, K145, K147 and K148"; replace "Section" with "section"; insert comma after "of this part"; replace "tar or are" with "tar, or"; replace "refining process" with "recovery or refining processes, or mixed with coal tar"	261.4(a)(10)	7045.0125,4,F	X			
SUBPART D - LISTS OF HAZARDOUS WASTES						
HAZARDOUS WASTES FROM SPECIFIC SOURCES						
add K141-K145, K147 and K148 in alphanumeric order to the subgroup "Coking" as specified at 57 FR 37305	261.32	7045.0135, 1a, C	IBR			

RCRA REVISION CHECKLIST 110: Coke-By-Products Listings (cont'd)

APPENDIX VII TO PART 261						
BASIS FOR LISTING HAZARDOUS WASTE						
add K141-K145, K147 and K148 in alphanumeric order as specified at 57 FR 37305	261, Appendix VII	~~7045.0135, 1a, M~~ 7045.0150, 1, D	IBR			

Formatted: Underline

RCRA REVISION CHECKLIST 113

Consolidated Liability Requirements
53 FR 33938-33960
September 1, 1988
56 FR 30200
July 1, 1991
57 FR 42832-42844
September 16, 1992
(RCRA Cluster III, Non-HSWA provisions)

Notes: I.) This special consolidated checklist addresses changes made to the Federal code by the September 1, 1988 final rule (53 FR 33938, withheld Revision Checklist 51) as well as amendments made by the July 1, 1991 (56 FR 30200, withheld Revision Checklist 93) and the September 16, 1992 (57 FR 42832) final rules. The September 1, 1988 rule was the subject of litigation and its checklist, Revision Checklist 51, was withheld by EPA to encourage States not to adopt those changes until a final settlement agreement could be reached and implemented. The July 1, 1991 and September 16, 1992 rules were promulgated to make the revisions mandated by the settlement agreement. Now that all requirements of the settlement agreement have been met, EPA is issuing this Consolidated Liability Requirements Checklist to aid States in correctly adopting the changes made by these three rules.

Revision Checklists 51 and 93 will not be issued individually. Rather, States should use this Consolidated Liability Requirements Checklist to adopt the provisions of the three final rules. States that have already adopted changes based on the September 1, 1988 final rule are strongly encouraged to complete this consolidated checklist to ensure that all revisions pursuant to the two amendments are correctly made in the State's code. Note that the deadline for this consolidated checklist is July 1, 1994, based on the promulgation date of the most recent of the amendments.

II.) In the September 1, 1988 final rule, all changes were classified as less stringent and, therefore, optional with regard to State adoption. Note that, as part of the settlement agreement with Chemical Waste Management, Inc., the claims reporting requirements were reclassified as more stringent and, therefore, required for State adoption. Only those changes marked as optional (†) in this consolidated checklist should be considered less stringent provisions. The September 16, 1992 rule modified the claims reporting requirements (264.147(a)(7)&(b)(7) and 265.147(a)(7)&(b)(7)) and they are less stringent than the claim reporting requirements promulgated in the September 1, 1988 rule. Thus, States which have already adopted the September 1, 1988 provisions are not required to adopt the "clarified" reporting requirements of the September 16, 1992 rule, although EPA strongly encourages them to do so. States that did not adopt the September 1, 1988 claims reporting requirements should not do so but should, instead, adopt the clarified September 16, 1992 version included in this consolidated checklist.

III.) This checklist includes a "rule" reference column. To simplify references to the three rules addressed by this checklist, "51" will signify the September 1, 1988 rule, "93" will signify the July 1, 1991 rule, and "113" will indicate the September 16, 1992 rule.

IV.) There were several typographical errors in the September 1, 1988 Federal Register article. These are explained in endnotes in this consolidated checklist.

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

V.) The optional designation (†) is placed in the margin of the consolidated checklist if a checklist introduced a new optional paragraph into the Federal code. If a checklist addresses optional changes to an existing paragraph, the optional designation is placed beside the corresponding checklist number.

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
					EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES							
	SUBPART H - FINANCIAL REQUIREMENTS							
	DEFINITIONS OF TERMS AS USED IN THIS SUBPART							
†	add new paragraph defining "substantial business relationship"	51	264.141(h)	Not adopted			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

FINANCIAL ASSURANCE FOR CLOSURE							
remove "hereafter referred to as `corporate guarantee'" from first sentence; insert "direct or higher-tier" before "parent corporation"; add phrase regarding sibling firms and firms with substantial business relationships to end of second sentence; remove "corporate" before "guarantee" in three places; insert "certified copy of the" before "guarantee must accompany"; add text regarding letter from guarantor's chief financial officer and what the letter must describe	†113	264.143(f)(10) 264.143(f)(10)(i) 264.143(f)(10)(ii) 264.143(f)(10)(iii)	7045.0504, 7, L 7045.0504, 7, L, (1) 7045.0504, 7, L, (2) 7045.0504, 7, L, (3) Not adopted			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

FINANCIAL ASSURANCE FOR POST-CLOSURE CARE							
replace "of" with "for" in the first sentence; remove "hereafter referred to as 'corporate guarantee'"; insert "direct or higher-tier" before "parent corporation"; add phrase regarding sibling firms and firms with substantial business relationships to end of second sentence; remove "corporate" before "guarantee" in three places; insert "A certified copy of" after "§ 264.151(h)."; change "The corporate" to "the corporate"; add text regarding letter from guarantor's chief financial officer and what the letter must describe	†113	264.145(f)(11)	7045.0508, 7, M, optional language not adopted			X	
LIABILITY REQUIREMENTS							
delete "in one of three ways"; replace "and (3)" with "(3), (4), (5), or (6)"	†51	264.147(a)	7045.0518, 1	X			
insert "or" after "owner"; delete "corporate" before "guarantee"; change "paragraph (g)" to "paragraphs (f) and (g)"	†51,93	264.147(a)(2)	7045.0518, 1, B optional language not adopted			X	
replace existing paragraph; requirements may be	†51	264.147(a)(3)	7045.0518, 1, C			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	met by obtaining letter of credit for liability coverage							
†	add new paragraph; requirements may be met by obtaining surety bond for liability coverage	51	264.147(a)(4)	7045.0518, 1, surety bonds for liability not allowed in MN			X	
†	add new paragraph; requirements may be met by obtaining trust fund for liability coverage	51	264.147(a)(5)	7045.0518, 1, D	X			
†	add new paragraph; liability coverage may be demonstrated by combination of financial mechanisms; amount of coverage must total at least the minimum amounts required by 264.147; specification of "primary" and "excess" coverage	51	264.147(a)(7)	7045.0518, 1, E (no surety bonds)			X	
ii	add and amend new paragraph; notify Regional Administrator in writing whenever:	51,113	264.147(a)(7)	7045.0518, 1, F	X			
Error! Bookmark not defined.	add and amend new subparagraph; claims reduce amount of financial assurance for liability coverage	51,113	264.147(a)(7)(i)	7045.0518, 1, F, (1)	X		X	
Error! Bookmark not defin	Certification of Valid Claim for bodily injury or property damages caused by sudden or non-sudden accidental occurrence is entered	51,113	264.147(a)(7)(ii)	7045.0518, 1, F, (2)	X		X	

Deleted: 2a

Deleted: 2a, A

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

ed.	between the owner or operator and a third-party claimant							
Error ! Bookmark not defined.	final court order establishing judgment for bodily injury or property damage caused by sudden or non-sudden accidental occurrence is issued against the owner or operator or an instrument providing financial assurance	113	264.147(a)(7)(iii)	7045.0518, 1, F, (3)	X		X	
ii	change "miscellaneous disposal unit" to "disposal miscellaneous unit"; after "legal defense costs" insert text regarding combination of per-occurrence coverage levels for sudden and non-sudden accidental occurrences, single annual aggregate level, and requirements for combining coverage; delete "in one of three ways,"; replace "and (3)" with "(3), (4), (5), or (6),"	†51,93	264.147(b)	7045.0518, 2	X			
	delete "corporate" before "guarantee"	†51	264.147(b)(2)	7045.0518, 2, B			X	
	replace existing paragraph; requirements may be met by obtaining letter of credit for liability coverage	†51	264.147(b)(3)	7045.0518, 2, C	X			

Deleted: 2a, C

Deleted: X

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	replace existing paragraph; requirements may be met by obtaining surety bond for liability coverage	†51	264.147(b)(4)	7045.0518, 2, (no surety bond in MN)			X	
†	add new paragraph; requirements may be met by obtaining trust fund for liability coverage	51	264.147(b)(5)	7045.0518, 2, D	X			
†	add new paragraph; liability coverage may be demonstrated by combination of mechanisms; amount of coverage must total at least the minimum amount required by 264.147; specification of "primary" and "excess" coverage	51	264.147(b)(6)	7045.0518, 2, E (no surety bond in MN)			X	
Error! Bookmark not defined.	add and amend new paragraph; notify Regional Administrator in writing whenever:	51,113	264.147(b)(7)	7045.0518, 2, F	X			
Error! Bookmark not defined.	add and amend new subparagraph; claims reduce amount of financial assurance for liability coverage	51,113	264.147(b)(7)(i)	7045.0518, 2, F, (1)	X			
Error! Bookmark not defin	add and amend new subparagraph; Certification of Valid Claim for bodily injury or property damages caused by sudden or	51,113	264.147(b)(7)(ii)	7045.0518, 2, F, (2)	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

ed.	non-sudden accidental occurrence is entered between the owner or operator and a third-party claimant							
Error ! Bookmark not defined.	add new subparagraph; final court order establishing judgment for bodily injury or property damage caused by sudden or non-sudden accidental occurrence is issued against the owner or operator or an instrument providing financial assurance	113	264.147(b)(7)(iii)	7045.0518, 2, F, (3)	X			
	insert ", a letter of credit, a surety bond, a trust fund, or a guarantee" after "obtain insurance"; replace "Evidence of insurance" with "Evidence of liability coverage"	†113	264.147(f)(6)	7045.0518, 6, H (no surety bond in MN)			X	
	remove "corporate" before "guarantee"	†51	264.147(g)	7045.0518, 7			X	
	remove "corporate" before "guarantee" in three places; insert "direct or higher-tier" before "parent"; after "parent corporation of the owner or operator" insert ", a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a `substantial business relationship'	†51	264.147(g)(1)	7045.0518, 7, A (corporate guarantee in MN; not adopting these changes)			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	with the owner or operator."; change "The guarantee must meet" to "The guarantor must meet"; change "(f)(7)" to "(f)(6)"; add "of this part" after "§ 264.151(h)(2)"; replace "The terms of the corporate guarantee must provide that:" with text regarding letter from the guarantor's chief financial officer							
[iv]	remove and reserve	†51	264.147(g)(1)(ii)		NA			
	remove "corporate" before "guarantee"	†51	264.147(g)(2)(i)	7045.0518, 7, B, (1) (no)			X	
	remove "corporate" before "guarantee"	†51	264.147(g)(2)(ii)	7045.0518, 7, B, (2) (no)			X	
	redesignate old paragraph (h) as (k); add new paragraph titled "Letter of credit for liability coverage"	†51	264.147(h)	7045.0518, 8	X			
†,[v]	requirements may be satisfied by obtaining irrevocable standby letter of credit that conforms to 264.147(h) requirements and submitting copy to Regional Administrator	51	264.147(h)(1)	7045.0518, 8, A	X			
†	criteria for financial institution issuing letter of credit	51	264.147(h)(2)	7045.0518, 8, B	X			
†	wording of letter of credit must be identical to wording specified in 264.151(k)	51	264.147(h)(3)	7045.0518, 8, C	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

†	establishment and use of standby trust fund by owner or operator using letter of credit	113	264.147(h)(4)	7045.0518, 8, D	X			
†	wording of standby trust fund must be identical to wording specified in 264.151(n)	113	264.147(h)(5)	7045.0518, 8, E	X			
†	add new paragraph titled "Surety bond for liability coverage"	51	264.147(i)	7045.0518, (no)			X	
†	requirements may be satisfied by obtaining surety bond conforming to 264.147(i) requirements and submitting copy to Regional Administrator	51	264.147(i)(1)	7045.0518, (no)			X	
†	criterion for surety company issuing bond	51	264.147(i)(2)	7045.0518, (no)			X	
†	wording of surety bond must be identical to wording specified in 264.151(l)	51	264.147(i)(3)	7045.0518, (no)			X	
†	conditions under which surety bond may be used	51	264.147(i)(4)	7045.0518, (no)			X	
			264.147(i)(4)(i)	7045.0518, (no)			X	
			264.147(i)(4)(ii)	7045.0518, (no)			X	
†	add new paragraph titled "Trust fund for liability coverage"	51	264.147(j)	7045.0518, 9	X			
†	requirements may be satisfied by establishing trust fund and submitting an	51	264.147(j)(1)	7045.0518, 9, A	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	originally signed duplicate of trust agreement to Regional Administrator							
†	criteria for trustee	51	264.147(j)(2)	7045.0518, 9, B	X			
†	trust fund must be funded for full amount of liability coverage it is to provide; requirements if fund is reduced below full amount; definition of "full amount"	51	264.147(j)(3)	7045.0518, 9, C	X			
†	wording of trust fund must be identical to wording specified in 264.151(m)	51	264.147(j)(4)	7045.0518, 9, D	X			
	old paragraph 264.147(h) becomes 264.147(k)	†51	264.147(k)	7045.0518, (no)			X	
	WORDING OF THE INSTRUMENTS							
	add text given at 53 FR 33952 to end of "Financial Guarantee Bond"	†51	264.151(b)	7045.0524, 2 existing MR is equivalent to this RCRA text	X			
[vi]	replace wording of letter from chief financial officer for closure and/or post-closure care with that shown at 57 FR 42836 & 42837	†113	264.151(f)	7045.0524, 6 EPA should add corrective action to closure/post closure here	X			
[vii], [viii]	replace wording of letter from chief financial officer for liability coverage with that shown at 57 FR 42837 & 42838	51,†113	264.151(g)	7045.0524, 7	X			
[ix]	replace wording of	†113	264.151(h)(1)	7045.0524, 8			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	corporate guarantee for closure and/or post-closure care with that shown at 57 FR 42838 & 42839							
[x]	replace wording of guarantee for liability coverage with that shown at FR 42839 & 42840	†51,113	264.151(h)(2)	7045.0524, 8a			X no SBR in MN	
	after "insured" add other entities that may cancel endorsement; delete "sixty" before "60"	†51	264.151(i)(2)(d)	7045.0524, 9 (existing MR OK >restricts who may cancel)			X	
[xi]	after "insured" add other entities that may cancel endorsement; delete "sixty" before "60"	†51	264.151(j)(2)(d)	7045.0524, 10 (existing MR OK >restricts who may cancel)			X	
[xii]	add new introductory subparagraph and wording for letter of credit for liability coverage as shown at 57 FR 42840 & 42841	†51,113	264.151(k)	7045.0524, 11	X			
[xiii]	add new introductory subparagraph and wording for surety bond as shown at 53 FR 33955 & 33956	†51	264.151(l)	7045.0524, [MPCA not adopting SB instrument here]			X	
	add new introductory subparagraph and wording for trust agreement as shown at 53 FR 33956-33958	†51	264.151(m)(1)	7045.0524, 12, A	X			
†,[xiv]	add new introductory subparagraph and example of certification of	51	264.151(m)(2)	7045.0524, 12, B	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	acknowledgement as shown at 53 FR 33958, third column							
†,[xv]	add new introductory subparagraph and wording for standby trust agreement as shown at 57 FR 42841-42843	113	264.151(n)(1)	7045.0524, 13, A	X			
†	add new introductory subparagraph and wording for certification of acknowledgement to accompany trust agreement, as shown at 57 FR 42843, first and second columns	113	264.151(n)(2)	7045.0524, 13, B	X			
	PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES							
	SUBPART H - FINANCIAL REQUIREMENTS							
	DEFINITIONS OF TERMS AS USED IN THIS SUBPART							
†,[xvi]	add new paragraph defining "substantial business relationship"	51	265.141(h)	[not in MR]			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	FINANCIAL ASSURANCE FOR CLOSURE							
xvii	remove "hereafter referred to as `corporate guarantee'" from first sentence; insert "direct or higher-tier" before "parent corporation"; add phrase regarding sibling firms and firms with substantial business relationships to end of second sentence; remove "corporate" before "guarantee" in three places; insert "A certified copy of" after "§ 264.151(h)."; change "The" to "the"; add text regarding letter from guarantor's chief financial officer and what the letter must describe	†113	265.143(e)(10) 265.143(e)(10)(i) 265.143(e)(10)(ii) 265.143(e)(10)(iii)	7045.0612, 6, L 7045.0612, 6, L, (1) 7045.0612, 6, L, (2) 7045.0612, 6, L, (3)			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

FINANCIAL ASSURANCE FOR POST-CLOSURE CARE							
remove "hereafter referred to as `corporate guarantee'" from first sentence; insert "direct or higher tier" before "parent corporation"; add phrase regarding sibling firms and firms with substantial business relationships to end of second sentence; remove "corporate" before "guarantee" in three places; insert "A certified copy of" after "§ 264.151(h)."; change "The" to "the"; add text regarding letter from guarantor's chief financial officer and what the letter must describe	†113	265.145(e)(11) 265.145(e)(11)(i) 265.145(e)(11)(ii) 265.145(e)(11)(iii)	7045.0616, 6, M 7045.0616, 6, M, (1) 7045.0616, 6, M, (2) 7045.0616, 6, M, (3)			X	
LIABILITY REQUIREMENTS							
delete "By the effective date of these regulations"; change "an" to "An"; delete "in one of three ways,"; replace "and (3)" with "(3), (4), (5), or (6)"	†51	265.147(a) 265.147(a)(1)(i) 265.147(a)(1)(ii)	7045.0620, 1 7045.0620, 1, A, (1) 7045.0620, 1, A, (2)	X			
delete "corporate" before "guarantee"; change "paragraph (g)" to "paragraphs (f) and (g)"	†51,93	265.147(a)(2)	7045.0620, 1, B			X	
replace existing paragraph; requirements may be	†51	265.147(a)(3)	7045.0620, 1, C	X			

xviii

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	met by obtaining letter of credit for liability coverage							
†	add new paragraph; requirements may be met by obtaining surety bond for liability coverage	51	265.147(a)(4)	MN does not allow this use of surety bonds			X	
†	add new paragraph; requirements may be met by obtaining trust fund for liability coverage	51	265.147(a)(5)	7045.0620, 1, D	X			
†	add new paragraph; liability coverage may be demonstrated by combination of mechanisms; amount of coverage must total at least the minimum amounts required by 265.147; specification of "primary" and "excess" coverage	51	265.147(a)(6)	7045.0620, 1, E, MN adopts most but continues to require corporate guarantee			X	
[xix]	add new paragraph; notify Regional Administrator in writing whenever:	51,113	265.147(a)(7)	7045.0620, 1, F	X			
Error! Bookmark not defined.	add new subparagraph; claims reduce amount of financial assurance for liability coverage	51,113	265.147(a)(7)(i)	7045.0620, 1, F, (1)	X			
Error! Bookmark not	Certification of Valid Claim for bodily injury or property damages caused by sudden or non-sudden accidental occurrence	51,113	265.147(a)(7)(ii)	7045.0620, 1, F, (2)	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

defined.	is entered between the owner or operator and a third- party claimant							
Error! Bookmark not defined.	final court order establishing judgment for bodily injury or property damage caused by sudden or non-sudden accidental occurrence is issued against the owner or operator or an instrument providing financial assurance	113	265.147(a)(7)(iii)	7045.0620, 1, F, (3)	X			
	change "bodily damage" to "bodily injury"; after "legal defense costs." insert text regarding combination of per-occurrence coverage levels for sudden and non-sudden accidental occurrences, single annual aggregate level, and requirements for combining coverage; delete "in one of three ways,"; replace "and (3)" with "(3), (4), (5), or (6)"	†51	265.147(b)	7045.620, 2	X			
	delete "corporate" before "guarantee"	†51	265.147(b)(2)	7045.620, 2, B, the MN requires only corporate guarantors			X	
	replace existing paragraph;	†51	265.147(b)(3)	7045.620, 2, C	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	requirements may be met by obtaining letter of credit for liability coverage							
	replace existing paragraph and subparagraphs; requirements may be met by obtaining surety bond for liability coverage	†51	265.147(b)(4)	MN does not allow surety bonds here for financial assurance			X	
xx	replace existing paragraph; requirements may be met by obtaining trust fund for liability coverage	†51	265.147(b)(5)	7045.620, 2, D	X			
†	add new paragraph; liability coverage may be demonstrated by combination of mechanisms; amount of coverage must total at least the minimum amount required by 265.147; specifying "primary" and "excess" coverage	51	265.147(b)(6)	7045.620, 2, E			X	
Error! Bookmark not defined.	add and amend new paragraph; notify Regional Administrator in writing whenever:	51,113	265.147(b)(7)	7045.0620, 2, F	X			
Error! Bookmark not defi	claims reduce amount of financial assurance for liability coverage	51,113	265.147(b)(7)(i)	7045.0620, 2, F, (1)	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

ned.								
Error! Bookmark not defined.	Certification of Valid Claim for bodily injury or property damages caused by sudden or non-sudden accidental occurrence is entered between the owner or operator and a third- party claimant	51,113	265.147(b)(7)(ii)	7045.0620, 2, F, (2)	X			
Error! Bookmark not defined.	add new subparagraph; final court order establishing judgment for bodily injury or property damage caused by sudden or non-sudden accidental occurrence is issued against the owner or operator or an instrument providing financial assurance	113	265.147(b)(7)(iii)	7045.0620, 2, F, (3)	X			
	insert ", a letter of credit, a surety bond, a trust fund, or a guarantee" after "obtain insurance"; replace "Evidence of insurance" with "Evidence of liability coverage"	†113	265.147(f)(6)	7045.0620, 5, H			X	
	remove "corporate" before "guarantee"	†51	265.147(g)	7045.0620, 6			X	
	remove "corporate" before "guarantee" in three places; insert "direct or higher-tier" before "parent"; after "parent corporation of the owner or operator"	†51	265.147(g)(1) 265.147(g)(1)(i)	7045.0620, 6, A 7045.0620, 6, A, (1) MN requires corporate			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	insert ", a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a `substantial business relationship' with the owner or operator"; change "(f)(7)" to "(f)(6)"; add "of this chapter" after "§ 264.151(h)(2)"; replace "The terms of the corporate guarantee must provide that:" with text regarding letter from the guarantor's chief financial officer			guarantee				
Error! Bookmark not defined.	remove and reserve	†51	265.147(g)(1)(ii)	7045.0620, 6, A, (2), MN requires corporate guarantee			X	
	remove "corporate" before "guarantee"	†51	265.147(g)(2)(i)	7045.0620, 6, B, (1) MN requires corporate guarantee			X	
	remove "corporate" before "guarantee"	†51	265.147(g)(2)(ii)	7045.0620, 6, B, (2) MN requires corporate guarantee			X	
	redesignate old 265.147(h) as 265.147(k); add new paragraph titled "Letter of credit for	†51	265.147(h)	7045.0620, new 7	X			

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

	liability coverage"							
†	requirements may be satisfied by obtaining irrevocable standby letter of credit that conforms to 265.147(h) requirements and submitting copy to Regional Administrator	51	265.147(h)(1)	7045.0620, new 7, A	X			
†	criteria for financial institution issuing letter of credit	51	265.147(h)(2)	7045.0620, new 7, B	X			
†	wording of letter of credit must be identical to wording specified in 264.151(k)	51	265.147(h)(3)	7045.0620, new 7, C	X			
†	establishment and use of standby trust fund by owner or operator using letter of credit	113	265.147(h)(4)	7045.0620, new 7, D	X			
†	wording of standby trust fund must be identical to wording specified in 264.151(n)	113	265.147(h)(5)	7045.0620, new 7, E	X			
†	add new paragraph titled "Surety bond for liability coverage"	51	265.147(i)	MN does not allow surety bonds here			X	
†	requirements may be satisfied by obtaining surety bond conforming to 265.147(i) requirements and submitting copy to Regional Administrator	51	265.147(i)(1)	MN does not allow surety bonds here			X	

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

†	criterion for surety company issuing bond	51	265.147(i)(2)	MN does not allow surety bonds here			X	
†,[xxi]	wording of surety bond must be identical to wording specified in 264.151(l)	51	265.147(i)(3)	MN does not allow surety bonds here			X	
†	conditions under which surety bond may be used	51	265.147(i)(4)	MN does not allow surety bonds here			X	
			265.147(i)(4)(i)	MN does not allow surety bonds here			X	
			265.147(i)(4)(ii)	MN does not allow surety bonds here			X	
†	add new paragraph titled "Trust fund for liability coverage"	51	265.147(j)	7045.0620, new 8	X			
†	requirements may be satisfied by establishing trust fund conforming to 265.147(j) requirements and submitting signed duplicate of trust agreement to Regional Administrator	51	265.147(j)(1)	7045.0620, new 8, A	X			
†	criteria for trustee	51	265.147(j)(2)	7045.0620, new 8, B	X			
†	trust fund must be funded for full amount of liability coverage it is to provide; requirements if fund is reduced below full amount; definition of "full amount"	51	265.147(j)(3)	7045.0620, new 8, C	X			

Deleted: X

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

†	wording of trust fund must be identical to wording specified in 264.151(m)	51	265.147(j)(4)	7045.0620, new 8, D	X			
	former 265.147(h) becomes 265.147(k)	†51	265.147(k)	Expired provision			X	

Note that there is an error in the Federal Register; "direct of higher tier" should be "direct or higher tier."

The September 1, 1988 (53 FR 33938) rule added 264.147(a)(7) and (b)(7) to the code, and the September 16, 1992 rule (57 FR 42832) revised them (including adding 264.147(a)(7)(iii) and (b)(7)(iii)). Note that the preamble of the September 1, 1988 Federal Register incorrectly characterized these paragraphs as less stringent. The September 16, 1992 Federal Register clarified this issue by stating that, in fact, these paragraphs are more stringent because they address an additional reporting requirement. The amendment made by the September 16, 1992 rule made these requirements less stringent than those introduced by the September 1, 1988 rule. Thus, those States that adopted the more stringent September 1, 1988 provisions are not required to adopt the amendments made by the September 16, 1992 rule, although EPA urges them to do so. States that did not adopt the September 1, 1988 requirements at 264.147(a)(7) and (b)(7) should not do so but should adopt the clarified version promulgated by the September 16, 1992 rule.

Revision Checklist 45 added the reference to miscellaneous units to the first sentence of this paragraph. When the September 1, 1988 rule revised this paragraph, the Revision Checklist 45 change was inadvertently omitted. The July 1, 1991 rule restored the Revision Checklist 45 reference to miscellaneous units.

Note that only (g)(1)(ii) is removed and reserved; (g)(1)(i) remains as it was prior to the September 1, 1988 final rule.

Note that there is an error in the Federal Register; "letter or credit" should be "letter of credit".

The changes addressed by Revision Checklist 113 at this citation are "conditionally optional" because they are linked to whether a State chooses to adopt the Revision Checklist 113 optional changes at 264.143(f)(10), 264.143(f)(11), 265.143(e)(10) and 265.143(e)(11). If a State chooses to adopt the optional changes at 264.143(f)(10), 264.143(f)(11), 265.143(e)(10) and 265.143(e)(11), it must also adopt the changes at this citation. If the State does not adopt those changes, it should not adopt the Revision Checklist 113 changes at 264.151(f).

The changes addressed by Revision Checklist 113 at this citation are "conditionally optional" because they are linked to whether a State chooses to adopt the Revision Checklist 113 optional changes at 264.147(f)(6) and 265.147(f)(6). If a State chooses to adopt the optional changes at 264.147(f)(6) and 265.147(f)(6), it must also adopt the changes at this citation. If the State does not adopt those changes, it should not adopt the Revision Checklist 113 changes at 264.151(g).

Note that there are several typographical errors in the Federal Register at 264.151(g) as indicated below:

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

Federal citation	Federal Register location	Error/Corrections
264.151(g) paragraph 4, line 5	57 FR 42837, column 3	"..'nonsudden' of 'both sudden.." should read "..'nonsudden' or 'both sudden.."
264.151(g), item 3., line 8	57 FR 42838, column 1	"subpart H or 40 CFR parts" should read "subpart H of 40 CFR parts"
264.151(g), Part A, Alternative I.3	57 FR 42838, column 1	"Current $" should read "Current liabilities $"
264.151(g), Part B, Alternative II.7., line 5	57 FR 42838, column 3	")___$___" should be ") $

The changes addressed by Revision Checklist 113 at this citation are "conditionally optional" because they are linked to whether a State chooses to adopt the Revision Checklist 113 optional changes at 264.147(h)(4), 264.147(h)(5), 265.147(h)(4) and 265.147(h)(5). If a State chooses to adopt the optional changes at 264.147(h)(4), 264.147(h)(5), 265.147(h)(4) and 265.147(h)(5), it must also adopt the changes at this citation. If the State does not adopt those changes, it should not adopt the Revision Checklist 113 changes at 264.151(h)(1).

Note that there are several typographical errors in the Federal Register at 264.151(h)(2) as indicated below:

Federal citation	Federal Register location	Error/Corrections

264.151(h)(2), Guarantee for Liability Coverage, line 15	57 FR 42839, column 3	"or which guarantor is" should read "of which guarantor is"
264.151(h)(2), Guarantee for Liability Coverage, line 19	57 FR 42839, column 3	"264.141(h)]" should read "264.141(h) or 265.141(h)]"
264.151(h)(2), Certification of Valid Claim, line 8	57 FR 42840, column 2	insert "]" after "facility"

Note that there is a typographical error in the Federal Register; in line three of the revised text of (j)(2)(d) shown at 53 FR 33955, "corportation" should be "corporation".

Note that there are several typographical errors in the Federal Register at 264.151(k) as indicated below:

Federal citation	Federal Register location	Error/Corrections
264.151(k), Irrevocable Standby Letter of Credit, line 26	57 FR 42840, column 3	insert "]" after "trust fund:"

264.151(k), (2), 2nd paragraph, lines 2 & 5	57 FR 42841, column 1	delete "]" in "[date]" in line 2 add "]" after "[date" in line 5
264.151(k), (2), 4th paragraph, line 7	57 FR 42841, column 1	end paragraph with "]"

Note that there are several errors in the September 1, 1988 Federal Register. Explanatory paragraph 10, as well as the actual text of the revised code, should read "(l)" rather than "(1)" (letter rather than number one). Also, the first sentence of the introductory text for the surety bond should reference "§ 264.147(i) or § 265.147(i)" rather than "§ 264.147(h) or § 265.147(h)".

Note that the introductory paragraph for 264.151(m)(2) is not clearly distinguished from the preceding and following certifications. In the middle of the third column at 53 FR 33958, the paragraph numbered (2) and ending with "of this acknowledgement." is the introductory paragraph and should have been printed in the larger type size used for such paragraphs. The example of the certification begins "State of".

Note that there are several typographical errors in the Federal Register at 264.151(n)(1) as indicated below:

RCRA REVISION CHECKLIST 113: Consolidated Liability Requirements (cont'd)

Federal citation	Federal Register location	Error/Corrections
264.151(n)(1) Standby Trust Agreement (e)(3)	57 FR 42841, column 3	insert "to" after "Property loaned"

Note that the September 1, 1988 Federal Register incorrectly labels this paragraph "264.141" rather than "265.141".

Note that there is an error in the September 16, 1992 Federal Register. In the preamble text at the bottom of the second column at 57 FR 42834, "265.143(e)(11)" should be "265.143(e)(10)".

Note that an error which appears in the July 1, 1989, 1990 and 1991 CFRs has only been partially corrected in the July 1, 1992 CFR. The July 1, 1989, 1990 and 1991 CFRs incorrectly omit 265.147(a)(1)(i)&(ii) and 265.147(b(1)(i)&(ii). The September 23, 1991 Federal Register (56 FR 47912) reinstated 265.147(a)(1)(i)&(ii) but erroneously did not reinstate 265.147(b)(1)(i)(&(ii). Thus, the July 1, 1992 CFR omits 265.147(b)(1)(i)&(ii). A technical correction will be published in the near future to correct this error. In the meantime, States should include analogous requirements in their regulations.

The September 1, 1988 rule added 265.147(a)(7) and (b)(7) to the code, and the September 16, 1992 rule revised them (including adding 265.147(a)(7)(iii) and (b)(7)(iii)). Note that the preamble of the September 1, 1988 Federal Register incorrectly characterized these paragraphs as less stringent. The September 16, 1992 Federal Register clarified this issue by stating that, in fact, these paragraphs are more stringent because they address an additional reporting requirement. The amendment made by the September 16, 1992 rule made these requirements less stringent than those introduced by the September 1, 1988 rule. Thus, those States that adopted the more stringent September 1, 1988 provisions are not required to adopt the amendments made by the September 16, 1992 rule, although EPA urges them to do so. States that did not

adopt the September 1, 1988 requirements at 265.147(a)(7) and (b)(7) should not do so but should adopt the clarified, less stringent version promulgated by the September 16, 1992 rule.

The Federal Register for Revision Checklist 51, in Item 3. in the first column at 53 FR 33959, erroneously indicates that 265.147(b)(5) is a new paragraph to be added. In fact, this final rule replaces the old 265.147(b)(5) with a new paragraph (b)(5).

Note that there is a typographical error in the Federal Register: "264.151(1)" [number 1], should be "264.151(l)" [letter l].

RCRA REVISION CHECKLIST 115

Chlorinated Toluenes Production Waste Listing
57 FR 47376-47386
October 15, 1992
(RCRA Cluster III, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART D--LISTS OF HAZARDOUS WASTES						
HAZARDOUS WASTES FROM SPECIFIC SOURCES						
i add waste streams in alphanumeric order to the subgroup "Organic Chemicals" in the table	261.32	7045.0135, 1a, C	Incorporated by reference (IBR)			

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
* * * * * * *		
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compound these functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride.)	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the produ methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	(T)
* * * * * * *		

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
APPENDIX VII TO PART 261						
BASIS FOR LISTING HAZARDOUS WASTE						
add entries in alpha-numeric order	Appendix VII	7045.0150, 1, D ~~7045.0135, 1a, M~~	IBR			

EPA hazardous waste No.	Hazardous constituents for which listed
* * * * * * *	
K149	Benzotrichloride, benzyl chloride, chloroform, chloromethane, chlorobenzene, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene 1,2,4,5-tetrachlorobenzene, toluene.
K150	Carbon tetrachloride, chloroform, chloromethane, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,2,4-trichlorobenzene.
K151	Benzene, carbon tetrachloride, chloroform, hexachlorobenzene, pentachlorobenzene, toluene, 1,2,4,5-tetrachlorobenzene, tetrachloroethylene
* * * * * * *	

---

i In the Federal Register's hazardous waste description for K149, there is a comma after "groups" rather than the correct period, and there appears to be an extra period after "chloride.)". States are advised to use a period after "groups" and omit the period after the closing parenthesis, as shown on this checklist.

RCRA REVISION CHECKLIST 116

Hazardous Soil Case-By-Case Capacity Variance
57 FR 47772-47776
October 20, 1992
(RCRA Cluster III, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS--THIRD THIRD WASTES						
delete "inorganic solid debris as defined in 40 CFR 268.2(g) (which also applies to chromium refractory bricks carrying the EPA Hazardous Waste Numbers K048-K052);"	268.35(c)	7045.1390	IBR			
delete ", and soil or debris contaminated with hazardous wastes listed in 40 CFR 268.10, 268.11, and 268.12 that are mixed radioactive/hazardous wastes,"; after "prohibited from land disposal" add ", except as provided in paragraph (e) of this section"	268.35(d)	7045.1390	IBR			
old 268.35(e) becomes 268.35(e)(1); new paragraph states "Subject to applicable prohibitions in §§ 268.30, 268.31, and 268.32, contaminated soil and debris are prohibited from land	268.35(e)	7045.1390	IBR			

RCRA REVISION CHECKLIST 116:
Hazardous Soil Case-by-Case Capacity Variance (cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
disposal as follows:"						
former 268.35(e) with these changes: add "(including such wastes that are mixed radioactive hazardous wastes)" between "268.12" and ", debris"; replace "are established in subpart D of this part" with "established in subpart D of this part (including such wastes that are mixed radioactive hazardous wastes)"	268.35(e)(1)	7045.1390	IBR			
effective May 8, 1993, hazardous soil having treatment standards in 268 Subpart D based on incineration, mercury retorting or vitrification, and soils contaminated with hazardous wastes listed in 40 CFR 268.10, 268.11 and 268.12 that are mixed radioactive hazardous wastes, are prohibited from land disposal	268.35(e)(2)	7045.1390	IBR			

RCRA REVISION CHECKLIST 117B

Toxicity Characteristic Amendment
57 FR 23062-23063
June 1, 1992
(RCRA Cluster III, HSWA provision)

Note: The Toxicity Characteristic rule [55 FR 11798 (March 29, 1990); Revision Checklist 74] and its subsequent amendments [55 FR 26986 (June 29, 1001) and 57 FR 30657 (July 10, 1992); Revision Checklist 74] omitted changing the reference to the "Extraction Procedure Toxicity Characteristic" at 261.3(a)(2)(i). The March 3, 1992 reissuance of the "mixture" and "derived-from" rules, reissued 261.3 with that error still in it. The June 1, 1992 amendment (57 FR 23062) to that reissued code corrected this error. Because this change makes the Federal code more stringent, it is required and was placed in a checklist separate from the other provisions (considered optional, for States) addressing the reissuance of the "mixture" and "derived-from" rules.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART A – GENERAL						
DEFINITION OF HAZARDOUS WASTE						
change "Extraction Procedure Toxicity characteristic" to "Toxicity Characteristic"	261.3(a)(2)(i)	7045.0102, 2, G	X			

RCRA REVISION CHECKLIST 118

Liquids in Landfills II
57 FR 54452-54461
November 18, 1992
(RCRA Cluster III, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART B - DEFINITIONS						
DEFINITIONS						
add "sorbent"	260.10	7045.0020, 84a	X			
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL WASTE ANALYSIS						
add new paragraph; procedures owner or operator will use to determine whether biodegradable sorbent has been added to waste in container	264.13(c)(3)	7045.0458, 2, G, (3)	X			
SUBPART N - LANDFILLS						
SPECIAL REQUIREMENTS FOR BULK AND CONTAINERIZED LIQUIDS						
change "an absorbent" to "a sorbent"	264.314(a)(2)	7045.0538, 10 [MR no liquid allowed]			X	
change "absorbents" to "sorbents"	264.314(b)	7045.0538, 10, A [MR no start date]	X		X	
change "absorbent" to "sorbent"	264.314(d)(1)(ii)	7045.0538, 10, B, (1)	X			
redesignate old 264.314(e) as 264.314(f); add new paragraph requiring that	264.314(e)	7045.0538, 10, D	X			

RCRA REVISION CHECKLIST 118: Liquids in Landfills (cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
sorbents, used to treat free liquids disposed in landfills, must be nonbiodegradable; definition of nonbiodegradable sorbents						
nonbiodegradable sorbents	264.314(e)(1)	7045.0538, 10, D	X			
	264.314(e)(1)(i)	7045.0538, 10, D, (1)(a)	X			
	264.314(e)(1)(ii)	7045.0538, 10, D, (1)(b)	X			
	264.314(e)(1)(iii)	7045.0538, 10, D, (1)(c)	X			
tests for nonbiodegradable sorbents	264.314(e)(2)	7045.0538, 10, D, (2)	X			
	264.314(e)(2)(i)	7045.0538, 10, D, (2)(a)	X			
	264.314(e)(2)(ii),(iii)	7045.0538, 10, D, (2)(b),(c)	X			
former 264.314(e) becomes 264.314(f)	264.314(f)	7045.0538, 10 [MR no liquid allowed]			X	
	264.314(f)(1)	7045.0538, 10 [MR no liquid allowed]			X	
	264.314(f)(2)	7045.0538, 10 [MR no liquid allowed]			X	

RCRA REVISION CHECKLIST 118: Liquids in Landfills (cont'd)

DISPOSAL OF SMALL CONTAINERS OF HAZARDOUS WASTE IN OVERPACKED DRUMS (LAB PACKS)						
change "absorbent" to "sorbent" in two places; add ", determined to be nonbiodegradable in accordance with § 264.314(e)," before "to completely"; change "absorb" to "sorb"; change "packing" to "it has been packed"	264.316(b)	7045.0538, 12, B	X			
change "absorbent" to "sorbent"; add "," after "containers"	264.316(c)	7045.0538, 12, C	X			
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL WASTE ANALYSIS						
add new paragraph; procedures owner or operator will use to determine whether biodegradable sorbent has been added to waste in container	265.13(c)(3)	7045.0564, 2, G, (3)	X			
SUBPART N - LANDFILLS						
SPECIAL REQUIREMENTS FOR BULK AND CONTAINERIZED LIQUIDS						
change "an absorbent" to "a sorbent"	265.314(a)(2)	7045.0638, 7 [no liquids allowed in MR]			X	
change "absorbents" to "sorbents"	265.314(b)	7045.0638, 7 [MR no start date]	X		X	
change "absorbent" to "sorbent"	265.314(c)(1)(ii)	7045.0638, 7, A, (1)	X			
redesignate old 265.314(f) as 265.314(g); add new paragraph requiring that	265.314(f)	7045.0638, 7, C	X			

RCRA REVISION CHECKLIST 118: Liquids in Landfills (cont'd)

sorbents, used to treat free liquids disposed in landfills, must be nonbiodegradable; definition of nonbiodegradable sorbents						
i nonbiodegradable sorbents	265.314(f)(1)	7045.0638, 7, C, (1)	X			
	265.314(f)(1)(i)	7045.0638, 7, C, (1), (a)	X			
	265.314(f)(1)(ii)	7045.0638, 7, C, (1), (b)	X			
	265.314(f)(1)(iii)	7045.0638, 7, C, (1), (c)	X			
tests for nonbiodegradable sorbents	265.314(f)(2)	7045.0638, 7, C, (2)	X			
	265.314(f)(2)(i)	7045.0638, 7, C, (2), (a)	X			
	265.314(f)(2)(ii), (ii)	7045.0638, 7, C, (2), (b), (c)	X			
former 265.314(f) becomes 265.314(g)	265.314(g)	7045.0638, 7 [MR no liquid allowed]			X	
	265.314(g)(1)	7045.0638, 7 [MR no liquid allowed]			X	
	265.314(g)(2)	7045.0638, 7 [MR no liquid allowed]			X	

RCRA REVISION CHECKLIST 118: Liquids in Landfills (cont'd)

DISPOSAL OF SMALL CONTAINERS OF HAZARDOUS WASTE IN OVERPACKED DRUMS (LAB PACKS)						
change "absorbent" to "sorbent" in both places; add ", determined to be nonbiodegradable in accordance with § 265.314(f)," before "to completely"; change "absorb" to "sorb"; change "packing" to "it has been packed"	265.316(b)	7045.0638, 9, B	X			
[ii] change "absorbent" to "sorbent"; add "," after "containers"	265.316(c)	7045.0638, 9, C	X			

Note that there is a typographical error in the Federal Register article; at 265.314(f)(1)(ii), "polysobutylene" should be "polyisobutylene."

Note that there is an error in the Federal Register article; "container's" should be "containers,".

RCRA REVISION CHECKLIST 123

Land Disposal Restrictions;
Renewal of the Hazardous Waste Debris Case-by-Case Capacity Variance
58 FR 28506-28511
May 14, 1993
(RCRA Cluster III, HSWA provisions)

Notes:
1) This is the fifth rule addressing hazardous debris and soil contaminants with Third Third wastes. Revision Checklist 78 (55 FR 22520; June 1, 1990) established a national capacity variance for certain hazardous waste soil and debris at 268.35. Revision Checklist 83 (56 FR 3864; January 31, 1991) amended 268.35(d) to also address mixed radioactive hazardous waste and amended 268.35(e) to address additional wastes. Revision Checklist 103 (57 FR 20766; May 15, 1992) established a case-by-case extension, until May 8, 1993, for contaminated debris only. Revision Checklist 116 (57 FR 47772; October 20, 1992) clarified that the case-by-case extension applied to mixed radioactive hazardous waste. This current rule extends, until May 8, 1994, the case-by-case extension for hazardous debris promulgated by the October 20, 1992 final rule. It also clarifies the extension by addressing mixed radioactive hazardous waste debris separately from other debris. The case-by-case extension for hazardous soil retains the May 8, 1993 deadline as specified in the October 20, 1992 rule, but is also clarified. States that have already adopted any of the previous rules addressing hazardous debris and soil should adopt this rule as soon as possible. States that have not adopted Third Third regulations should adopt this rule when adopting the other Third Third rules.

2) Although reprinted in the final rule addressed by this checklist, the 268.35(e) introduction did not change and was not included on this checklist.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS--THIRD THIRD WASTES						
change "1993" to "1994"; delete "268.10, 268.11, and"; in two places, delete parenthetical phrase regarding mixed radioactive hazardous wastes; add "are" after "treatment standards"	268.35(e)(1)	7045.1390	IBR			
redesignate old 268.35(e)(2) text as 268.35(e)(4); add new paragraph; effective	268.35(e)(2)		IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
May 8, 1994, mixed radioactive hazardous debris contaminated with 268.12 wastes and mixed radioactive hazardous debris contaminated with any characteristic waste for which Subpart D treatment standards are established are prohibited from land disposal						
add new paragraph; 268.35(e)(1)&(2) do not apply where generator has failed to make good-faith effort to locate suitable treatment capacity, has not utilized such capacity as it has found to be available, or has failed to file a report under 268.5(g), by August 12, 1993 or within 90 days after hazardous waste is generated, describing generator's efforts to locate treatment capacity; where 268.35(e)(1)&(2) do not apply, all wastes described in 268.35(e)(1)&(2) are prohibited from land disposal effective May 8, 1993	268.35(e)(3)	7045.1390	IBR			
old 268.35(e)(2) text redesignated as 268.35(e)(4); after "hazardous soil" insert "contaminated with wastes specified in this	268.35(e)(4)		IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
section"						
add new paragraph; when used in 268.35(e)(1)&(2), debris defined as:	268.35(e)(5)	7045.1390	IBR			
as defined in 268.2(g)	268.35(e)(5)(i)		IBR			
nonfriable inorganic solids that are incapable of passing through a 9.5 mm standard sieve that require cutting, or crushing and grinding in mechanical sizing equipment prior to stabilization, limited to the inorganic or metal materials specified in 268.35(e)(5)(ii)(A)-(H)	268.35(e)(5)(ii)		IBR			
	268.35(e)(5)(ii)(A)		IBR			
	268.35(e)(5)(ii)(B)		IBR			
	268.35(e)(5)(ii)(C)		IBR			
	268.35(e)(5)(ii)(D)		IBR			
	268.35(e)(5)(ii)(E)		IBR			
	268.35(e)(5)(ii)(F)		IBR			
	268.35(e)(5)(ii)(G)		IBR			
	268.35(e)(5)(ii)(H)		IBR			

RCRA REVISION CHECKLIST 124

Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes
Whose Treatment Standards Were Vacated
58 FR 29860-29887
May 24, 1993
(RCRA Cluster III, HSWA provisions)

Note: This Revision Checklist amends the treatment standards under the land disposal restrictions program for certain wastes displaying the characteristics of ignitability (EPA Hazard Code D001) and corrosivity (EPA Hazard Code D002). The treatment standards for these wastes were vacated by the September 25, 1992, decision of the U.S. Court of Appeals [Chemical Waste Management vs. EPA, 976 F.2d 2 (D.C. Cir. 1992)]. Without this replacement of these standards, land disposal of these wastes would be prohibited.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART A - GENERAL						
PURPOSE, SCOPE AND APPLICABILITY						
change "." to ","; add phrase regarding compliance with 264.17(b) if owner or operator is diluting hazardous ignitable wastes or corrosive wastes to remove the characteristic before land disposal	264.1(g)(6)	7045.0450, 3, E	X			

RCRA REVISION CHECKLIST 124: Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated (cont'd)

PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART A - GENERAL						
PURPOSE, SCOPE AND APPLICABILITY						
change "." to ","; add phrase regarding compliance with 265.17(b) if owner or operator is diluting hazardous ignitable wastes or corrosive wastes to remove characteristic before land disposal	265.1(c)(10)	7045.0552, 3, F	X			
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART A - GENERAL						
i PURPOSE, SCOPE AND APPLICABILITY						
add new paragraph; *de minimis* losses to wastewater treatment systems of commercial chemical product or chemical intermediates that are ignitable or corrosive, and that contain underlying hazardous constituents as defined in 268.2, are not considered to be prohibited wastes; *de minimis* defined	268.1(e)(4)	7045.1390	Incorporated by reference (IBR)			
add new paragraph; land disposal prohibitions do not apply to laboratory wastes displaying the characteristic of ignitability or corrosivity that are commingled with other plant	268.1(e)(5)		IBR			

RCRA REVISION CHECKLIST 124: Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated (cont'd)

wastewaters under designated circumstances: such wastes at facilities whose ultimate discharge is subject to regulation under the CWA, provided the annualized flow of laboratory wastewater into facility's headwork does not exceed 1%, or provided that the laboratory wastes' combined annualized average concentration does not exceed one part per million in the facility's headwork						
DEFINITIONS APPLICABLE IN THIS PART						
add new paragraph; definition of "underlying hazardous constituent"	268.2(i)	7045.1390	IBR			

RCRA REVISION CHECKLIST 124: Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated (cont'd)

	WASTE ANALYSIS AND RECORDKEEPING						
	in two places, delete "of this part," after "268.32"; add "of this chapter" after "appendix II" and after "subpart C"; add sentence at end regarding what the generator must do if he determines that his waste displays characteristic of ignitability or corrosivity and is prohibited under 268.37	268.7(a)	7045.1390	IBR			
[ii]	change "F039 and" to "F039,"; after "3004(d)" add ", and for underlying hazardous constituents (as defined in § 268.2 of this part), in D001 and D002 wastes if those wastes are prohibited under §268.37 of this part"	268.7(a)(1)(ii)		IBR			
Error ! Bookmark not defined.	change "F039 and" to "F039,"; after "3004(d)" add ", and for underlying hazardous constituents (as defined in § 268.2 of this part), in D001 and D002 wastes if those wastes are prohibited under §268.37 of this part"	268.7(b)(4)(ii)		IBR			
	SPECIAL RULES REGARDING WASTES THAT EXHIBIT A CHARACTERISTIC						
	add new sentence at end; if generator determines that his waste displays characteristic of ignitability (and is not in	268.9(a)	7045.1390	IBR			

RCRA REVISION CHECKLIST 124: Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated (cont'd)

the High TOC Ignitable Liquid Subcategory or is not treated by INCIN, FSUBS or RORGS of § 268.42, Table 1) or corrosivity and is prohibited under 268.37, generator must determine what underlying hazardous characteristics are reasonably expected to be present in the waste						

RCRA REVISION CHECKLIST 124: Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated (cont'd)

SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS--IGNITABLE AND CORROSIVE CHARACTERISTIC WASTES WHOSE TREATMENT STANDARDS WERE VACATED						
effective August 9, 1993, wastes specified in 261.21 as D001 (and not in the High TOC Ignitable Liquids subcategory) and in 261.22 as D002 that are managed in systems other than those whose discharge is regulated under the CWA or that inject in Class I deep wells regulated under the SDWA or are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal; CWA-equivalent treatment defined	268.37(a)	7045.1390	IBR			
effective February 10, 1994, wastes specified in 261.21 as D001 (and not in the High TOC Ignitable Liquids subcategory) and in 261.22 as D002 that are managed in systems defined in 40 CFR 144.6(e) and 146.6(e) as Class V injection wells that do not engage in CWA-equivalent treatment before injection are prohibited from land disposal	268.37(b)		IBR			
SUBPART D - TREATMENT STANDARDS						

RCRA REVISION CHECKLIST 124: Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated (cont'd)

APPLICABILITY OF TREATMENT STANDARDS						
add commas before and after "or hazardous debris for which a treatment technology is specified under § 268.45"; add sentence at end--for waste displaying characteristic of ignitability and reactivity that are diluted to meet deactivation treatment standard in 268.42(a) Tables 1 & 2, the treater must comply with precautionary measures specified in 264.17(b) and 265.17(b)	268.40(b)	7045.1390	IBR			
TREATMENT STANDARDS EXPRESSED AS CONCENTRATIONS IN WASTE EXTRACT						
revise Table CCWE entry for F039; add "(and D001 and D002 wastes prohibited under § 268.37)" after "F039" in first column; in third column, add "Table 2 in 268.42, and" before "Table CCW"	268.41(a), Table CCWE	7045.1390	IBR			
TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES						
Revise Table 2 as shown at 58 FR 29886	268.42(a), Table 2	7045.1390	IBR			
TREATMENT STANDARDS EXPRESSED AS WASTE CONCENTRATIONS						
revise Table CCW entry for F039; add "(and D001 and D002 wastes prohibited under § 268.37)" after "F039" in first column; in third column, add "Table 2 in 268.42, and" before	268.43(a), Table CCW	7045.1390	IBR			

RCRA REVISION CHECKLIST 124: Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated (cont'd)

"Table CCWE"						
PART 270 - EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM						
SUBPART D - CHANGES TO PERMIT						
PERMIT MODIFICATION AT THE REQUEST OF THE PERMITTEE						
remove second item designated as B(1)(b); redesignate item B(1)(c) as B(1)(d); add new B(1)(c) as shown at 58 FR 29887	270.42 Appendix I	Not in equivalent Mn Rules	X			

There is a typographical error in title of this section as printed in the Federal Register; "scope/and" should be "scope and". States should retain the correct title as it appears in the CFR.

There is a typographical error in the Federal Register; "reactive cyanides" should appear in italic type as it does in the CFR.

RCRA REVISION CHECKLIST 126

Testing and Monitoring Activities
58 FR 46040-46051
August 31, 1993
as amended September 19, 1994, at 59 FR 47980-47982
(RCRA Cluster IV, HSWA/Non-HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART B - DEFINITIONS						
REFERENCES						
revise reference to "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" to refer to third edition; add ASTM Method E926-88 to the end of the list of publications incorporated by reference; remove unnumbered paragraph and list of analytical testing methods; remove footnote 1 following the list of publications incorporated by reference	260.11(a)	7045.0065, ~~1~~D	Incorporated by reference (IBR)			

SUBPART C - RULEMAKING PETITIONS						
PETITIONS TO AMEND PART 261 TO EXCLUDE A WASTE PRODUCED AT A PARTICULAR FACILITY						
add "of this chapter" after "part 261"; replace "appendix III" with reference to "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods"	260.22(d)(1)(i)	7045.0075, 2, E, 1, (a)	X			
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART C - CHARACTERISTICS OF HAZARDOUS WASTE						
CHARACTERISTIC OF CORROSIVITY						
remove text after "using" and replace with reference to Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"	261.22(a)(1)	7045.0131, 4, A	X			
after "Test Methods for", replace "the Evaluation of" with "Evaluating"; change "(incorporated by reference, see § 260.11)" to ", as incorporated by reference in 260.11 of this chapter."; remove the rest of the paragraph	261.22(a)(2)	7045.0131, 4, B	X			

TOXICITY CHARACTERISTIC						
replace "test methods described in appendix II or equivalent methods approved by the Administrator under the procedures set forth in §§ 260.20 and 260.21" with reference to the TCLP in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" as incorporated by reference at 260.11; replace "Appendix II" with "Method 1311"	261.24(a)	7045.0131, 7, A	X			
APPENDIX II TO PART 261						
METHOD 1311 TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)						
replace TCLP with note referencing the TCLP in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"	Appendix II	~~7045.0135, 1, H~~ 7045.0150, 1, B	IBR			
APPENDIX III TO PART 261						
CHEMICAL ANALYSIS TEST METHODS						
replace introductory paragraphs and tables 1, 2, and 3 with note referencing Chapter 2 of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"	Appendix III	~~7045.0135, 1, I~~ 7045.0150, 1, C	IBR			
APPENDIX X TO PART 261						
METHOD OF ANALYSIS FOR CHLORINATED DIBENZO-P-DIOXINS AND -DIBENZOFURANS						
remove	Appendix X	PCA never adopted see 7045.0150, 1	IBR			

PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

SUBPART J - TANK SYSTEMS

APPLICABILITY

replace "EPA" with "the following test must be used:"; change "Wastes" to "Waste"; add comma after "Physical/Chemical Methods"; remove parentheses from "(EPA Publication No. SW-846)"; remove "No."; replace "must be used" with ", as incorporated by reference in § 260.11 of this chapter"	264.190(a)	7045.0528, 1, A	X			

SUBPART N - LANDFILLS						
SPECIAL REQUIREMENTS FOR BULK AND CONTAINERIZED LIQUIDS						
change "Wastes" to "Waste"; change the period after "Physical/Chemical Methods" to a comma; remove brackets from "[EPA Publication No. SW-846]"; remove "No."; add ", as incorporated by reference in § 260.11 of this chapter" at end of sentence	264.314(c)	7045.0538, 10, C	X			
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART J - TANK SYSTEMS						
APPLICABILITY						
replace first occurrence of "EPA" with "the following test must be used:"; change "Wastes" to "Waste"; add comma after "Physical/Chemical Methods"; remove parentheses from "(EPA Publication No. SW-846)"; remove "No."; replace "must be used" with ", as incorporated by reference in § 260.11 of this chapter"	265.190(a)	7045.0628, 1, A	X			

SUBPART N - LANDFILLS						
SPECIAL REQUIREMENTS FOR BULK AND CONTAINERIZED LIQUIDS						
change "Wastes" to Waste"; after "Physical/Chemical Methods", change the period to a comma; remove brackets from "[EPA Publication No. SW-846]"; remove "No."; add ", as incorporated by reference in § 260.11 of this chapter" at end of sentence	265.314(d)	7045.0638, 7, B	X			

PART 268 - LAND DISPOSAL RESTRICTIONS

SUBPART A - GENERAL

WASTE ANALYSIS AND RECORDKEEPING

1	add comma after first "§ 268.32"; replace "test method described in part 261, appendix II" with reference to the TCLP in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"; remove "of this chapter" after "subpart C"; replace "test method described in appendix IX of this part" with reference to the EP toxicity test in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"; change "his" to "this" before "waste displays"; remove "of this part" after "§ 268.2"	268.7(a)	7045.1390	IBR			

SUBPART D - TREATMENT STANDARDS						
APPLICABILITY OF TREATMENT STANDARDS						
replace "the test method in appendix II of part 261" with "Method 1311, the Toxicity Characteristic Leaching Procedure"; replace "the test method in 40 CFR part 261, appendix II, or the test method in appendix IX of this part" with reference to Methods 1310 and 1311; add sentence, at end of paragraph, regarding Methods 1310 and 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"	268.40(a)	7045.1390	IBR			
TREATMENT STANDARDS EXPRESSED AS CONCENTRATIONS IN WASTE EXTRACT						
replace "the test method in appendix I of this part" with "Method 1311, the Toxicity Characteristic Leaching Procedure,"; add sentence regarding Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" at end of paragraph	268.41(a)	7045.1390	IBR			

APPENDIX I TO PART 268						
TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP)						
replace note regarding TCLP in Appendix II of part 261 with note regarding TCLP in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"	268 Appendix I	7045.1390	IBR			
APPENDIX IX TO PART 268						
EXTRACTION PROCEDURE (EP) TOXICITY TEST METHOD AND STRUCTURAL INTEGRITY TEST (METHOD 1310)						
replace EP Toxicity Test method with note regarding EP in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods"	268 Appendix IX	7045.1390	IBR			
PART 270 - EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM						
SUBPART A - GENERAL INFORMATION						
REFERENCES						
replace information on "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" with reference to 260.11	270.6(a)	7045.0065, D	X			

SUBPART B - PERMIT APPLICATION						
SPECIFIC PART B INFORMATION REQUIREMENTS FOR INCINERATORS						
in the last sentence, change "methods for the evaluation of" to "Methods for Evaluating"; add a comma after "Physical/Chemical Methods"; replace "(incorporated by reference, see § 270.6 and referenced in 40 CFR part 261, appendix III)" with "EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter and § 270.6"	270.19(c)(1)(iii)	7001.0630, C	X			
change "the Evaluation of" to "Evaluating"; add a comma after "Physical/Chemical Methods"; replace "(incorporated by reference, see § 270.6)" with "EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter and § 270.6"	270.19(c)(1)(iv)	7001.0630, C, (1), (e)	X			

SUBPART F - SPECIAL FORMS OF PERMITS						
HAZARDOUS WASTE INCINERATOR PERMITS						
in the last sentence, change "the Evaluation of" to "Evaluating"; add a comma after "Physical/Chemical Methods"; replace "(incorporated by reference, see § 270.6)" with "EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter and § 270.6"	270.62(b)(2)(i)(C)	7001.0700, 3, A, ~~(3-5)~~	X			
change "the Evaluation of" to "Evaluating"; replace "(incorporated by reference, see § 270.6)" with "EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter and § 270.6"	270.62(b)(2)(i)(D)	7001.0700, 3, A, ~~(3-5)~~	X			

PERMITS FOR BOILERS AND INDUSTRIAL FURNACES BURNING HAZARDOUS WASTE						
in the last sentence, insert "waste" before "analysis"; add opening quotation mark before "Test"; add comma and closing quotation mark after "Physical/Chemical Methods"; replace "(incorporated by reference, see § 270.6)" with "EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter and § 270.6"	270.66(c)(2)(i)	Not in MR				
add opening quotation mark before "Test Methods"; add comma and closing quotation mark after "Physical/Chemical Methods"; replace "(incorporated by reference, see § 270.6)" with "EPA Publication SW-846, as incorporated by reference in § 260.11 of this chapter and § 270.6"	270.66(c)(2)(ii)	Not in MR				

1/The September 19 (59 FR 47980) rule indicates that it was not EPA's intention to remove the subparagraphs of 268.7(a) as the August 31, 1993 rule (58 FR 46040) implied. The provisions have remained in affect continuously in the form published in the CFR revised as of July 1, 1993.

RCRA REVISION CHECKLIST 128

Wastes From the Use of Chlorophenolic Formulations
in Wood Surface Protection
59 FR 458-469
January 4, 1994
(RCRA Cluster IV, Non-HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART B - DEFINITIONS						
REFERENCES						
i revise the reference to "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" by replacing "[Third Edition (September, 1986), as amended by Update I (July 1992)]" with "(Third Edition (November, 1986), as amended by Updates I, II and IIA)"; in the second sentence, replace "Update I" with "Updates I, II and IIA"; remove the last sentence regarding where copies may be inspected	260.11(a)	7045.0065	IBR			

RCRA REVISION CHECKLIST 128: Wastes From the Use of Chlorophenolic Formulations in Wood Surface Protection (cont'd)

PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

APPENDIX VIII TO PART 261

HAZARDOUS CONSTITUENTS

add the specified hazardous constituents in alphabetical order as shown below:	Appendix VIII	~~7045.0135, 1a, N~~ 7045.0150, 1, E	IBR			

Chemical abstracts Common Name	Chemical Abstracts name	Hazardous waste No.	CAS No.	
* * * * * * * * * *				
Potassium pentachlorophenate	Pentachlorophenol, potassium salt		7778736	None
* * * * * * * * * *				
Sodium pentachlorophenate	Pentachlorophenol, sodium salt		131522	None
* * * * * * * * * *				
2,3,4,6-tetrachlorophenol, potassium salt	same		53535276	None
2,3,4,6-tetrachlorophenol, sodium salt	same		25567559	None
* * * * * * * * * *				

Note the date (November 1986) given in the FR appears to be an error because the date on the third edition of SW-836 is September 1986 as was indicated in the Federal Register (58 FR 46040; August 31, 1993) addressed by Revision Checklist 126.

RCRA REVISION CHECKLIST 131

Recordkeeping Instructions; Technical Amendment
59 FR 13891-13893
March 24, 1994
(RCRA Cluster IV, Non-HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
APPENDIX I TO PART 264						
RECORDKEEPING INSTRUCTIONS						
replace Table 1 to paragraph (2) with the following table:	Appendix I/Table 1	7045.0543, 1, A	Incorporated by reference (IBR)			

Table 1

Unit of measure	Code[1]
Gallons	G
Gallons per Hour	E
Gallons per Day	U
Liters	L
Liters per Hour	H
Liters per Day	V
Short Tons per Hour	D
Metric Tons per Hour	W
Short Tons per Day	N
Metric Tons per Day	S
Pounds per Hour	J
Kilograms per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's per Hour	I

RCRA REVISION CHECKLIST 131: Recordkeeping Instructions; Technical Amendment (cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE

FOOTNOTE: [1]Single digit symbols are used here for data processing purposes.

replace Table 2 to paragraph (3) with the following table:	Appendix I/Table 2	7045.0543, 1, A	IBR			

Table 2.-Handling Codes for Treatment, Storage and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store or dispose of each quantity of hazardous waste received.

1. Storage

S01	Container (barrel,
S02	drum, etc.)
S03	Tank
S04	Waste Pile
S05	Surface
S06	Impoundment
S99	Drip Pad
	Containment
	Building (Storage)
	Other Storage
	(specify)

2. Treatment

(a) Thermal Treatment--

T06	Liquid injection
T07	incinerator
T08	Rotary kiln
T09	incinerator
T10	Fluidized bed
T11	incinerator
T12	Multiple hearth
T13	incinerator
T14	Infrared furnace
T15	incinerator
T18	Molten salt
	destructor
	Pyrolysis
	Wet air oxidation
	Calcination
	Microwave
	discharge
	Other (specify)

(b) Chemical Treatment--

T19	Absorption
T20	mound
T21	Absorption field
T22	Chemical fixation
T23	Chemical

RCRA REVISION CHECKLIST 131: Recordkeeping Instructions;
Technical Amendment (cont'd)

T24	oxidation
T25	Chemical
T26	precipitation
T27	Chemical
T28	reduction
T29	Chlorination
T30	Chlorinolysis
T31	Cyanide
T32	destruction
T33	Degradation
T34	Detoxification
	Ion exchange
	Neutralization
	Ozonation
	Photolysis
	Other (specify)

(c) Physical Treatment--

(1) Separation of components:

T35	Centrifugation
T36	Clarification
T37	Coagulation
T38	Decanting
T39	Encapsulation
T40	Filtration
T41	Flocculation
T42	Flotation
T43	Foaming
T44	Sedimentation
T45	Thickening
T46	Ultrafiltration
T47	Other (specify)

(2) Removal of Specific Components:

T48	Absorption-molec
T49	ular sieve
T50	Activated carbon
T51	Blending
T52	Catalysis
T53	Crystallization
T54	Dialysis
T55	Distillation
T56	Electrodialysis
T57	Electrolysis
T58	Evaporation
T59	High gradient
T60	magnetic
T61	separation
T62	Leaching
T63	Liquid ion
T64	exchange
T65	Liquid-liquid
T66	extraction
	Reverse osmosis
	Solvent recovery
	Stripping
	Sand filter
	Other (specify)

(d) Biological Treatment

T67	Activated sludge
T68	Aerobic lagoon
T69	Aerobic tank
T70	Anaerobic tank

RCRA REVISION CHECKLIST 131: Recordkeeping Instructions;
Technical Amendment (cont'd)

T71	Composting
T72	Septic tank
T73	Spray irrigation
T74	Thickening filter
T75	Tricking filter
T76	Waste
T77	stabilization pond
T78	Other (specify)
T79	[Reserved]
	[Reserved]

RCRA REVISION CHECKLIST 131: Recordkeeping Instructions; Technical Amendment (cont'd)

(e) Boilers and Industrial Furnaces

T80	Boiler
T81	Cement Kiln
T82	Lime Kiln
T83	Aggregate Kiln
T84	Phosphate Kiln
T85	Coke Oven
T86	Blast Furnace
T87	Smelting, Melting, or Refining Furnace
T88	Titanium Dioxide Chloride Process Oxidation Reactor
T89	Methane Reforming Furnace
T90	Pulping Liquor Recovery Furnace
T91	Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid
T92	Halogen Acid Furnaces
T93	Other Industrial Furnaces Listed in 40 CFR 260.10 (specify)

(f) Other Treatment

T94	Containment Building (Treatment)

3. Disposal

D79	Underground Injection
D80	Landfill
D81	Land Treatment
D82	Ocean Disposal
D83	Surface Impoundment (to be closed as a landfill)
D99	Other Disposal (specify)

4. Miscellaneous (Subpart X)

X01	Open Burning/Open Detonation
X02	Mechanical Processing
X03	Thermal Unit
X04	Geologic Repository
X99	Other Subpart X (specify)

PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

APPENDIX I TO PART 265

RECORDKEEPING INSTRUCTIONS

replace Table 1 to paragraph (2) with the following table:	Appendix I/Table 1	7045.0645, 1, A	IBR			

RCRA REVISION CHECKLIST 131: Recordkeeping Instructions; Technical Amendment (cont'd)

Table 1

Unit of measure	Code[1]
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds per Hour	J
Kilograms Per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's per Hour	I

FOOTNOTE: [1]Single digit symbols are used here for data processing purposes.

replace Table 2 to paragraph (3) with the following table:	Appendix I/Table 2	7045.0643, 1, A	IBR			

Table 2.-Handling Codes for Treatment, Storage and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store or dispose of each quantity of hazardous waste received.

1. Storage

S01	Container (barrel, drum, etc.)
S02	Tank
S03	Waste Pile
S04	Surface Impoundment
S05	Drip Pad
S06	Containment Building (Storage)
S99	Other Storage (specify)

2. Treatment

(a) Thermal Treatment--

T06	Liquid injection incinerator
T07	Rotary kiln incinerator
T08	Fluidized bed incinerator
T09	Multiple hearth incinerator
T10	Infrared furnace incinerator
T11	Molten salt destructor
T12	Pyrolysis
T13	Wet Air oxidation
T14	Calcination
T15	Microwave discharge
T18	Other (specify)

(b) Chemical Treatment--

T19	Absorption mound
T20	Absorption field
T21	Chemical fixation
T22	Chemical oxidation
T23	Chemical precipitation
T24	Chemical reduction
T25	Chlorination
T26	Chlorinolysis
T27	Cyanide destruction
T28	Degradation
T29	Detoxification
T30	Ion exchange
T31	Neutralization
T32	Ozonation
T33	Photolysis
T34	Other (specify)

(c) Physical Treatment--

(1) Separation of components

T35	Centrifugation
T36	Clarification
T37	Coagulation
T38	Decanting
T39	Encapsulation
T40	Filtration
T41	Flocculation
T42	Flotation
T43	Foaming
T44	Sedimentation
T45	Thickening
T46	Ultrafiltration
T47	Other (specify)

(2) Removal of Specific Components

RCRA REVISION CHECKLIST 131: Recordkeeping Instructions;
Technical Amendment (cont'd)

T48	Absorption-molecular sieve
T49	Activated carbon
T50	Blending
T51	Catalysis
T52	Crystallization
T53	Dialysis
T54	Distillation
T55	Electrodialysis
T56	Electrolysis
T57	Evaporation
T58	High gradient magnetic separation
T59	Leaching
T60	Liquid ion exchange
T61	Liquid-liquid extraction
T62	Reverse osmosis
T63	Solvent recovery
T64	Stripping
T65	Sand filter
T66	Other (specify)

(d) Biological Treatment

T67	Activated sludge
T68	Aerobic lagoon
T69	Aerobic tank
T70	Anaerobic tank
T71	Composting
T72	Septic tank
T73	Spray irrigation
T74	Thickening filter
T75	Tricking filter
T76	Waste stabilization pond
T77	Other (specify)
T78	[Reserved]
T79	[Reserved]

(e) Boilers and Industrial Furnaces

T80	Boiler
T81	Cement Kiln
T82	Lime Kiln
T83	Aggregate Kiln
T84	Phosphate Kiln
T85	Coke Oven
T86	Blast Furnace
T87	Smelting, Melting, or Refining Furnace
T88	Titanium Dioxide Chloride Process Oxidation Reactor
T89	Methane Reforming Furnace
T90	Pulping Liquor Recovery Furnace
T91	Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric

RCRA REVISION CHECKLIST 131: Recordkeeping Instructions; Technical Amendment (cont'd)

	Acid
T92	Halogen Acid Furnaces
T93	Other Industrial Furnaces Listed in 40 CFR 260.10 (specify)

(f) Other Treatment

T94	Containment Building (Treatment)

3. Disposal

D79	Underground Injection
D80	Landfill
D81	Land Treatment
D82	Ocean Disposal
D83	Surface Impoundment (to be closed as a landfill)
D99	Other Disposal (specify)

4. Miscellaneous (Subpart X)

X01	Open Burning/Open Detonation
X02	Mechanical Processing
X03	Thermal Unit
X04	Geologic Repository
X99	Other Subpart X (specify)

RCRA REVISION CHECKLIST 132

Wood Surface Protection; Correction
59 FR 28484
June 2, 1994
(RCRA Cluster IV, Non-HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART B - DEFINITIONS						
REFERENCES						
after the first "Updates I" remove ", II"; remove the "s" in the second "Updates I" as well as "II, and IIA", which occurs immediately after; add new information on where Update II A may be found;	260.11(a)	7045.0065, 1	IBR			

RCRA REVISION CHECKLIST 134

Correction of Beryllium Powder (P015) Listing
59 FR 31551-31552
June 20, 1994
(RCRA Cluster IV, Non-HSWA provisions)

Note: On April 22, 1988, EPA published a technical correction to the lists of hazardous wastes in 40 CFR 261.33(e) and (f) (Revision Checklist 46, 53 FR 13382). In that notice, however, the word "dust" was inadvertently omitted from the P015 listing for "beryllium dust" in the 261.33(e) list of hazardous wastes. In addition, it became apparent that the term "beryllim dust" is not used by the industry to describe this commerical chemical product; the actual term used by the industry is "beryllium powder". This technical correction adds "powder" to the P015 hazardous waste listing for "beryllium" and makes conforming changes to the list of hazardous constituents in Part 261 Appendix VIII and to Table 2 in § 268.42(a).

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART D--LISTS OF HAZARDOUS WASTES						
DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESID SPILL RESIDUES THEREOF						
correct the P015 listing as shown below	261.33(e)	7045.0135, 1a, D	IBR			

Hazardous waste No.	Chemical abstracts No.	Substance
* * * * * * * *		
P015	7440-41-7	Berryllium powder
* * * * * * * *		

APPENDIX VIII TO PART 261						
HAZARDOUS CONSTITUENTS						
correct the P015 listing	Appendix VIII	~~7045.0135, 1a, N~~	IBR			

RCRA REVISION CHECKLIST 134: Correction of Beryllium Powder (P015 Listing) (cont'd)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
as shown below		7045.0150, 1, E				

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * * * * * * * * * *			
Beryllium powder	Same	7440-41-7	P015
* * * * * * * * * * *			

PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART D - TREATMENT STANDARDS						
TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES						
change the P015 entry's waste description from "beryllium dust" to "beryllium powder"	268.42(a)/Table 2	7045.1390	IBR			

RCRA REVISION CHECKLIST 136

Removal of the Conditional Exemption
for Certain Slag Residues
59 FR 43496-43500
as amended August 24, 1994
(RCRA Cluster V, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 266 - STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTE AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES						
SUBPART C - RECYCLABLE MATERIALS USED IN A MANNER CONSTITUTING DISPOSAL						
APPLICABILITY						
add new paragraph; uses of slags from HTMR processing of hazardous wastes K061, K062 and F006 not covered by 266.20(b)	266.20(c)	7045.0665, 1, ~~B~~ C	X			
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART D - TREATMENT STANDARDS						
redesignate Footnote 2 as Footnote 3 at the end of the table and at the "F020-F023 . . ." entry in the table; add reference to Footnote 2 at F006, K061 and K062; at end of table add a new Footnote 2: "[2]See also restrictions on use of slags for anti-skid/deicing purposes in §266.20(c)"	268.41(a)/ Table CCWE	7045.1390	IBR			

RCRA REVISION CHECKLIST 137
Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes
59 FR 47982-48110
September 19, 1994
as amended at 60 FR 242-302, January 3, 1995
(RCRA Cluster V, HSWA/non-HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL						
SUBPART C - RULEMAKING PETITIONS						
† VARIANCES FROM CLASSIFICATION AS A SOLID WASTE						
change "Regional Administrator" to "Administrator"	260.30 intro	Existing MN Rule 7045.0075, ~~3, A~~ 1 equivalent	X			
remove "primary" from production process	260.30(b)	7045.0075, 3, B	X			
† STANDARDS AND CRITERIA FOR VARIANCES FROM CLASSIFICATION AS A SOLID WASTE						
change both occurrences of "Regional Administrator" to "Administrator"; remove "standards and" from the last sentence	260.31(a)	Existing MR equiv 7045.0075, 3, A; MPCA rejects removing "standards and"	X			
change "Regional Administrator" to "Administrator"	260.31(b)	Existing MR equiv 7045.0075, 3, B	X			
† VARIANCE TO BE CLASSIFIED AS A BOILER						
change "Regional Administrator" to "Administrator"	260.32 intro	Existing MR equiv 7045.0075, 4	X			
† PROCEDURES FOR VARIANCES FROM CLASSIFICATION AS A SOLID WASTE OR TO BE CLASSIFIED AS A BOILER						
change "Regional Administrator" to "Administrator"	260.33 intro	Not in MR definition of SW	X			
change "Regional Administrator" to	260.33(a)	Not in MR definition of SW	X			

Formatted: Underline

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
"Administrator"; replace "in the region where the recycler is located" with "for the variance"; remove "of this part" after "260.32"						
change the three occurrences of "Regional Administrator" to "Administrator"; remove ", and this decision may not be appealed to the Administrator"	260.33(b)	Not in MR definition of SW	X			
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART A - GENERAL						
DEFINITION OF SOLID WASTE						
insert "or land disposed" after "first being reclaimed"; replace the phrase "raw material feedstock, and the process must use raw materials as principal feedstocks": with "feedstock materials"; add a sentence prohibiting the placement on the land of materials that are returned to a secondary process	261.2(e)(1)(iii)	MS section 116.06, subdivision 11	X			PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

Formatted: Underline

Formatted: Underline

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
SUBPART A - GENERAL						
PURPOSE, SCOPE AND APPLICABILITY						
replace "268.42, Table 2, of this chapter," with "268.40 of this chapter, Table Treatment Standards for Hazardous Wastes"; replace "corrosive (D002)" with "reactive (D003)"; remove "of this part" after "§264.17(b)"	264.1(g)(6)	Existing MR equiv 7045.0450, 3, E	X			
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART A - GENERAL						
PURPOSE, SCOPE, AND APPLICABILITY						
replace "268.42, Table 2, of this chapter," with "268.40 of this chapter, Table Treatment Standards for Hazardous Wastes"; replace "corrosive (D002)" with "reactive (D003)"; remove "in order" before "to remove"	265.1(c)(10)	7045.0552, 3, F	X			PART 266 - STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
							MANAGEMENT FACILITIES
	SUBPART C - RECYCLABLE MATERIALS USED IN A MANNER CONSTITUTING DISPOSAL						
	STANDARDS APPLICABLE TO USERS OF MATERIALS THAT ARE USED IN A MANNER THAT CONSTITUTES DISPOSAL						
i	replace "Subparts A through N of parts 264 and 265 and Parts 270 and 124" with "subparts A through N of parts 264 and 265 and parts 268, 270 and 124"	266.23(a)	7045.0665, 4, B	X			
	SUBPART H - HAZARDOUS WASTE BURNED IN BOILERS AND INDUSTRIAL FURNACES						
	APPLICABILITY						
	insert "or mercury recovery furnace," after the first "recovery furnace"	266.100(c)(1)	BIF; Not in MR				
	insert "or mercury" after "nickel-chromium"; insert "(c)(3)" at the end of paragraph	266.100(c)(3)	BIF; Not in MR				
	replace "and XII" with ", XII, and XIII"	266.100(c)(3)(i)	BIF; Not in MR				
ii	insert "of this part" after "appendix XI"; insert "of this part" after "appendix XII"; after "nickel or chromium" insert "a waste listed in appendix XIII of this part must contain recoverable levels of mercury and contain less than 500 ppm of 40 CFR part 261, appendix VIII organic constituents,"	266.100(c)(3)(i)(A)	BIF; Not in MR				

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
replace "or XII" with "XII, or XIII"	266.100(c)(3)(ii)	BIF; Not in MR				
APPENDIX XIII TO PART 266						
MERCURY BEARING WASTES THAT MAY BE PROCESSED IN EXEMPT MERCURY RECOVERY UNITS						
add a new appendix addressing certain mercury-bearing wastes	266/Appendix XIII	BIF; Not in MR				
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART A - GENERAL						
PURPOSE, SCOPE AND APPLICABILITY						
replace the ending period with "; and"	268.1(c)(3)(ii)	7045.1390	Incorporated by reference (IBR)			
add a new paragraph addressing D001 High TOC subcategory wastes or D012-D017 pesticide wastes	268.1(c)(3)(iii)					
after "corrosive (D002)," add "or are organic constituents that exhibit the characteristic of toxicity (D012-D043),"; replace "268.2 of this part" with "268.2(i)"; replace the ending period with a semicolon and add the phrase "discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that	268.1(e)(4)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	rinsing; or"						
	insert "for hazardous characteristic wastes" after "prohibitions"; replace "or corrosivity (D002)" with ", corrosivity (D002), or organic toxicity (D012-D043)"; remove "that are commingled with ...laboratory operations,"; change the two occurrences of "headwork" to "headworks"	268.1(e)(5)					
	DEFINITIONS APPLICABLE TO THIS PART						
	insert ", namely lead acid batteries, cadmium batteries, and radioactive lead solids" after "Part 268"	268.2(g)	7045.1390	IBR			
iii	rewrite definition to refer to the constituents listed in 268.48 Table UTS--Universal Treatment Standards which can reasonably be expected to be present at point of generation, excluding zinc and vanadium	268.2(i)					WASTE ANALYSIS AND RECORDKEEPING
iv	replace existing paragraph; generator determines whether listed waste is a restricted waste; 268.32 exception; if characteristic is exhibited, he must test the extract using method 1311 (TCLP) or use knowledge of waste to determine whether	268.7(a)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	restricted from land disposal; what the generator must do if he determines that his waste exhibits characteristic of ignitability, or corrosivity and is prohibited under 268.37, and/or organic toxicity and is prohibited under 268.38						
3	insert "it" before "exceeds"; remove the end of the first sentence after "notify the treatment or storage facility in writing"	268.7(a)(1)					
	remains unchanged even though included in rule	268.7(a)(1)(i)					
3	replace with subparagraph addressing waste constituents the treater will monitor, if monitoring will not include all regulated constituents for specified wastes; generator must indicate whether wastewater or nonwastewater	268.7(a)(1)(ii)					
	remains unchanged even though included in rule	268.7(a)(1)(iii)					
3	replace "40 CFR 268.45; and" with "40 CFR 268.45;"	268.7(a)(1)(iv)					
	replace "Waste" with "The waste"; replace ending period with "; and,"	268.7(a)(1)(v)					
3	add new subparagraph: "The date the waste is	268.7(a)(1)(vi)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	subject to the prohibitions."						
	remains unchanged even though included in this rule	268.7(a)(2)					
	remains unchanged even though included in this rule	268.7(a)(2)(i)					
	remains unchanged even though included in this rule	268.7(a)(2)(i)(A)					
3	replace subparagraph; waste constituents the treater will monitor, if monitoring will not include all regulated constituents for specified wastes; indicate whether wastewater or nonwastewater	268.7(a)(2)(i)(B)					
	remains unchanged even though included in this rule	268.7(a)(2)(i)(C)					
	remains unchanged even though included in this rule	268.7(a)(2)(i)(D)					
	remains unchanged even though included in this rule	268.7(a)(2)(ii)					
	remains unchanged even though included in this rule	268.7(a)(3)					
	remains unchanged even though included in this rule	268.7(a)(3)(i)					
	replace subparagraph; waste constituents the treater will monitor, if monitoring will not	268.7(a)(3)(ii)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	include all regulated constituents for specified wastes; generator must indicate whether wastewater or nonwastewater						
	remains unchanged even though included in this rule	268.7(a)(3)(iii)					
	remains unchanged even though included in this rule	268.7(a)(3)(iv)					
	completely revise and reorganize, adding new subparagraphs (A) and (B); for hazardous debris when using alternative treatment technologies provided by 268.45	268.7(a)(3)(v)					
	add new subparagraph; contaminants subject to treatment as described in 268.45(b)	268.7(a)(3)(v)(A)					
	add new subparagraph; indicate that these contaminants are treated to comply with 268.45	268.7(a)(3)(v)(B)					
3	redesignate old 268.7(a)(3)(vi) as (a)(3)(vii); add new paragraph addressing the requirements for hazardous debris when using the treatment standards for the contaminating waste(s) in 268.40	268.7(a)(3)(vi)					
3	former 268.7(a)(3)(vi) becomes (a)(3)(vii)	268.7(a)(3)(vii)					
	remains unchanged even	268.7(a)(4)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	though included in this rule						
	remains unchanged even though included in this rule	268.7(a)(4)(i)					
	remains unchanged even though included in this rule	268.7(a)(4)(ii)					
	remains unchanged even though included in this rule	268.7(a)(4)(iii)					
	remains unchanged even though included in this rule	268.7(a)(5)					
	delete a comma between "RCRA" and "Subtitle C"	268.7(a)(6)					
	change "261.2-261.6" to "261.2 through 261.6"; insert "RCRA" before "Subtitle C"	268.7(a)(7)					
3	replace "that contains wastes identified in Appendix IV of this part" with "that contains none of the wastes specified in appendix IV of part 268"; replace "268.42" with "268.42(c)"; after "paragraph (a)(1) of this section" add ", except that underlying hazardous constituents need not be determined"; in the certification, replace "contains only the wastes specified in appendix IV" with "does not contain any wastes identified at Appendix IV"; remove the phrase "or solid wastes not	268.7(a)(8)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	subject to regulation under 40 CFR part 261"; remove the comma after "certification"						
	remove and reserve	268.7(a)(9)					
	remains unchanged even though included in rule	268.7(a)(10)					
3	replace subparagraph; waste constituents to be monitored if monitoring will not include all regulated constituents; include whether nonwastewater or wastewater; indicate subcategory	268.7(b)(4)(ii)					
	add new subparagraph addressing characteristic wastes D001, D002, and D012-D043 meeting specified requirements; certification	268.7(b)(5)(iv)					
3	replace "Director" with "EPA Regional Administrator (or his designated representative) or State authorized to implement part 268 requirements"	268.7(d)					
3,v	insert ", including the following information," after "notification"; replace "Director or authorized State including the following information" with "EPA Regional hazardous waste management division director (or his designated representative) or State authorized to implement	268.7(d)(1)					SPECIAL RULES REGARDING WASTES THAT EXHIBIT A CHAR

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	part 268 requirements"						ACTE RISTI C
3	change "40 CFR part 261" to "40 CFR 261" in the first two occurrences; in the third sentence replace "treatment standard for the waste code listed in 40 CFR Part 261, Subpart D operates in lieu of the standard for the waste code under 40 CFR part 261, subpart C" with "treatment standard for the waste listed in part 261, subpart D operates in lieu of the treatment standard for the waste under part 261, subpart C"; replace "INCIN, FSUBS, or RORGS of § 268.42, Table 1" with "CMBST, or RORGS"; after "§ 268.37" replace "of the Part" with "; or that his waste displays the characteristic of toxicity (D012-D043), and is prohibited under § 268.38,"; replace "determine what" with "determine the"; remove "of this Part" after "§ 268.2"; replace "are reasonably expected to be present in the D001 or D002	268.9(a)					
	waste" with "in the D001, D002, or D012-D043 wastes"	268.9(a) (continued)					
	insert "RCRA" before "Subtitle D facility"; add	268.9(d)(1)(i)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	"and" at the end of the subparagraph						
vi	remove "and" before "treatability group(s)"; after "treatability group(s)" add ", and underlying hazardous constituents (as defined in §268.2(i) in D001 and D002 wastes prohibited under §268.37, or D012-D043 wastes under §268.38"	268.9(d)(1)(ii)					
3	add new subparagraph; if treatment removes the characteristic but does not treat underlying hazardous constituents, then the certification found in §268.7(b)(5)(iv) applies	268.9(d)(2)(i)					
	reserved	268.9(d)(2)(ii)					SUBPART C - PROHIBITIONS ON LAND DISPOSAL
	WASTE SPECIFIC PROHIBITIONS - NEWLY IDENTIFIED ORGANIC TOXICITY CHARACTERISTIC WASTES AND NEWLY LISTED COKE BY-PRODUCT AND CHLOROTOLUENE PRODUCTION WASTES						
	land disposal prohibitions for specified wastes as of December 19, 1994; definition of CWA-equivalent treatment	268.38(a)	7045.1390	IBR			
	September 19, 1996 land disposal prohibition of radioactive wastes mixed with D018-D043 meeting	268.38(b)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
certain criteria; definition of CWA-equivalent treatment; similar prohibition for radioactive wastes mixed with K141-K145 and K147-K151 and for soil and debris contaminated with these radioactive mixed wastes						
where 268.38(b) wastes may be disposed of between December 19, 1994 and September 19, 1996	268.38(c)					
when the requirements of 268.38(a), (b), and (c) do not apply:	268.38(d)					
wastes meet applicable Part 268, Subpart D treatment standards	268.38(d)(1)					
exemption pursuant to a 268.6 petition	268.38(d)(2)					
wastes meet alternate treatment standards pursuant to 268.44	268.38(d)(3)					
granted an extension to the effective date of a prohibition pursuant to 268.5	268.38(d)(4)					
how to determine and who determines whether a hazardous waste identified in 268.38 exceeds applicable treatment standards specified in 268.40	268.38(e)					
SUBPART D - TREATMENT STANDARDS						
APPLICABILITY OF TREATMENT STANDARDS						
replace paragraph; when	268.40(a)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
a waste identified in "Treatment Standards for Hazardous Wastes" may be land disposed						
all hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste ("total waste standards")	268.40(a)(1)					
hazardous constituents in the extract of the waste or in the extract of the treatment residue must be at or below the values found in the table ("waste extract standards")	268.40(a)(2)					
waste must be treated using the technology specified in the table ("technology standard"), which are described in detail in 268.42, Table 1 - Technology Codes and Description of Technology-Based Standards	268.40(a)(3)					
replace paragraph; how to comply for wastewaters; how to comply for nonwastewaters; compliance for wastes covered by the waste exhaust standards; compliance for wastes covered by a technology standard	268.40(b)					
replace paragraph; treatment standards	268.40(c)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	when wastes with differing treatment standards are combined						
	replace paragraph; how treatment and disposal facilities demonstrate (and certify pursuant to 40 CFR 268.7(b)(5)) compliance with the treatment standards for organic constituents	268.40(d)					
	treatment standards were established based on incineration in units operated in accordance with Part 264, Subpart O or on combustion in fuel substitution units operating in accordance with applicable technical requirements	268.40(d)(1)					
	use of methods referenced in 268.40(d)(1) to treat organic constituents	268.40(d)(2)					
	demonstrate that good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in 268.40 by an order of magnitude	268.40(d)(3)					
vii	new paragraph; for characteristic wastes with treatment standards in the "Treatment Standards for Hazardous Wastes" Table, all underlying hazardous constituents must meed	268.40(e)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	Universal Treatment Standards						
	new paragraph; other wastes to which the treatment standards for F001-F005 nonwastewater constituents carbon disulfide, cyclohexanone, and/or methanol apply; how compliance is measured	268.40(f)					
3	insert new table "Treatment Standards for Hazardous Waste" at 60 FR 246 (January 3, 1995)	268.40/Table					
	TREATMENT STANDARDS EXPRESSED AS CONCENTRATIONS IN WASTE EXTRACT						
	replace entire section and Table CCWE with paragraph referring to 268.40	268.41 and Table CCWE	7045.1390	IBR			
	TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES						
	add note referring to 268.40 for the requirements previously found in 268.42, Tables 2 and 3	268.42 note	7045.1390	IBR			
	replace "Table 2 and Table 3 of this section" with "the table in § 268.40 "Treatment Standards for Hazardous Wastes", for which standards are expressed as a treatment method rather than a concentration level,"	268.42(a)					
3	insert entry for "CMBST", in alphabetical order, as	268.42(a)/Table 1					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
shown at 60 FR 302 (January 3, 1995)						
remove	268.42(a)/Table 2					
remove	268.42(a)/Table 3					
replace subparagraph; lab pack does not contain any Part 268, Appendix IV wastes	268.42(c)(2)					
replace paragraph; radioactive mixed wastes are subject to the treatment standards in 268.40; when standards are specified in Table of Treatment Standards, then those govern; where there is no specific standard for radioactive mixed waste, then the treatment standard for the hazardous waste applies; hazardous debris containing radioactive waste is subject to the 268.45 treatment standards	268.42(d)					
TREATMENT STANDARDS EXPRESSED AS WASTE CONCENTRATIONS						
replace section with a paragraph referring to 268.40	268.43	7045.1390	IBR			
remove	268.43/Table CCW					TREATMENT STANDARDS FOR HAZARDOUS DEBRIS

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	replace text starting with "for which BDAT..." with " or wastes for which treatment standards are established for the waste under §268.40"	268.45(b)(2)					
	ALTERNATIVE TREATMENT STANDARDS BASED ON HTMR						
	replace section including Table 1 with paragraph referring to 268.40	268.46	7045.1390	IBR			
	UNIVERSAL TREATMENT STANDARDS						
	Table UTS identifies the hazardous constituents along with the nonwastewater and wastewater treatment standard levels used to regulate most prohibited hazardous wastes with numerical limits; standards cannot be exceeded for determining compliance with treatment standards for underlying hazardous constituents as defined in 268.2(i); compliance measured by analysis of grab samples unless noted in table	268.48(a)	7045.1390	IBR			
3	add table titled "Table UTS - Universal Treatment Standards" including change made to the footnotes by 60 FR 242 (January 3, 1995)	268.48/Table UTS					
	APPENDIX IV TO PART 268						
	revise appendix, replacing the old list of hazardous waste codes	268/Appendix IV	7045.1390	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	with a paragraph containing a list of the EPA hazardous waste codes for hazardous wastes that may not be placed in lab packs under the alternative lab pack treatment standards at 268.42(c)						
	APPENDIX V TO PART 268						
	remove and reserve	268/Appendix V	7045.1390	IBR			
	APPENDIX X TO PART 268						
3,viii	add new appendix containing 1) a table addressing recordkeeping, notification, and/or certification requirements and 2) certification statements A-G; include amendment to Certification Statement B made by 60 FR 242, (January 3, 1995)	268/Appendix X	7045.1390	IBR			

---

i Note, in the September 19, 1994 FR article for this rule, there is an error in the internal references in this paragraph--"subparts A through N of parts 124, 264, 265, 268 and 270" should be "subparts A through N of parts 264 and 265, and parts 268, 270, and 124." The correct internal references are given on the checklist.

ii There is a typographical error in the September 19, 1994 FR article: the reference to "appendix IX" should be to "appendix XI." In the version of 266.100(c)(3)(i)(A) prior to this rule, the reference was to "appendix XI", but this rule incorrectly changed it to "appendix IX." States should not make this change. As such, this change was not listed on the checklist.

iii Amended by 60 FR 242 (January 3, 1995).

iv Note, there are two typographical errors in the September 19, 1994 FR article: there should be a ")" after "§268.2" and "(SW-846))" should be "(SW-846)".

v There appears to be an error in the January 3, 1995 amendment. The phrase "or State authorized to implement part 268 requirements" is printed twice in the same sentence. On the checklist, the second occurrence is not included.

vi Note that there is a typographical error in the Federal Register article for Revision Checklist 137 (59 FR 47982; September 19, 1994). There should be a closing parenthesis following the phrase "(as defined in 268.2(i)".

vii There is a typographical error in the September 19, 1994 FR article: there should be a ")" after "D043".

viii Note there is a typographical error in Certification Statement G. The beginning of the second sentence should read "I am aware that..." rather than "Am aware that...".

RCRA REVISION CHECKLIST 138
(WITHDRAWN)

Organic Air Emission Standards for Tanks,
Surface Impoundments, and Containers
59 FR 62896-62953
December 6, 1994
(HSWA provisions)

Note: This checklist has been withdrawn. Its applicable provisions are included in Revision Checklist 154 which is a consolidation all of the rules associated with the organic air emission standards for tanks, surface impoundments, and container requirements (Subpart CC). This consolidated revision checklist is placed in RCRA Cluster VII.

Attached is a memorandum from Bruce Jordan, EPA Office of Air Quality Planning and Standards, that strongly encourages States to not adopt the December 6, 1994 rule, as well as its related amendments, until the final amendment to the Subpart CC rule is issued. This amendment was published in in the Federal Register on November 25, 1996 at 61 FR 59931. EPA encourages States to adopt Revision Checklist 154 which includes all of the following notices: 59 FR 62896, December 6, 1994; 60 FR 26828, May 19, 1995; 60 FR 56952, November 13, 1995; 61 FR 28508, June 5, 1996; 60 FR 50426, September 29, 1995; 61 FR 4903, February 9, 1996; and 61 FR 59931, November 25, 1996.

RCRA REVISION CHECKLIST 140

Carbamate Production Identification and Listing of Hazardous Waste
60 FR 7824-7859
February 9, 1995
as amended at 60 FR 19165, April 17, 1995
and at 60 FR 25619, May 12, 1995
(RCRA Cluster V, HSWA provisions)

Note: 1) On August 8, 1995, EPA published an interpretive rule in the Federal Register (see 60 FR 41817-41818) regarding a change in the Agency's interpretation of the February 9, 1995 rule that lists wastes from carbamate production as hazardous wastes under RCRA. Under this new interpretation, wastes from the production of non-carbamate intermediates that are used exclusively in the production of carbamates but are not produced at the ultimate site of manufacture of the carbamates will not be subject to the February 9, 1995 rule. These wastes are among those given in the RCRA waste code designations K156 and K157 in that rule.

2) On November 1, 1996, the U.S. Court of Appeals for the District of Columbia Circuit (*Dithiocarbamate Task Force v. EPA,* CA DC 95-1249, 11/1/96) vacated the following carbamate wastes listed by the February 9, 1995 (60 FR 7824) listing rule: U277, U365, U366, U375, U376, U377, U378, U379, U381, U382, U383, U384, U385, U386, U390, U391, U392, U393, U396, U400, U401, U402, U403, U407, and K160. In addition, the court vacated K156, K157 and K158 in so far as they encompass 3-iodo-2-propynyl n-butylcarbamate (IPBC), which was listed as product waste U375. These vacated wastes are not included on this checklist, because they are no longer required for authorization for this rule. States may choose to list these wastes as a matter of State law. In this case, the State-listed wastes will be broader in scope or more stringent than the Federal requirements, depending on whether or not the listed wastes also exhibit a 40 CFR 261, Subpart C hazardous waste characteristic.

3) States that incorporate the CFR by reference should be careful in their incorporation, particularly those States that have a statutory or regulatory restriction against being more stringent or broader in scope than the Federal requirements, because the U.S. Court of Appeals' vacatur may not be transferable to State law. See the special guidance for States that incorporate by reference on the Summary for this checklist.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART A - GENERAL						
	DEFINITION OF HAZARDOUS WASTE						
†	remove period at end of paragraph; add "; or"	261.3(a)(2)(iv)(E)	7045.0102, E, (5)	X			

†[1]	add new paragraph which excludes as hazardous waste certain wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157); specific provisions which must be met	261.3(a)(2)(iv)(F)	7045.0102, E, (6)	X			
†	add new paragraph which excludes as hazardous waste certain wastewaters derived from the treatment of one or more of the wastes listed in 261.32--organic waste from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156); specific provisions which must be met	261.3(a)(2)(iv)(G)	7045.0102, E, (7)	X			

[1] K156, K157, and K158 were vacated by the U.S. Court of Appeals (*Dithiocarbamate Task Force v. EPA*, CA DC 95-1249, 11/1/96) to the extent that they encompass 3-iodo-2-propynyl n-butylcarbamate (IPBC), which was listed as product waste U375.

† add new paragraph which excludes as hazardous waste biological treatment sludge from the treatment of one of the wastes listed in 261.32--organic waste from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156), and wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157)	261.3(c)(2)(ii)(D)	NA			X	
SUBPART D--LISTS OF HAZARDOUS WASTES						
HAZARDOUS WASTE FROM SPECIFIC SOURCES						
add the following "K" wastes in alphanumeric order (by the first column) to the subgroup "Organic chemicals":	261.32	7045.0135, 1a, C	X IBR			

Industry and EPA hazardous waste No.	Hazard	Hazardous waste	code

* * * * * * *

Organic Chemicals:

* * * * * * *

K156 Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (T)

K157 Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (T)

K158 Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (T)

K159 Organics from the treatment of thiocarbamate wastes. (T)

K161 Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (R,T)

(This listing does not include K125 or K126.).

DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUES, AND SPILL RESIDUES THEREOF

[2], [3]	add the following "P" wastes in alphabetic order (by the third column)	261.33(e)	7045.0135, 1a, D	X IBR			

Hazardous waste No.	Chemical abstracts No.	Substance

* * * * * * * *

P203 1646-88-4 Aldicarb sulfone.

* * * * * * * *

P127 1563-66-2 7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate.

P188 57-64-7 Benzoic acid, 2-hydroxy-, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester (1:1).

* * * * * * * *

[2] Amended by 60 FR 19165 (April 17, 1995) and 60 FR 25619 (May 12, 1995).

[3] The May 12, 1995 Federal Register article corrected the CAS No. for "Mexacarbate." However, on page 25620 of this article, "Mexacarbamate" should be "Mexacarbate".

P189 55285-14-8 Carbamic acid, [(dibutylamino)- thio]methyl-, 2,3-dihydro-2,2-dimethyl- 7-benzofuranyl ester.
P191 644-64-4 Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]- 5-methyl-1H- pyrazol-3-yl ester.
P192 119-38-0 Carbamic acid, dimethyl-, 3-methyl-1- (1-methylethyl)-1H- pyrazol-5-yl ester.
P190 1129-41-5 Carbamic acid, methyl-, 3-methylphenyl ester.
P127 1563-66-2 Carbofuran.

* * * * * * * *

P189 5285-14-8 Carbosulfan.

* * * * * * * *

P202 64-00-6 m-Cumenyl methylcarbamate.

* * * * * * * *

P191 644-64-4 Dimetilan.

* * * * * * * *

P185 26419-73-8 1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O- [(methylamino)- carbonyl]oxime.

* * * * * * * *

P194 23135-22-0 Ethanimidothioc acid, 2-(dimethylamino)-N-[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester.

* * * * * * * *

P198 23422-53-9 Formetanate hydrochloride.
P197 17702-57-7 Formparanate.

* * * * * * * *

P192 119-38-0 Isolan.
P202 64-00-6 3-Isopropylphenyl N-methylcarbamate.

* * * * * * * *

P196 15339-36-3 Manganese, bis(dimethylcarbamodithioato-S,S')-,
P196 15339-36-3 Manganese dimethyldithiocarbamate.

* * * * * * * *

P198 23422-53-9 Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino)-carbonyl]oxy]phenyl]-, monohydrochloride.
P197 17702-57-7 Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino)carbonyl]oxy]phenyl]-
P199 2032-65-7 Methiocarb.

* * * * * * * *

P190 1129-41-5 Metolcarb.

* * * * * * * *

P128 315-18-4 Mexacarbate.

* * * * * * * *

P194 23135-22-0 Oxamyl.

* * * * * * * *

P128 315-18-4 Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester).
P199 2032-65-7 Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate

* * * * * * * *

P202 64-00-6 Phenol, 3-(1-methylethyl)-, methyl carbamate.

* * * * * * * *

P201 2631-37-0 Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate.

* * * * * * * *

P204 57-47-6 Physostigmine.
P188 57-64-7 Physostigmine salicylate.

* * * * * * * *

P201 2631-37-0 Promecarb
P203 1646-88-4 Propanal, 2-methyl-2-(methyl-sulfonyl)-, O-[(methylamino)carbonyl] oxime.

* * * * * * * *

P204 57-47-6 Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-.

* * * * * * * *

P185 26419-73-8 Tirpate.

* * * * * * * *

P205 137-30-4 Zinc, bis(dimethylcarbamodithioato-S,S')-,

* * * * * * * *

P205 137-30-4 Ziram.

---

add the following "U" wastes in alphabetic order (by the third column)	261.33(f)	7045.0135, 1a, D	X IBR			

Hazardous waste No.	Chemical abstracts No.	Substance
U394	30558-43-1	A2213.
	* * * * * * * *	
		U280 101-27-9 Barban.
		U278 22781-23-3 Bendiocarb.
		U364 22961-82-6 Bendiocarb phenol.
		U271 17804-35-2 Benomyl.
	* * * * * * * *	
U278	22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate.
U364	22961-82-6	1,3-Benzodioxol-4-ol, 2,2-dimethyl-,
U367	1563-38-8	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
	* * * * * * * *	
U372	10605-21-7	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.
U271	17804-35-2	Carbamic acid, [1-[(butylamino)carbonyl]-1H-benzimidazol-2-yl]-, methyl ester
U280	101-27-9	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester.
U373	122-42-9	Carbamic acid, phenyl-, 1-methylethyl ester.
U409	23564-05-8	Carbamic acid, [1,2-phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester.
	* * * * * * * *	
U389	2303-17-5	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester.
U387	52888-80-9	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester.
U279	63-25-2	Carbaryl.
U372	10605-21-7	Carbendazim.
U367	1563-38-8	Carbofuran phenol.
	* * * * * * * *	
U395	5952-26-1	Diethylene glycol, dicarbamate.
	* * * * * * * *	
U404	121-44-8	Ethanamine, N,N-diethyl-
	* * * * * * * *	
	U410 59669-26-0	Ethanimidothioic acid, N,N'- [thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester
	U394 30558-43-1	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester.
	* * * * * * * *	
U395	5952-26-1	Ethanol, 2,2'-oxybis-, dicarbamate.
	* * * * * * * *	

U279	63-25-2	1-Naphthalenol, methylcarbamate.
*	*	*
U411	114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate.
*	*	*
U373	122-42-9	Propham.
U411	114-26-1	Propoxur.
*	*	*
U410	59669-26-0	Thiodicarb.
*	*	*
U409	23564-05-8	Thiophanate-methyl.
*	*	*
U389	2303-17-5	Triallate.
*	*	*
U404	121-44-8	Triethylamine.
*	*	*

APPENDIX VII TO PART 261

BASIS FOR LISTING HAZARDOUS WASTE

add in alphanumeric order (by first column)	261, Appendix VII	7045.0139, 1	X IBR			

EPA hazardous waste No.	Hazardous constituents for which listed
K156	Benomyl, carbaryl, carbendazim, carbofuran, carbosulfan, formaldehyde, methylene chloride, triethylamine.
K157	Carbon tetrachloride, formaldehyde, methyl chloride, methylene chloride, pyridine, triethylamine.
K158	Benomyl, carbendazim, carbofuran, carbosulfan, chloroform, methylene chloride.
K159	Benzene, butylate, eptc, molinate, pebulate, vernolate.
K161	Antimony, arsenic, metam-sodium, ziram.

APPENDIX VIII TO PART 261

HAZARDOUS CONSTITUENTS

add in alphabetical order:	261, Appendix VIII	7045.0141, 1	X IBR			

Common Name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
*	*	*	*
A2213	Ethanimidothioic acid, 2- (dimethylamino) -N-hydroxy-2-oxo-, methyl ester	30558-43-1	U394
*	*	*	*
Aldicarb sulfone	Propanal, 2-methyl-2- (methylsulfonyl) -, O-[(methylamino) carbonyl] oxime	1646-88-4	P203
*	*	*	*
Barban	Carbamic acid, (3-chlorophenyl) -, 4-chloro-2-butynyl ester	101-27-9	U280
*	*	*	*
Bendiocarb	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methyl carbamate	22781-23-3	U278
Bendiocarb phenol	1,3-Benzodioxol-4-ol, 2,2-dimethyl-	22961-82-6	U364
Benomyl	Carbamic acid, [1- [(butylamino) carbonyl]- 1H-benzimidazol-2-yl] -, methyl ester	17804-35-2	U271
*	*	*	*
Carbaryl	1-Naphthalenol, methylcarbamate	63-25-2	U279
Carbendazim	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester	10605-21-7	U372
Carbofuran	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-, methylcarbamate	1563-66-2	P127
Carbofuran phenol	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-	1563-38-8	U367
*	*	*	*
Carbosulfan	Carbamic acid, [(dibutylamino) thio] methyl-, 2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester	55285-14-8	P189
*	*	*	*
m-Cumenyl methylcarbamate	Phenol, 3-(methylethyl)-, methyl carbamate	64-00-6	P202
*	*	*	*
Diethylene glycol, dicarbamate	Ethanol, 2,2'-oxybis-, dicarbamate	5952-26-1	U395
*	*	*	*
Dimetilan	Carbamic acid, dimethyl-, 1- [(dimethylamino) carbonyl]-5-methyl-1H-pyrazol-3-yl ester	644-64-4	P191
*	*	*	*
Formetanate hydrochloride	Methanimidamide, N,N-dimethyl-N'-[3-[[(methylamino) carbonyl]oxy]phenyl]-, monohydrochloride	23422-53-9	P198
*	*	*	*
Formparanate	Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methylamino) carbonyl]oxy]phenyl]-.	17702-57-7	P197
*	*	*	*
Isolan	Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester	119-38-0	P192
*	*	*	*

Manganese dimethyldithiocarbamate	Manganese, bis(dimethylcarbamodithioato-S,S')-,	15339-36-3	P196
Methiocarb	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate	2032-65-7	P199
Metolcarb	Carbamic acid, methyl-, 3-methylphenyl ester	1129-41-5	P190
Mexacarbate	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester)	315-18-4	P128
Oxamyl carbonyl]oxy]-2-oxo-, methyl ester	Ethanimidothioc acid, 2-(dimethylamino)-N-[[(methylamino)	23135-22-0	P194
Physostigmine	Pyrrolo[2,3-b]indol-5-01, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, methylcarbamate (ester), (3aS-cis)-	57-47-6	P204
Physostigmine salicylate	Benzoic acid, 2-hydroxy-, compd. with (3aS-cis) --1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b]indol-5-yl methylcarbamate ester (1:1).	57-64-7	P188
Promecarb	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate	2631-37-0	P201
Propham	Carbamic acid, phenyl-, 1-methylethyl ester	122-42-9	U373
Propoxur	Phenol, 2-(1-methylethoxy)-, methylcarbamate	114-26-1	U411
Prosulfocarb	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester	52888-80-9	U387
Thiodicarb carbonyloxy]] bis-, dimethyl ester.	Ethanimidothioic acid, N,N'-[thiobis [(methylimino)	59669-26-0	U410
Thiophanate-methyl dimethyl ester	Carbamic acid, [1,2-phyenylenebis (iminocarbonothioyl)] bis-,	23564-05-8	U409
Tirpate carbonyl] oxime.	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-, O-[(methylamino)	26419-73-8	P185
Triallate S-(2,3,3-trichloro-2-propenyl) ester	Carbamothioic acid, bis(1-methylethyl)-,	2303-17-5	U389
Triethylamine	Ethanamine, N,N-diethyl-	121-44-8	U404
Ziram	ZInc, bis(dimethylcarbamodithioato-S,S')-, (T-4)-	137-30-4	P205

RCRA REVISION CHECKLIST 151

Land Disposal Restrictions Phase III -
Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners
61 FR 15566-15660
April 8, 1996

as amended April 8, 1996, at 61 FR 15660-15668
April 30, 1996, 61 FR 19117
June 28, 1996, 61 FR 33680-33690
July 10, 1996, 61 FR 36419-36421
August 26, 1996, 61 FR 43924-43931
February 19, 1997 (62 FR 7502-7600)

(RCRA Cluster VI, HSWA provisions)

Notes: 1) On April 8, 1996 (61 FR 15566), EPA published the rule addressing the Phase III land disposal restrictions in the Federal Register. On the same day, at 61 FR 15660, EPA published a second rule that partially withdrew and amended the rule published at 61 FR 15566-15560. Subsequent to April 8, 1996, four technical amendments and corrections were published in the Federal Register. Due to the number of rules (seven total) that comprise Revision Checklist 151, a column has been added to this checklist that provides a reference to the rule that affected each provision. The rules are designated as follows:

Rule 151 :	April 8, 1996	(61 FR 15566-15660);
Rule 151.1:	April 8, 1996	(61 FR 15660-15668);
Rule 151.2:	April 30, 1996	(61 FR 19117);
Rule 151.3:	June 28, 1996	(61 FR 33680-33690);
Rule 151.4:	July 10, 1996	(61 FR 36419-36421);
Rule 151.5:	August 26, 1996	(61 FR 43924-43931); and
Rule 151.6:	February 19, 1997	(62 FR 7502-7600)

2) This Revision Checklist includes a national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088) at 268.39(c). Thus, as of January 8, 1997, KO88 wastes and soil or debris contaminated with these wastes were prohibited from land disposal. However, States should note that the national capacity variance has been extended by two subsequent rules. The January 14, 1997, final rule (62 FR 1992; Revision Checklist 155) extended the variance until July 8, 1997. The July 14, 1997, final rule (62 FR 37694; Revision Checklist 160) further extended the variance until October 8, 1997. Therefore, K088 wastes do not have to be treated to meet the Land Disposal Restrictions until October 8, 1997, instead of the January 8, 1997, deadline reflected in this Revision Checklist.

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 268 - LAND DISPOSAL RESTRICTIONS							
	SUBPART A - GENERAL							
	PURPOSE, SCOPE AND APPLICABILITY							
i	delete both occurrences of "from land disposal"; insert "or part 148 of this chapter" after "under this part, "	151.1 151.3	268.1(c)(3)	7045.1390	IBR			
ii	add "and" at end of text	151.1 151.3	268.1(c)(3)(i)		IBR			
	insert "identified in 40 CFR part 261, subpart C" after "waste"; replace "; and" with a period	151.1 151.3	268.1(c)(3)(ii)		IBR			
	remove	151.1 151.3	268.1(c)(3)(iii)		IBR			
iii	add new paragraph; wastes that exhibit a hazardous characteristic (except D003 reactive cyanide and those subject to a treatment method other than DEACT in 268.40) are not prohibited from land disposal if:	151.3	268.1(c)(4)		IBR			
	the wastes are managed in a treatment system with a permit under Clean Water Act (CWA) §402, or	151.3	268.1(c)(4)(i)		IBR			
	the wastes are treated under the pretreatment requirements of CWA §307, or	151.3	268.1(c)(4)(ii)		IBR			
	the wastes are managed in a zero discharge system engaged in	151.3	268.1(c)(4)(iii)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
CWA-equivalent treatment as defined in 268.37(a), and							
the wastes no longer exhibit a prohibited characteristic at the point of land disposal	151.3	268.1(c)(4)(iv)		IBR			
[151 changes to paragraph withdrawn by 151.1--use 1995 CFR for correct version]	151 151.1	268.1(e)(3)		IBR			
[151 changes to paragraph withdrawn by 151.1--use 1995 CFR for correct version]	151 151.1	268.1(e)(4)		IBR			
[subparagraphs added by 151 withdrawn by 151.1]	151 151.1	268.1(e)(4)(i)-(ii)		IBR			
[paragraph removed by 151 was reinstated by 151.1--use 1995 CFR for correct version]	151 151.1	268.1(e)(5)		IBR			
DEFINITIONS APPLICABLE IN THIS PART							
delete ", with the following exceptions:"; add an ending period	151	268.2(f)		IBR			
remove	151	268.2(f)(1)		IBR			
remove	151	268.2(f)(2)		IBR			
remove	151	268.2(f)(3)		IBR			
insert "fluoride, " before "vanadium"	151	268.2(i)		IBR			
add definition of inorganic metal-bearing waste	151 151.3	268.2(j)		IBR			
[definition added by 151 was withdrawn by 151.1]	151 151.1	268.2(k)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GE NT	BROADER IN SCOPE
[definition added by 151 was withdrawn by 151.1]	151 151.1	268.2(l)		IBR			
DILUTION PROHIBITED AS A SUBSTITUTE FOR TREATMENT							
[151 changes to paragraph withdrawn by 151.1--use 1995 CFR for correct version]	151 151.1	268.3(a)		IBR			
replace "a treatment system which treats" with "treatment systems which include land-based units which treat"; replace "or which treats wastes" with ", or which treat wastes in a CWA-equivalent treatment system, or which treat wastes"; replace "has been specified as the treatment standard in § 268.42" with "other than DEACT has been specified in § 268.40 as the treatment standard"	151 151.1 151.3	268.3(b)		IBR			
add new paragraph; combustion of hazardous waste codes listed in part 268 Appendix XI is prohibited unless the waste complies with one or more criteria of 268.3(c)(1)-(6)	151 151.1	268.3(c)		IBR			
add subparagraph; the waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard of 268.48	151 151.1	268.3(c)(1)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	add subparagraph; the waste consists of organic, debris-like materials contaminated with an inorganic metal-bearing hazardous waste	151 151.1	268.3(c)(2)		IBR			
	add subparagraph; the waste, at the point of generation, has reasonable heating value	151 151.1	268.3(c)(3)		IBR			
	add subparagraph; the waste is co-generated with wastes for which combustion is a required method of treatment	151 151.1	268.3(c)(4)		IBR			
	add subparagraph; the waste is subject to Federal and/or State requirements necessitating reduction of organics	151 151.1	268.3(c)(5)		IBR			
	add subparagraph; the waste contains greater than 1% Total Organic Carbon (TOC)	151 151.1	268.3(c)(6)		IBR			WASTE ANALYSIS AND RECORDKEEPING
iv	revise last sentence; replace "or the characteristic of corrosivity (D002), and is prohibited under § 268.37; and/or the characteristic of organic toxicity (D012-D043), and is prohibited under § 268.38" with "and/or the characteristic of corrosivity (D002),	151	268.7(a)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	and/or reactivity (D003), and/or the characteristic of organic toxicity (D012-D043), and is prohibited under § 268.37, § 268.38, and § 268.39"; insert "D003," before "D012-D043 wastes"							
v	insert "D003, and" after "D002"; remove "and in § 268.32 or RCRA section 3004(d)" after "D043"	151	268.7(a)(1)(ii)		IBR			
	replace "268.45;" at the end of the paragraph with "268.45; and"	151	268.7(a)(1)(iv)		IBR			
	replace "; and" at the end of the paragraph with a period	151	268.7(a)(1)(v)		IBR			
	remove	151	268.7(a)(1)(vi)		IBR			
	insert "D003, and" after "D002"; remove the comma following "and (f))"; remove "and in § 268.32 or RCRA section 3004(d)" after "D043"	151	268.7(a)(2)(i)(B)		IBR			
	insert "D003," after "D002"	151	268.7(a)(3)(ii)		IBR			
5	insert "D003, and" after "D002"; remove "and in § 268.32 or RCRA section 3004(d)" after "D043"; replace ending period with a semicolon	151	268.7(b)(4)(ii)		IBR			
	insert "D003," after "D002"	151	268.7(b)(5)(iv)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
add new subparagraph; certification for specified characteristic wastes that contain underlying hazardous constituents that are treated on-site	151	268.7(b)(5)(v)		IBR			
LANDFILL AND SURFACE IMPOUNDMENT DISPOSAL RESTRICTIONS							
vi remove and reserve	151	268.8		IBR			SPECIAL RULES REGARDING WASTES THAT EXHIBIT A CHARACTERISTIC
insert "this" before "part 268"; replace both occurrences of "40 CFR 261" with "40 CFR part 261"; replace both occurrences of "part 261" with "40 CFR part 261"; replace "the treatment standard for the waste" with "the treatment standard for the waste code" in the second sentence; replace the third sentence with a sentence requiring the generator to determine what underlying hazardous constituents are reasonably expected to be present above the universal treatment standards	151	268.9(a)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	[151 changes to paragraph withdrawn by 151.1--use 1995 CFR for correct version]	151 151.1	268.9(d)		IBR			
	[151 changes to paragraph withdrawn by 151.1--use 1995 CFR for correct version]	151 151.1	268.9(d)(1)(i)-(ii)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.9(d)(3)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.9(d)(3)(i)-(iv)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.9(e)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.9(f)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.9(g)		IBR			
	SUBPART C - PROHIBITIONS ON LAND DISPOSAL							
vii	WASTE SPECIFIC PROHIBITIONS--SPENT ALUMINUM POTLINERS; REACTIVE; AND CARBAMATE WASTES							
	specified wastes and soil and debris contaminated with these wastes are prohibited from land disposal as of July 8, 1996	151 151.1	268.39(a)		IBR			
viii	as of July 8, 1996, D003 wastes are prohibited from land disposal; exceptions	151 151.1	268.39(b)		IBR			
	K088 wastes and soil and	151	268.39(c)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GE NT	BROADER IN SCOPE
debris contaminated with these wastes are prohibited from land disposal as of January 8, 1997	151.1 151.2						
radioactive wastes mixed with specified wastes and soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal as of April 8, 1998	151 151.1	268.39(d)		IBR			
between July 8, 1996 and April 8, 1998, the wastes listed in 268.39(a),(c), and (d) may be disposed in a landfill or surface impoundment only if such unit complies with the requirements of 268.5(h)(2)	151 151.1 151.3	268.39(e)		IBR			
the requirements of 268.39(a)-(d) do not apply if:	151 151.1	268.39(f)		IBR			
the wastes meet the treatment standards specified in part 268 subpart D	151 151.1	268.39(f)(1)		IBR			
persons have been granted an exemption from a prohibition pursuant to a petition under 268.6, with respect to the wastes and units covered by the petition	151 151.1	268.39(f)(2)		IBR			
the wastes meet the applicable alternate treatment standards established pursuant to a	151 151.1	268.39(f)(3)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GE NT	BROADER IN SCOPE
petition granted under 268.44							
persons have been granted an extension to the effective date of a prohibition pursuant to 268.5, with respect to the wastes covered by the extension	151 151.1	268.39(f)(4)		IBR			
to determine whether a hazardous waste identified in 268.39 exceeds the applicable treatment standards specified in 268.40, the initial generator must test a sample of the waste extract, test the entire waste, or use knowledge of the waste; the waste is prohibited from land disposal, and part 268 requirements apply if the waste contains constituents exceeding part 268 subpart D levels, except as otherwise specified	151 151.1	268.39(g)		IBR			
SUBPART D - TREATMENT STANDARDS							
APPLICABILITY OF TREATMENT STANDARDS							
insert "prohibited" before "waste identified"	151.3	268.40(a)		IBR			
replace "(D001, D002" with "(D001-D003"; insert quotation marks before and after "Table UTS,"; insert "as defined in § 268.2(c) of this part" after "land disposal"	151 151.1 151.3	268.40(e)		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.40(e)(1)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.40(e)(2)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.40(e)(3)		IBR			
	[151 amendment adding subparagraph was withdrawn by 151.1]	151 151.1	268.40(e)(4)		IBR			
ix	add paragraph; between August 26, 1996 and August 26, 1997, the treatment standards for listed carbamate wastes and soil contaminated with those wastes may be satisfied by either meeting the constituent concentrations in 268.40 table "Treatment Standards for Hazardous Wastes" or by treating the waste using specified technologies	151.5	268.40(g)		IBR			
x	replace existing table "Treatment Standards for Hazardous Wastes" with the table found at 62 FR 7505-7595 (February 19, 1997)	151 151.1 151.3 151.4 151.5 151.6	268.40/Table		IBR			
	TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES							
	revise description of technology-based standards for CMBST; high temperature organic destruction technologies,	151	268.42 Table 1		IBR			VARIANCE FROM A TREAT

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
such as combustion in incinerators, boilers or industrial furnaces, and certain non-combustive technologies							MENT STAN DARD
[151 changes to paragraph withdrawn by 151.1--use 1995 CFR for correct version]	151 151.1	268.44(a)		IBR			
UNIVERSAL TREATMENT STANDARDS							
replace existing table with the table found at 62 FR 7596-7600 (February 19, 1997)	151 151.3 151.5 151.6	268.48(a)/Table UTS		IBR			
APPENDIX XI TO PART 268							
add new appendix: "Metal Bearing Wastes Prohibited From Dilution in a Combustion Unit According to 40 CFR 268.3(c)"	151	Appendix XI		IBR			

RCRA REVISION CHECKLIST 151: Land Disposal Restrictions Phase III - Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (cont'd)

---

i The second Federal Register article published on April 8, 1996, (61 FR 15660; rule 151.1) removed and reserved 268.1(c)(3) (see page 15663, column 1). The June 28, 1996, technical correction (61 FR 33680; rule 151.3), however, added a new 268.1(c)(3) that is very similar to the paragraph that existed in 40 CFR prior to the second April 8, 1996, amendment (rule 151.1). The changes noted on this checklist compare the June 28, 1996, (rule 151.3) version to the version found in the July 1, 1995, CFR. Note that the June 28, 1996, technical correction (rule 151.3) made no real changes to 268.1(c)(3)(i) and removed 40 CFR 268.1(c)(3)(iii).

ii There is a typographical error in the June 28, 1996, technical correction (61 FR 33680; rule 151.3): the internal reference "40 CFR 146.6(a)" should be 40 CFR "144.6(a)".

iii Note that the original 268.1(c)(4), as introduced by Revision Checklist 34 (51 FR 40572; November 7, 1986), was removed by Revision Checklist 66 (54 FR 36967; September 6, 1989). The June 28, 1996, technical correction in Revision Checklist 151 (61 FR 33680; rule 151.3) added a new 268.1(c)(4) and (c)(4)(i)-(iv).

iv There is a typographical error in the first April 8, 1996, Federal Register article (61 FR 15566; rule 151): in the last sentence, insert a closing parenthesis after "as defined in § 268.2". This error also appears in the July 1, 1996, CFR.

v There is a typographical error in the first April 8, 1996, Federal Register article (61 FR 15566; rule 151): "and (f)" should be "and (f))", i.e., there should be a second ")" after "(f)".

vi This section was removed and reserved by the first article published on April 8, 1996, (61 FR 15566; rule 151). Note, however, there are numerous internal references to this section throughout the CFR that were not removed.

vii This section was originally introduced by the first Federal Register article published on April 8, 1996, (61 FR 15566; rule 151). It was withdrawn and then re-added by the second article published on April 8, 1996, (61 FR 15660; rule 151.1). Paragraph 268.39(e) was subsequently revised by the June 28, 1996, technical correction (61 FR 33680; rule 151.3).

viii Note there is a typographical error in the second article published on April 8, 1996, (61 FR 15660; rule 151.1): "268.40))." should be "268.40).)".

ix There are two typographical errors in the August 26, 1996 Federal Register (61 FR 43924; rule

151.5): "biodegradation as definded by the technolgy code BIODG" should be "biodegradation as defined by the technology code BIODG".

x The original table in §268.40 was amended by rule 151, 151.1, 151.3, 151.4, and 151.5. The table was entirely replaced by the table in the February 19, 1997, Federal Register article (62 FR 7502; rule 151.6). The table below lists the errors associated with those rules.

Waste Code Number	Rule Reference (Federal Register page number)	Error(s)	Comment
F027	151 (p. 15610)	There is a typographical error in the Waste Description column: the last closing period should be placed inside of the last closing parenthesis.	This error is found in rules 151, 151.1, and 151.6. It is also found in the 1996 CFR.
F039	151 (p. 15613)	(1) The extra period at the end of the Waste Description should be removed.	(1) This error is found in rule 151 and 151.6. It is also found in the 1996 CFR.
	151 (p. 15615) 151.3 (p. 33686)	(2) The Nonwastewater Concentrations of 13 for "Diphenylamine" and "Diphenylnitrosamine" were changed to NA. Also, the Nonwastewater Concentration of 1.5 for 1,2-Diphenylhydrazine was changed to NA.	(2) It appears that the Nonwastewater Concentrations in rule 151 were replaced with "NA" by 151.3. The 1996 CFR, however, retains the rule 151 versions of these concentrations. Rule 151.6 kept "NA" as the Nonwastewater Concentrations.
endnote 8	151.3 (p. 33690)	There is a typographical error in the endnote: the last closing period should be placed inside of the last closing parenthesis.	This error is found in rules 151.3 and 151.6. It is also found in the 1996 CFR.
endnote 9	151.3 (p. 33690)	There is a typographical error in the endnote: the last closing period should be placed inside of the last closing parenthesis.	This error is found in rules 151.3 and 151.6. It is also found in the 1996 CFR.
	151.6 (p.7595)	The section symbol ("§") is omitted from the internal reference.	

RCRA REVISION CHECKLIST 154

Consolidated Organic Air Emission Standards for Tanks,
Surface Impoundments, and Containers
59 FR 62896-62953
December 6, 1994

as amended by
60 FR 26828-26829, May 19, 1995
60 FR 50426-50430, September 29, 1995
60 FR 56952-56954, November 13, 1995
61 FR 4903-4916, February 9, 1996
61 FR 28508-28511, June 5, 1996
61 FR 59932-59997, November 25, 1996

(RCRA Cluster VII, HSWA provisions)

Notes: 1) This special consolidated checklist addresses changes made to the Federal code by the December 6, 1994 final rule regarding Subpart CC standards (59 FR 62896), as well as six subsequent final rules. With the publication of the November 25, 1996 final rule, EPA is issuing this Consolidated Revision Checklist to aid States in correctly adopting the changes made by the seven rules. Note that the State modification deadline for this consolidated checklist is July 1, 1998 (or July 1, 1999 if a statutory change is necessary) based on the promulgation date of the most recent of the amendments.

2) Due to the large number of rules (seven total) that comprise Consolidated Revision Checklist 154, a "Rule" reference column has been added to this checklist to reflect the rule(s) that affected each provision. The rules are designated as follows:

154: 61 FR 59932-59997 (November 25, 1996)
154.1: 59 FR 62896-62953 (December 6, 1994) (Formerly Revision Checklist 138)
154.2: 60 FR 26828-26829 (May 19, 1995) (Formerly Revision Checklist 143)
154.3: 60 FR 50426-50430 (September 29, 1995) (Formerly Revision Checklist 146)
154.4: 60 FR 56952-56954 (November 13, 1995) (Formerly Revision Checklist 143, Rule 143.1)
154.5: 61 FR 4903-4916 (February 9, 1996) (Formerly Revision Checklist 149)
154.6: 61 FR 28508-28511 (June 5, 1996) (Formerly Revision Checklist 143, Rule 143.2)

3) Note that this checklist adds a new method to Appendix A of 40 CFR Part 60. This addition has been included because this method is referenced in Subpart CC of both Part 264 and Part 265. Thus, a State must either directly reference the method at 40 CFR Part 60, Appendix A or incorporate this method into its regulations and reference the method within its regulations. If the first approach is used, the State must make sure that its Administrative Procedures Act allows the State to reference the Federal regulations. While the following regulations/methods/appendices were not added by this rule, they are referenced in this new rule. A State, thus, must either directly reference these regulations/methods/appendices or incorporate them into its regulations and reference the appropriate State analog:

- 40 CFR part 60
  - Specific references noted:
    - 60.112(b)
    - 60.114(b)
    - Subpart VV
    - Appendix A

- 40 CFR part 61
  - Specific references noted:
    - 61.346(a)(1)
    - 61.346(b)(1) through (b)(3)
    - Subpart V

- 40 CFR part 63
  - Specific references noted:
    - Appendix A
    - Appendix C

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 60 - STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES							
APPENDIX A TO PART 60							
TEST METHOD							
add Method 25E-Determination of Vapor Phase Organic Concentration in Waste Samples	154.1	Appendix A	7017.2010	IBR			
PART 260 - HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL							
SUBPART B - DEFINITIONS							
REFERENCES							
add "API Publication 2517, Third Edition, February 1989, "Evaporative Loss from External Floating Roof Tanks""	154.1	260.11(a)	7045.0065, 1	IBR			
add "ASTM Standard Test Method for Vapor Pressure--Temperature Relationship & Initial Decomposition Temperature of Liquids by Isoteniscope"	154.1	260.11(a)	7045.0065, 1	Incorporated by reference (IBR)			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	change Federal Register address to "800 North Capitol Street, NW., Suite 700, Washington, DC."	154.1	260.11(b)	7045.0065, 1	IBR			
	PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE							
	SUBPART A - GENERAL							
	REQUIREMENTS FOR RECYCLABLE MATERIALS							
	replace "owners or operators" with "owners and operators"; delete "and" prior to "BB"; insert ", and CC" following "BB"	154	261.6(c)(1)	7045.0125, 9, A	X			
	PART 262 - STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE							
	SUBPART C - PRE-TRANSPORT REQUIREMENTS							
	ACCUMULATION TIME							
i	[no change] in containers and generator complies with Subpart I of Part 265; and/or	154.1 154.5 154	262.34(a)(1)(i)	7045.0292, 1, B	X			
1	[no change] in tanks and generator complies with Subpart J of Part 265, except 265.197(c) and 265.200; and/or	154.1 154	262.34(a)(1)(ii)	7045.0292, 1, B	X			
	insert "of this chapter" after "part 265"; change "§" to "§§"; insert "and 265.178" after "265.176"	154.1	262.34(d)(2)	7045.0292, 5, B	X			
	PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES							
	SUBPART B - GENERAL FACILITY STANDARDS							
	GENERAL WASTE ANALYSIS							
	add "264.1083," after "264.1063(d)"	154.1	264.13(b)(6)	7045.0458, 2, F	X			
	owners/operators seeking exemption to subpart CC air emission standards in accordance with 264.1082	154.1	264.13(b)(8)	7045.0458, 2, I	X			
	if direct measurement used for	154.1	264.13(b)(8)(i)	7045.0458, 2,	X			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	determination, procedures & schedules for waste sampling & analysis, & results of analysis to verify exemption	154.5		I, (1)				
	if knowledge of waste is used for waste determination, any information that is used as basis for knowledge	154.1 154.5	264.13(b)(8)(ii)	7045.0458, 2, I, ~~(1)~~ (2)	X			
	GENERAL INSPECTION REQUIREMENTS							
	remove the "and" preceding "264.1058"; add "264.1088, and 264.1091(b)" after "264.1058"	154.1	264.15(b)(4)	7045.0452, 5, C	X			
	SUBPART E - MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING							
	OPERATING RECORD							
	insert "and waste determinations" after "waste analyses"; add "264.1083," after "264.1063,"	154.1	264.73(b)(3)	7045.0478, 3, E	X			
ii	insert "of this part" after "subpart F"; replace "264.252-264.254" with "264.252 through 264.254"; replace "264.302-264.304" with "264.302 through 264.304"; replace "264.1034(c)-264.1034(f)" with "264.1034(c) through 264.304(f)"; replace "264.1063(d)-264.1063(i)" with "264.1063(c) through 264.1063(i)"; delete the "and" before "264.1064" and add "264.1088, 264.1089, and 264.1091" after "264.1064"	154.1	264.73(b)(6)	7045.0478, 3, H	X			
	ADDITIONAL REPORTS							
	remove "and" after "AA"; insert ", and CC of this part" after "BB"	154.1	264.77(c)	7045.0482, 4, C	X			
	SUBPART I - USE AND MANAGEMENT OF CONTAINERS							
	AIR EMISSION STANDARDS							
	owners/operators subject to applicable requirements of 264,	154.1 154	264.179	7045.0526, 10	X			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Subparts AA, BB, and CC, if they place hazardous waste in container							
SUBPART J - TANK SYSTEMS							
AIR EMISSION STANDARDS							
owners/operators subject to applicable requirements of 264, Subparts AA, BB, and CC if they place hazardous waste in a tank	154.1 154	264.200	7045.0528, 12	X			
SUBPART K - SURFACE IMPOUNDMENTS							
AIR EMISSION STANDARDS							
owners/operators subject to applicable requirements of 264, Subparts BB and CC if they place hazardous waste in surface impoundment	154.1 154	264.232	7045.0532, 11	X			
SUBPART X - MISCELLANEOUS UNITS							
ENVIRONMENTAL PERFORMANCE STANDARDS							
insert "and subparts AA through CC" after "subparts I through O"	154.1	264.601	7045.0539, 2	X			
SUBPART AA - AIR EMISSION STANDARDS FOR PROCESS VENTS							
APPLICABILITY							
delete first "§"; insert ", paragraphs" prior to "(d)"; remove hyphen in "10-ppmw"; insert "one of the following" at end of sentence	154	264.1030(b)	7045.0547	IBR			
replace "Units" with "A unit"; replace "are subject" with "is subject"; insert "40 CFR" before "part 270"	154	264.1030(b)(1)					
completely revise paragraph: unit not exempt from permitting under 262.34(a) & is located at a hazardous waste management facility subject to part 270, or	154	264.1030(b)(2)					
unit that is exempt from	154	264.1030(b)(3)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
permitting under 262.34(a)							
delete "262.34" from note at end of section	154	264.1030/note at end	7045.0547	IBR			
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES							
in second sentence, replace "18 months" with "30 months"	154.5	264.1033(a)(2)	7045.0547	IBR			
replace "at two locations and have" with "with"; replace first "^{o}C" with "degrees Celsius (^{o}C)"; replace "One temperature" with "The temperature"; replace ", and a second temperature sensor shall be installed at a location in the coolant fluid exiting the condenser" with "exit (i.e., product side)"	154	264.1033(f)(2)(vi)(B)					
add new paragraph: design requirements for closed-vent system are either:	154	264.1033(k)					
completely revise: to operate with no detectable emissions as determined by 264.1034(b) & visual inspections; or	154	264.1033(k)(1)					
completely revise: to operate at a pressure below atmospheric pressure; how to equip system	154.1 154.5 154	264.1033(k)(2)					
redesignate 264.1033(l) as 264.1033(m); add new 264.1033(l): owner/operator to monitor & inspect closed-vent system to ensure proper operation & maintenance by implementing following:	154	264.1033(l)					
closed-vent system used to comply with 264.1033(k)(1) shall be inspected & monitored in accordance with:	154	264.1033(l)(1)					
initial leak detection monitoring shall be conducted by owner/operator using procedures	154	264.1033(l)(1)(i)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
in 264.1034(b)							
owner/operator shall inspect & monitor the closed-vent system, after initial leak detection monitoring required in 264.1033(l)(1)(i)	154	264.1033(l)(1)(ii)	7045.0547	IBR			
	154	264.1033(l)(1)(ii)(A)					
	154	264.1033(l)(1)(ii)(B)					
in event that defect or leak is detected, the owner/operator shall repair in accordance with 264.1033(l)(3)	154	264.1033(l)(1)(iii)					
owner/operator shall maintain record of inspection & monitoring in accordance with 264.1035	154	264.1033(l)(1)(iv)					
a closed-vent system used to comply with 246.1033(k)(2) shall be inspected & monitored in accordance with specified requirements	154	264.1033(l)(2)					
	154	264.1033(l)(2)(i)					
	154	264.1033(l)(2)(ii)					
	154	264.1033(l)(2)(iii)					
	154	264.1033(l)(2)(iv)					
owner/operator shall repair all detected defects as follows:	154	264.1033(l)(3)					
detectable emissions shall be controlled as soon as practicable, but not later than 15 days after detection, except as in 264.1033(l)(3)(iii)	154	264.1033(l)(3)(i)					
first attempt at repair to be made no later than 5 days after emission is detected	154	264.1033(l)(3)(ii)					
when delay of closed-vent repair allowed; if repair is infeasible without shutdown or emissions resulting from repair are greater	154	264.1033(l)(3)(iii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	than those from delay, then repair shall be completed by end of next shutdown							
	owner/operator shall maintain record of repair in accordance with 264.1035	154	264.1033(l)(3)(iv)	7045.0547	IBR			
	redesignate former 264.1033(l) as (m)	154	264.1033(m)					
iii	owner/operator using carbon adsorption system shall document that carbon that is hazardous & removed from control device is managed in one of following manners:	154.1 154.5 154	264.1033(n)					
	regenerated or reactivated in a thermal treatment unit that meets one of following:	154.1 154.5 154	264.1033(n)(1)					
	owner/operator has been issued final permit under part 270, which implements subpart X requirements; or	154	264.1033(n)(1)(i)					
	unit is equipped with & operating air emission controls in accordance with subparts AA & CC of 264 or 265; or	154	264.1033(n)(1)(ii)					
	unit is equipped with & operating air emission controls in accordance with national emission standards of parts 61 or 63	154	264.1033(n)(1)(iii)					
	incinerated in a hazardous waste incinerator for which the owner/operator either:	154.1 154.5 154	264.1033(n)(2)					
	has been issued a final permit under part 270 which implements the requirements of subpart O; or	154.5 154	264.1033(n)(2)(i)					
	has designed & operates the incinerator in accordance with part 265, subpart O	154.5 154	264.1033(n)(2)(ii)					
	burned in a boiler or industrial	154.1	264.1033(n)(3)	7045.0547	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
furnace for which owner/operator either:	154.5 154						
has been issued a final permit under part 270 which implements part 266, subpart H ; or	154.5 154	264.1033(n)(3)(i)					
has designed & operates boiler or industrial furnace in accordance with part 266, subpart H	154.5 154	264.1033(n)(3)(ii)					
any components of a closed-vent system designated in 264.1035(c)(9) as unsafe are exempt from requirements of 264.1033(l)(1)(ii)(B) if:	154	264.1033(o)					
owner/operator determines that monitoring personnel would be in danger as a consequence of complying; &	154	264.1033(o)(1)					
owner/operator adheres to written plan requiring monitoring using procedure in 264.1033(l)(1)(ii)(B) as frequently as practicable	154	264.1033(o)(2)					
TEST METHODS AND PROCEDURES							
replace "§264.1033(k)" with "§264.1033(l) of this subpart"	154	264.1034(b)	7045.0547	IBR			
RECORDKEEPING REQUIREMENTS							
recordkeeping requirements for owner/operator designating any components of a closed-vent system as unsafe to monitor pursuant to 264.1033(o)	154	264.1035(c)(9)	7045.0547	IBR			
when each leak is detected as in 264.1033(l), the following shall be recorded:	154	264.1035(c)(10)					
instrument number, closed-vent system component ID number, & operator name, initials, or ID number	154	264.1035(c)(10)(i)					
date leak was detected & date of	154	264.1035(c)(10	7045.0547	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
first attempt to repair		)(ii)					
date of successful repair	154	264.1035(c)(10)(iii)					
maximum instrument reading by Method 21, part 60, Appendix A	154	264.1035(c)(10)(iv)					
"repair delayed" & reason for delay if not repaired within 15 days	154	264.1035(c)(10)(v)					
develop written procedure that identifies conditions that justify delay of repair	154	264.1035(c)(10)(v)(A)					
documentation requirement if repair delay was caused by depletion of stocked parts	154	264.1035(c)(10)(v)(B)					
replace "(c)(3)-(c)(8)" with "(c)(3) through (c)(10)"; replace "need be kept only 3 years" with "shall be maintained by the owner/operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record"	154	264.1035(d)					
SUBPART BB - AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS							
APPLICABILITY							
insert "one of the following" after "managed in"	154	264.1050(b)	7045.0548	IBR			
replace "Units that are" with "A unit that is"; insert "40 CFR" before "part 270"	154	264.1050(b)(1)					
completely revise subparagraph: unit not exempt from permitting under 262.34(a) & is located at a hazardous waste management facility otherwise subject to part 270, or	154	264.1050(b)(2)					
unit exempt from permitting under 262.34(a)	154	264.1050(b)(3)					
equipment that contains or	154	264.1050(f)	7045.0548	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
contacts hazardous waste with specific organic concentration is excluded from 264.1052-264.1060 if identified as required in 264.1064(g)(6)							
delete reference to "262.34" from note	154	264.1050/note at end					
STANDARDS: SAMPLING CONNECTION SYSTEMS							
replace “closed purge system” with “closed-purge, closed loop”; insert second & third sentences regarding reason for sample purge system & that gases displaced during filling do not require collection	154	264.1055(a)	7045.0548	IBR			
replace “system” following “closed-purge” with “, closed-loop,”; insert "of this section" following "paragraph (a)"; insert "meet one of the following requirements" after "shall"	154	264.1055(b)					
completely revise subparagraph: return purged process fluid directly to process line:	154	264.1055(b)(1)					
replace "hazardous waste stream with no detectable emissions to atmosphere," with "process fluid;"	154	264.1055(b)(2)					
completely revise subparagraph: be designed & operated to capture & transport purged process fluid to a waste management unit that complies with 264.1084-264.1086 or a control device that complies with 264.1060	154	264.1055(b)(3)					
insert "and sampling systems without purges" after "systems"	154	264.1055(c)					
STANDARDS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS							
exemption from the 265.1058(a) & 264.1064 requirements for	154	264.1058(e)	7045.0548	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	inaccessible, ceramic or ceramic-lined connectors							
	RECORDKEEPING REQUIREMENTS							
	identification of equipment that contains or contacts hazardous waste with certain characteristics	154	264.1064(g)(6)		IBR			
	SUBPART CC - AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS							
	APPLICABILITY							
iv	264, Subpart CC requirements apply to owners/operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers except as in 264.1 & 264.1080(b)	154.1	264.1080(a)	7045.0540	IBR			
	264, Subpart CC requirements do not apply to the following waste management units at the facility:	154.1	264.1080(b)					
	waste management unit that holds hazardous waste placed in it before October 6, 1996 & to which none is added on or after this date	154.1 154.2 154.4 154.6	264.1080(b)(1)					
	container with design capacity of less than or equal to 0.1 m^3	154.1	264.1080(b)(2)					
	tank to which an owner/operator has stopped adding hazardous waste & has begun implementing or completed closure pursuant to plan	154.1	264.1080(b)(3)					
	surface impoundment in which owner/operator has stopped adding hazardous waste & has begun implementing or completed closure pursuant to plan	154.1	264.1080(b)(4)					
	waste management unit used solely for on-site treatment or storage of hazardous waste	154.1	264.1080(b)(5)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	generated from remedial activities							
	waste management unit used solely for management of radioactive mixed waste	154.1	264.1080(b)(6)					
	hazardous waste management unit equipped with & operating air emission controls in accordance with Clean Air Act; a tank for which air emission control includes an enclosure must comply with 264.1084(i), except as in 264.1082(c)(5)	154	264.1080(b)(7)					
	tank with process vent as defined in 264.1031	154	264.1080(b)(8)					
	for owners/operators of a facility subject to 264, Subpart CC & who have received a final permit before October 6, 1996, 264, Subpart CC requirements are incorporated into a permit when reissued or reviewed; until such date owner/operator is subject to 265, Subpart CC requirements	154.1 154.2 154.4 154.6	264.1080(c)					
	administrative stay of subpart CC requirements, with exception of 264.1089(i), for tanks or containers used to manage hazardous waste from organic peroxide manufacturing & associated laboratory operations when owner/operator meets the specified conditions	154.3	264.1080(d)					
		154.3	264.1080(d)(1)					
		154.3	264.1080(d)(2)					
		154.3	264.1080(d)(3)					
	DEFINITIONS							
	264, Subpart CC terms have meanings given them in 265.1081, the Act, & Parts 260-266	154.1	264.1081	7045.0540	IBR			
	STANDARDS: GENERAL							
v	264.1082 applies to management of hazardous waste in tanks, surface impoundments, &	154.1 154	264.1082(a)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	containers subject to 264, Subpart CC							
	owner/operator shall control air pollutant emissions from waste management unit in accordance with 264.1084-1087, except as in 264.1082(c)	154.1 154	264.1082(b)					
	tank, surface impoundment, or container is exempt from 264.1084- 264.1087, provided that it is:	154.1 154	264.1082(c)					
	tank, surface impoundment, or container for which entering hazardous waste has average VO concentration at point of origination of less than 500 ppmw; how VO concentration is determined; frequency of reviews & updates	154.1 154	264.1082(c)(1)					
	tank, surface impoundment, or container for which the organic content of hazardous waste entering the waste management unit is reduced by organic destruction or removal that achieves any of the following conditions:	154.1 154	264.1082(c)(2)					
5	process that removes or destroys organics to level such that average VO concentration at the point of treatment < the exit concentration limit established for the process; how average VO concentration is determined	154.1 154	264.1082(c)(2)(i)					
	process that removes or destroys organics to level such that organic reduction efficiency $\geq$ 95% & average VO concentration at point of treatment is < 100 ppmw; how organic reduction efficiency & average VO concentration are determined	154.1 154	264.1082(c)(2)(ii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
vi	process that removes or destroys organics to level such that actual organic mass removal rate ≥ required organic mass removal rate established for the process; how required organic mass removal rate & actual organic mass removal rate are determined	154.1 154.5 154	264.1082(c)(2)(iii)	7045.0540	IBR			
5	biological process that destroys or degrades organics contained in hazardous waste such that either of following conditions is met:	154.1 154	264.1082(c)(2)(iv)					
	organic reduction efficiency for process ≥ 95% & organic biodegradation efficiency ≥ 95%; how organic reduction efficiency & biodegradation efficiency are determined	154.1 154	264.1082(c)(2)(iv)(A)					
5	total actual organic mass biodegradation rate for hazardous waste treated by the process ≥ required organic mass removal rate; how organic mass removal rate & actual mass biodegradation rate are determined	154.1 154	264.1082(c)(2)(iv)(B)					
	process that removes or destroys organics contained in hazardous waste & meets all of the specified conditions	154.1 154	264.1082(c)(2)(v)					
		154.1 154	264.1082(c)(2)(v)(A)					
		154.1 154	264.1082(c)(2)(v)(B)					
		154.1 154	264.1082(c)(2)(v)(C)					
vii	process that removes or destroys organics in hazardous waste to specified levels; specified levels to be determined using procedures in 264.1083(a)&(b)	154	264.1082(c)(2)(vi)					
7	hazardous waste incinerator for which owner/operator has either:	154.1 154	264.1082(c)(2)(vii)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	been issued a final permit under part 270 which implements subpart O; or	154.1 154	264.1082(c)(2)(vii)(A)					
	has designed & operates the incinerator in accordance with interim status requirements of part 265, subpart O	154.1 154	264.1082(c)(2)(vii)(B)					
7	boiler or industrial furnace for which owner/operator has either:	154.1 154	264.1082(c)(2)(viii)					
	been issued a final permit under part 270 which implements part 266, subpart H; or	154.1 154	264.1082(c)(2)(viii)(A)					
	designed & operates boiler or industrial furnace in accordance with interim status requirements of 266, subpart H	154.1 154	264.1082(c)(2)(viii)(B)					
	for determining performance of organic destruction process, owner/operator shall account for VO concentrations below detection limit by using following:	154	264.1082(c)(2)(ix)					
	if Method 25D in part 60, appendix A is used, 1/2 of blank value determined in the method	154	264.1082(c)(2)(ix)(A)					
	if other method used, 1/2 of detection limit established for the method	154	264.1082(c)(2)(ix)(B)					
	tank used for biological treatment of hazardous waste in accordance with 264.1082(c)(2)(iv)	154	264.1082(c)(3)					
	tank, surface impoundment, or container for which hazardous waste placed in unit that either:	154	264.1082(c)(4)					
	meets numerical concentration limits for organic constituents in 268.40; or	154	264.1082(c)(4)(i)					
	been treated as in 268.42(a), or by equivalent method pursuant to 268.42(b)	154	264.1082(c)(4)(ii)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	tank used for bulk feed of hazardous waste to an incinerator & all of following are met:	154	264.1082(c)(5)					
	tank is inside enclosure vented to control device designed & operated in accordance with part 61, subpart FF for facility generating ≥ 10 megagrams of benzene per year	154	264.1082(c)(5)(i)					
	tank's enclosure & control device installed & began operation prior to November 25, 1996 &	154	264.1082(c)(5)(ii)					
	enclosure designed & operated in accordance with 52.741, appendix B; allowance for openings; verification as specified in § 5.0	154	264.1082(c)(5)(iii)					
viii	Regional Administrator may perform, or request owner/operator to perform waste determination for hazardous waste managed in a tank, surface impoundment, or container exempt from air emission controls under 264.1082 as follows:	154.1 154	264.1082(d)					
	waste determination for average VO concentration of hazardous waste at point of origination shall be performed using direct measurement in accordance with 264.1083(a) requirements; how determination will be performed	154.1 154	264.1082(d)(1)					
ix	in performing waste determination pursuant to 264.1082(d)(1), sample preparation shall be conducted as follows:	154	264.1082(d)(2)					
	in accordance with method used by owner/operator, except as specified by 264.1082(d)(2)(ii)	154	264.1082(d)(2)(i)					
	if Regional Administrator determines owner/ operator's	154	264.1082(d)(2)(ii)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	methods inappropriate, then may choose appropriate one							
9	when owner/operator performs waste determination, Regional Administrator may have authorized representative observe sampling	154.1 154	264.1082(d)(3)					
9	if results of waste determination performed or requested by Regional Administrator do not agree with results of waste determination performed by owner/operator, then results of waste determination performed under 264.1082(d)(1) shall be used	154.1 154	264.1082(d)(4)					
9	if averaging period of greater than 1 hour used to determine average VO concentration of hazardous waste at point of origination, Regional Administrator can establish 264, Subpart CC compliance by performing or requesting that owner/operator perform a waste determination based on samples collected within 1-hour period as specified	154.1 154	264.1082(d)(5)					
		154.1 154	264.1082(d)(5)(i)					
		154.1 154	264.1082(d)(5)(ii)					
		154.1 154	264.1082(d)(5)(iii)					
	WASTE DETERMINATION PROCEDURES							
	waste determination procedure to determine average VO concentration of hazardous waste at point of origination	154.1 154	264.1083(a)	7045.0540	IBR			
x	average VO concentration at point of waste origination shall be determined for each hazardous waste placed in a unit exempted under 264.1082(c)(1) from using air emission controls in accordance with 264.1084-1087	154.1 154.5 154	264.1083(a)(1)					
	average VO concentration of hazardous waste at point of waste origination may be determined in	154.1 154	264.1083(a)(2)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	accordance with 265.1084(a)(2)-(4)							
xi	waste determination procedures for treated hazardous waste	154.1 154	264.1083(b)					
10	owner/operator shall perform applicable waste determination for each hazardous waste placed in a unit exempted under 264.1082(c)(2) from using air emission controls in accordance with 264.1084-1087	154.1 154.5 154	264.1083(b)(1)					
	the waste determination for a treated hazardous waste shall be performed in accordance with 265.1084(b)(2)-(9)	154.1 154	264.1083(b)(2)					
11	procedure to determine maximum organic vapor pressure of hazardous waste in a tank	154.1 154	264.1083(c)					
	owner/operator shall determine maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with 264.1084(c)	154.1 154	264.1083(c)(1)					
	maximum organic vapor pressure of hazardous waste may be determined in accordance with 265.1084(c)(2)-(4)	154.1 154	264.1083(c)(2)					
	procedure for determining no detectable organic emissions shall be conducted in accordance with 265.1084(d)	154	264.1083(d)					
xii	STANDARDS: TANKS							
	provisions of 264.1084 apply to control of air pollutant emissions from tanks for which 264.1082(b) references the use of 264.1084 for such air emission control	154	264.1084(a)	7045.0540	IBR			
	owner/operator shall control air pollutant emissions from each	154	264.1084(b)	7045.0540	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
tank subject to 264.1084 in accordance with the following:							
requirements for a tank that manages hazardous waste & meets the conditions in 264.1084(b)(1)(i)-(iii)	154	264.1084(b)(1)					
hazardous waste in the tank has maximum organic vapor pressure less than limit for tank's capacity category as specified	154	264.1084(b)(1)(i)					
	154	264.1084(b)(1)(i)(A)					
	154	264.1084(b)(1)(i)(B)					
	154	264.1084(b)(1)(i)(C)					
hazardous waste in the tank is not heated by owner/operator to temperature at which maximum organic vapor pressure is determined to comply with 264.1084(b)(1)(i)	154	264.1084(b)(1)(ii)					
hazardous waste in tank is not treated by owner/operator using waste stabilization process, as in 265.1081	154	264.1084(b)(1)(iii)					
requirements for tanks that do not meet 264.1084(b)(1)(i)-(iii)	154	264.1084(b)(2)					
owners/operators controlling air pollutant emissions from a tank using Tank Level 1 controls meet requirements in 264.1084(c)(1)-(c)(4)	154	264.1084(c)					
owner/operator to determine maximum organic vapor pressure for hazardous waste in tank using Tank Level 1 controls before placing waste in tank; maximum organic vapor pressure to be determined using 264.1083(c); when determinations shall be performed	154	264.1084(c)(1)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
tank shall be equipped with fixed roof designed to meet the following:	154	264.1084(c)(2)	7045.0540	IBR			
fixed roof & its closure devices shall form continuous barrier over surface of hazardous waste in the tank; what is a fixed roof	154	264.1084(c)(2)(i)					
installed without visible cracks, holes, gaps, or open spaces between joints/edges	154	264.1084(c)(2)(ii)					
openings shall be equipped with a closure device or connected by a closed-vent system	154	264.1084(c)(2)(iii)					
	154	264.1084(c)(2)(iii)(A)					
	154	264.1084(c)(2)(iii)(B)					
fixed roof & its closure devices shall consist of materials to minimize exposure of hazardous waste to atmosphere, & maintain integrity throughout service life; factors for selecting materials	154	264.1084(c)(2)(iv)					
when hazardous waste is in the tank, fixed roof shall be installed with closure device secured in closed position except:	154	264.1084(c)(3)					
opening of closure devices or removal of fixed roof is allowed to provide access or to remove accumulated sludge	154	264.1084(c)(3)(i)					
	154	264.1084(c)(3)(i)(A)					
	154	264.1084(c)(3)(i)(B)					
opening of pressure relief devices which vent to the atmosphere during normal operations to maintain internal pressure; designed to operate with no detectable emissions when closed;	154	264.1084(c)(3)(ii)	7045.0540	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
remain in closed position when internal pressure is within operating range determined by owner/operator; normal operating conditions							
opening of safety device allowed to avoid an unsafe condition	154	264.1084(c)(3)(iii)					
owner/operator shall inspect & monitor air emission control equipment as follows:	154	264.1084(c)(4)					
fixed roof & closure devices to be visually inspected for defects; examples	154	264.1084(c)(4)(i)					
initial inspection of fixed roof & closure devices on or before tank is subject to 264.1084; then at least once a year except under 264.1084(l)	154	264.1084(c)(4)(ii)					
in event of defect, shall be repaired in accordance with 264.1084(k)	154	264.1084(c)(4)(iii)					
owner/operator shall maintain inspection record in accordance with 264.1089(b)	154	264.1084(c)(4)(iv)					
owners/operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following:	154	264.1084(d)					
fixed-roof tank equipped with internal floating roof in accordance with 264.1084(e);	154	264.1084(d)(1)					
tank equipped with external floating roof in accordance with 264.1084(f);	154	264.1084(d)(2)					
tank vented through a closed-vent system to control device in accordance with 264.1084(g);	154	264.1084(d)(3)	7045.0540	IBR			
pressure tank designed & operated in accordance with 264.1084(h);	154	264.1084(d)(4)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
or							
tank inside an enclosure vented through a closed-vent system to an enclosed combustion control device in accordance with 264.1084(i)	154	264.1084(d)(5)					
owner/operator who controls emissions from a tank using a fixed roof with internal floating roof shall meet 264.1084(e)(1)-(3) requirements	154	264.1084(e)					
tank shall be equipped with fixed roof & internal floating roof in accordance with the following:	154	264.1084(e)(1)					
internal floating roof shall be designed to float on liquid surface except when supported by leg supports	154	264.1084(e)(1)(i)					
internal floating roof shall be equipped with continuous seal that meets specified conditions	154	264.1084(e)(1)(ii)					
	154	264.1084(e)(1)(ii)(A)					
	154	264.1084(e)(1)(ii)(B)					
internal floating roof shall meet listed specifications	154	264.1084(e)(1)(iii)					
	154	264.1084(e)(1)(iii)(A)					
	154	264.1084(e)(1)(iii)(B)					
	154	264.1084(e)(1)(iii)(C)					
	154	264.1084(e)(1)(iii)(D)	7045.0540	IBR			
	154	264.1084(e)(1)(iii)(E)					
	154	264.1084(e)(1)(					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
		iii)(F)					
owner/operator shall operate the tank in accordance with the following:	154	264.1084(e)(2)					
when floating roof is resting on leg supports, filling, emptying, or refilling shall be continuous & completed as soon as practical	154	264.1084(e)(2)(i)					
automatic bleeder vents to be closed at all times when roof is floating, except when roof is being floated off or landed on leg supports	154	264.1084(e)(2)(ii)					
prior to filling tank, openings in internal floating roof shall be closed; rim space vents open only when internal floating roof is not floating or when pressure exceeds manufacturer's recommended setting	154	264.1084(e)(2)(iii)					
owner/operator shall inspect internal floating roof in accordance with the following:	154	264.1084(e)(3)					
floating roof & its closure devices shall be visually inspected for defects which could result in air pollutant emissions; potential defects	154	264.1084(e)(3)(i)					
owner/operator shall inspect internal floating roof components with specified visual inspections except as provided in 264.1084(e)(3)(iii)	154	264.1084(e)(3)(ii)					
	154	264.1084(e)(3)(ii)(A)					
	154	264.1084(e)(3)(ii)(B)					
as alternative to 264.1084(e)(3)(ii) inspections for internal floating roof equipped with two continuous seals, owner/operator may perform visual inspection each time tank is emptied &	154	264.1084(e)(3)(iii)	7045.0540	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
degassed & at least every 5 years							
before 264.1084(e)(3)(ii)-(iii) inspections, owner/operator shall notify Regional Administrator in advance to allow for observer during the inspection; & notify Regional Administrator of date & location of inspection	154	264.1084(e)(3)(iv)					
	154	264.1084(e)(3)(iv)(A)					
	154	264.1084(e)(3)(iv)(B)					
in event of a defect, it shall be repaired in accordance with 264.1084(k)	154	264.1084(e)(3)(v)					
owner/operator shall maintain inspection record in accordance with 264.1089(b)	154	264.1084(e)(3)(vi)					
owner/operator who controls emissions from tank using external floating roof shall meet requirements in 264.1084(f)(1)-(3)	154	264.1084(f)					
owner/operator shall design external floating roof in accordance with the following:	154	264.1084(f)(1)					
external floating roof designed to float on liquid surface except when supported by leg supports	154	264.1084(f)(1)(i)					
floating roof equipped with two continuous seals; the lower seal referred to as primary seal & upper seal as secondary seal	154	264.1084(f)(1)(ii)					
	154	264.1084(f)(1)(ii)(A)					
	154	264.1084(f)(1)(ii)(B)					
external floating roof shall meet certain specifications	154	264.1084(f)(1)(iii)	7045.0540	IBR			
	154	264.1084(f)(1)(iii)(A)					
	154	264.1084(f)(1)(iii)(B)					
	154	264.1084(f)(1)(					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
		iii)(C)					
	154	264.1084(f)(1)(iii)(D)					
	154	264.1084(f)(1)(iii)(E)					
	154	264.1084(f)(1)(iii)(F)					
	154	264.1084(f)(1)(iii)(G)					
	154	264.1084(f)(1)(iii)(H)					
	154	264.1084(f)(1)(iii)(I)					
owner/operator shall operate tank in accordance with the following:	154	264.1084(f)(2)					
when floating roof resting on leg supports, filling, emptying, or refilling shall be continuous & completed as soon as practical	154	264.1084(f)(2)(i)					
except for automatic bleeder vents, rim space vents, roof drains, & leg sleeves, roof openings shall be secured & closed at all times except when closure device must be open for access	154	264.1084(f)(2)(ii)					
covers on each access hatch & gauge float well shall be bolted or fastened if in closed position	154	264.1084(f)(2)(iii)					
automatic bleeder vents to be closed at all times when roof floating, except when roof is being floated off or landed on leg supports	154	264.1084(f)(2)(iv)					
rim space vents shall be open only when roof is being floated off the leg supports or when pressure beneath rim seal exceeds manufacturer's recommended	154	264.1084(f)(2)(v)	7045.0540	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
setting							
cap on end of unslotted guide poles shall be closed at all times except when measuring liquid level or collecting samples	154	264.1084(f)(2)(vi)					
cover on each gauge hatch or sample well shall be closed at all times except when hatch or well must be accessed	154	264.1084(f)(2)(vii)					
both primary & secondary seals shall completely cover annular space between external floating roof & tank wall in continuous fashion except during inspections	154	264.1084(f)(2)(viii)					
owner/operator shall inspect external floating roof in accordance with the following:	154	264.1084(f)(3)					
owner/operator shall measure external floating roof seal gaps in accordance with specified requirements	154	264.1084(f)(3)(i)					
	154	264.1084(f)(3)(i)(A)					
	154	264.1084(f)(3)(i)(B)					
	154	264.1084(f)(3)(i)(C)					
	154	264.1084(f)(3)(i)(D)					
	154	264.1084(f)(3)(i)(D)(*1*)					
	154	264.1084(f)(3)(i)(D)(*2*)	7045.0540	IBR			
	154	264.1084(f)(3)(i)(D)(*3*)					
	154	264.1084(f)(3)(i)(D)(*4*)					
	154	264.1084(f)(3)(i)(E)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	154	264.1084(f)(3)(i)(F)					
owner/operator shall visually inspect external floating roof in accordance with specified requirements	154	264.1084(f)(3)(ii)					
	154	264.1084(f)(3)(ii)(A)					
	154	264.1084(f)(3)(ii)(B)					
	154	264.1084(f)(3)(ii)(C)					
	154	264.1084(f)(3)(ii)(D)					
prior to 264.1084(f)(3)(i) or (ii) inspections, owner/operator shall notify Regional Administrator in advance to allow for observer present during inspection; & notify of date & location of inspection	154	264.1084(f)(3)(iii)					
	154	264.1084(f)(3)(iii)(A)					
	154	264.1084(f)(3)(iii)(B)					
	154	264.1084(f)(3)(iii)(C)					
owner/operator who controls air pollutant emissions from a tank by venting to a control device shall meet requirements in 264.1084(g)(1)-(3)	154	264.1084(g)					
tank shall be covered by fixed roof and vented directly to a control device in accordance with the following:	154	264.1084(g)(1)					
fixed roof & closure devices shall form continuous barrier over liquid in tank	154	264.1084(g)(1)(i)	7045.0540	IBR			
each opening in fixed roof not vented to control device shall be equipped with closure device; when pressure in vapor headspace < atmospheric pressure; when	154	264.1084(g)(1)(ii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
pressure in vapor headspace ≥ atmospheric pressure							
fixed roof & its closure devices shall be made of suitable materials that will minimize exposure to atmosphere & maintain integrity throughout service life; factors to consider when selecting materials	154	264.1084(g)(1)(iii)					
the closed-vent system & control device shall be designed & operated in accordance with 264.1087	154	264.1084(g)(1)(iv)					
whenever hazardous waste is in the tank, fixed roof shall be installed with closure device secured in closed position except:	154	264.1084(g)(2)					
venting to control device is not required, & opening of closure device or removal of fixed roof is allowed in specified circumstances	154	264.1084(g)(2)(i)					
	154	264.1084(g)(2)(i)(A)					
	154	264.1084(g)(2)(i)(B)					
opening of a safety device, as defined in 265.1081, is allowed any time to avoid an unsafe condition	154	264.1084(g)(2)(ii)					
owner/operator shall inspect & monitor air emission control equipment as follows:	154	264.1084(g)(3)					
fixed roof & its closure devices shall be visually inspected for defects; examples	154	264.1084(g)(3)(i)	7045.0540	IBR			
closed-vent system & control device shall be inspected & monitored in accordance with 264.1087	154	264.1084(g)(3)(ii)					
perform initial inspection of air emission control equipment on or before tank becomes subject to	154	264.1084(g)(3)(iii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
264.1084; then at least once a year except under special conditions of 264.1084(l)							
in event of defect, it shall be repaired in accordance with 264.1084(k)	154	264.1084(g)(3)(iv)					
owner/operator shall maintain inspection record in accordance with 264.1089(b)	154	264.1084(g)(3)(v)					
owner/operator who controls air pollutant emissions by using a pressure tank shall meet the following:	154	264.1084(h)					
tank shall not be designed to vent to atmosphere as result of compression in vapor headspace during filling	154	264.1084(h)(1)					
tank openings shall be equipped with closure devices that operate with no detectable organic emissions as in 264.1083(d)	154	264.1084(h)(2)					
whenever hazardous waste is in the tank, it shall be operated as a closed system that does not vent to the atmosphere except if safety device requires opening to avoid an unsafe condition	154	264.1084(h)(3)					
owner/operator who controls air pollutant emissions by using enclosure vented through a closed-vent system to enclosed combustion control device shall meet requirements in 264.1084(i)(1)-(4)	154	264.1084(i)					
tank shall be inside enclosure; enclosure shall be designed & operated in accordance with 52.741, appendix B; allowance for openings; perform verification as specified in Section 5.0	154	264.1084(i)(1)	7045.0540	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
enclosure shall be vented through a closed-vent system to enclosed combustion control device designed & operated in accordance with certain standards specified in 264.1087	154	264.1084(i)(2)					
safety devices, defined in 265.1081, may be installed & operated on any enclosure, closed-vent system, or control device used to comply with 264.1084(i)(1)-(2)	154	264.1084(i)(3)					
owner/operator shall inspect & monitor the closed-vent system & control device as specified in 264.1087	154	264.1084(i)(4)					
owner/operator shall transfer hazardous waste to tank subject to 264.1084 in accordance with the following:	154	264.1084(j)					
transfer of hazardous waste, except as in 264.1084(j)(2), to tank from another tank subject to 264.1084 or from surface impoundment subject to 264.1085 shall use continuous hard-piping or another closed system; individual drain system	154	264.1084(j)(1)					
264.1084(j)(1) requirements do not apply if transferring hazardous waste to tank under following:	154	264.1084(j)(2)					
hazardous waste meets average VO concentration conditions in 264.1082(c)(1) at point of waste origination	154	264.1084(j)(2)(i)	7045.0540	IBR			
hazardous waste treated by an organic destruction or removal process to meet 264.1082(c)(2) requirements	154	264.1084(j)(2)(ii)					
owner/operator shall repair each defect detected during inspections	154	264.1084(k)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	performed under 264.1084(c)(4), (e)(3), (f)(3), or (g)(3) as follows:							
	owner/operator shall make first efforts at repair no later than 5 days after detection & repair shall be completed no later than 45 days after detection except as in 264.1084(k)(2)	154	264.1084(k)(1)					
	repairs may be delayed beyond 45 days if repair requires emptying or temporary removal from service & no alternative tanks are available; owner/ operator shall repair the defect as soon as tank stops operation; repair shall be completed before resuming operation	154	264.1084(k)(2)					
	after initial inspection & monitoring of cover pursuant to Subpart CC, inspection & monitoring may be at intervals longer than 1 year under the following conditions:	154	264.1084(l)					
	if inspecting or monitoring exposes a worker to dangerous, hazardous, or other unsafe conditions, the owner/operator may designate cover as unsafe & comply with the following:	154	264.1084(l)(1)					
	prepare written explanation	154	264.1084(l)(1)(i)					
	develop & implement written plan & schedule to inspect & monitor	154	264.1084(l)(1)(ii)	7045.0540	IBR			
	if tank is buried partially or entirely, owner/operator must inspect & monitor only portions of cover that are located on or above ground	154	264.1084(l)(2)					
12	STANDARDS: SURFACE IMPOUNDMENTS							
	264.1085 provisions apply to	154	264.1085(a)	7045.0540	IBR			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
control of air pollutant emissions from surface impoundments for which 264.1082(b) references this section							
owner/operator shall control air pollutant emissions from surface impoundment by installing & operating either:	154	264.1085(b)					
floating membrane cover in accordance with 264.1085(c); or	154	264.1085(b)(1)					
cover vented through a closed-vent system to a control device in accordance with 264.1085(d)	154	264.1085(b)(2)					
owner/operator who controls emissions from a surface impoundment using a floating membrane cover shall meet requirements in 264.1085(c)(1)-(3)	154	264.1085(c)					
surface impoundment shall be equipped with floating membrane cover designed to meet the following:	154	264.1085(c)(1)					
designed to float on the liquid surface during normal operations & form a continuous barrier	154	264.1085(c)(1)(i)					
fIBRicated from synthetic membrane material with certain specifications	154	264.1085(c)(1)(ii)					
	154	264.1085(c)(1)(ii)(A)					
	154	264.1085(c)(1)(ii)(B)	7045.0540	IBR			
installed without visible cracks, holes, gaps, or open spaces between cover edges or foundation mountings	154	264.1085(c)(1)(iii)					
except as in 264.1085(c)(1)(v), openings in floating membrane cover shall be equipped with a	154	264.1085(c)(1)(iv)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
closure device that does not allow for open spaces in the closure device or between the opening & device							
floating membrane cover may be equipped with emergency cover drains; drains shall be equipped with slotted membrane fIBRic cover or flexible fIBRic sleeve seal	154	264.1085(c)(1)(v)					
closure devices shall consist of materials to minimize exposure of hazardous waste to atmosphere & maintain integrity throughout service life; factors to consider when selecting materials	154	264.1085(c)(1)(vi)					
whenever hazardous waste is in surface impoundment, floating membrane cover shall float on liquid & each closure device in closed position except:	154	264.1085(c)(2)					
opening of closure devices or removal of the cover allowed to provide access to surface impoundment or to remove accumulated sludge	154	264.1085(c)(2)(i)					
	154	264.1085(c)(2)(i)(A)					
	154	264.1085(c)(2)(i)(B)					
opening of safety device allowed to avoid an unsafe condition	154	264.1085(c)(2)(ii)					
owner/operator shall inspect floating membrane cover as follows:	154	264.1085(c)(3)					
floating membrane cover & closure devices shall be visually inspected for defects; examples	154	264.1085(c)(3)(i)	7045.0540	IBR			
perform initial inspection of floating membrane cover & closure devices on or before surface impoundment is subject to 264.1085; then at least once a year	154	264.1085(c)(3)(ii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
except under 264.1085(g)							
in event of defect, it shall be repaired in accordance with 264.1085(f)	154	264.1085(c)(3)(iii)					
owner/operator shall maintain inspection record in accordance with 264.1089(c)	154	264.1085(c)(3)(iv)					
owner/operator who controls air pollutant emissions from a surface impoundment using a cover vented to control device shall meet 264.1085(d)(1)-(3) requirements	154	264.1085(d)					
surface impoundment covered & vented directly to control device in accordance with the following:	154	264.1085(d)(1)					
cover & closure devices shall form a continuous barrier over liquid in the surface impoundment	154	264.1085(d)(1)(i)					
openings in the cover not vented to control device equipped with closure device; if pressure in vapor headspace < atmospheric pressure; if pressure in vapor headspace ≥ atmospheric pressure	154	264.1085(d)(1)(ii)					
cover & closure devices shall be made of suitable materials to minimize exposure to atmosphere & maintain integrity throughout service life; factors to consider when selecting materials	154	264.1085(d)(1)(iii)					
closed-vent system & control device shall be designed & operated in accordance with 264.1087	154	264.1085(d)(1)(iv)	7045.0540	IBR			
when hazardous waste is in surface impoundment, cover shall be installed with closure device in closed position except:	154	264.1085(d)(2)					
venting to control device not	154	264.1085(d)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
		(2)(i)					
required, & opening of closure device or removal of cover is allowed in specified circumstances	154	264.1085(d)(2)(i)(A)					
	154	264.1085(d)(2)(i)(B)					
opening of safety device, as in 265.1081, allowed to avoid an unsafe condition	154	264.1085(d)(2)(ii)					
owner/operator shall inspect & monitor air emission control equipment as follows:	154	264.1085(d)(3)					
surface impoundment cover & closure devices shall be visually inspected for defects; examples	154	264.1085(d)(3)(i)					
closed-vent system & control device shall be inspected & monitored in accordance with 264.1087	154	264.1085(d)(3)(ii)					
initial inspection of air emission control equipment on or before the surface impoundment is subject to 264.1085; then at least once a year except under 264.1085(g)	154	264.1085(d)(3)(iii)					
in event of defect, it shall be repaired in accordance with 264.1085(f)	154	264.1085(d)(3)(iv)					
owner/operator shall maintain inspection record in accordance with 264.1089(c)	154	264.1085(d)(3)(v)					
owner/operator shall transfer hazardous waste to surface impoundment subject to 264.1085 in accordance with:	154	264.1085(e)	7045.0540	IBR			
transfer of hazardous waste, except as in 264.1085(e)(2), to surface impoundment from another surface impoundment subject to 264.1085 or from a tank subject to 264.1084 shall use	154	264.1085(e)(1)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
continuous hard-piping or another closed system; individual drain system							
264.1085(e)(1) requirements do not apply when transferring a hazardous waste to surface impoundment under the following:	154	264.1085(e)(2)					
hazardous waste meets average VO concentration conditions in 264.1082(c)(1) at point of origination	154	264.1085(e)(2)(i)					
hazardous waste treated by organic destruction or removal process to meet 264.1082(c)(2) requirements	154	264.1085(e)(2)(ii)					
owner/operator repair each defect detected during inspections performed in accordance with 264.1085(c)(3) or (d)(3) as follows:	154	264.1085(f)					
owner/operator shall make first efforts at repair no later than 5 days after detection & repair shall be completed no later than 45 days after detection except as in 264.1085(f)(2)	154	264.1085(f)(1)					
repairs may be delayed beyond 45 days if require emptying or temporary removal from service & no alternative capacity is available; if so, owner/operator shall repair defect as soon as process generating hazardous waste in surface impoundment stops operation; repair completed before resuming operation	154	264.1085(f)(2)					
following initial inspection & monitoring of cover as required by Subpart CC, inspection & monitoring at intervals longer than 1 year under following conditions:	154	264.1085(g)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	written explanation stating why cover is unsafe, if required	154	264.1085(g)(1)					
	develop & implement written plan & schedule to inspect & monitor cover	154	264.1085(g)(2)					
12	STANDARDS: CONTAINERS							
	264.1086 applies to control of air pollutant emissions from containers for which 264.1082(b) references this section	154	264.1086(a)	7045.0540	IBR			
	general requirements	154	264.1086(b)					
xiii	owner/operator shall control air pollutant emissions from each container subject to 264.1086 in accordance with the following:	154	264.1086(b)(1)					
	for containers having design capacities greater than 0.1 m^3 & less than or equal to 0.46 m^3, owner/operator shall control air pollutant emissions in accordance with Container Level 1 standards in 264.1086(c)	154	264.1086(b)(1)(i)					
	for containers having design capacities greater than 0.46 m^3 not in light material service, owner/operator shall control air pollutant emissions in accordance with Container Level 1 standards in 264.1086(c)	154	264.1086(b)(1)(ii)					
	for containers having design capacities greater than 0.46 m^3 in light material service, owner/operator shall control air pollutant emissions in accordance with Container Level 2 standards in 264.1086(d)	154	264.1086(b)(1)(iii)					
	when containers with design capacities greater than 0.1 m^3 are used for treatment of hazardous waste by waste stabilization	154	264.1086(b)(2)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	process, owner/ operator shall control air pollutant emissions in accordance with Container Level 3 standards in 264.1086(e)							
	Container Level 1 standards	154	264.1086(c)					
13	using Container Level 1 controls is one of the following:	154	264.1086(c)(1)					
	meets applicable U.S. DOT regulations on packaging for transportation as in 264.1086(f)	154	264.1086(c)(1)(i)					
	equipped with cover & closure devices that form a continuous barrier over openings such that there are no visible open spaces into the interior	154	264.1086(c)(1)(ii)					
	open-top container in which organic-vapor suppressing barrier is used such that no hazardous waste is exposed; example	154	264.1086(c)(1)(iii)					
	container used to meet requirements of 264.1086(c)(1)(ii) or (c)(1)(iii) shall be equipped with covers & closure devices composed of materials to minimize exposure of hazardous waste to atmosphere & to maintain equipment integrity; factors to consider in selecting materials	154	264.1086(c)(2)					
	when using Container Level 1 controls, owner/ operator shall install covers & closure devices, & secure & maintain them in closed position except:	154	264.1086(c)(3)					
	opening of closure device or cover is allowed to add hazardous waste or other material as specified	154	264.1086(c)(3)(i)	7045.0540	IBR			
		154	264.1086(c)(3)(i)(A)					
		154	264.1086(c)(3)(i)(B)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
opening of closure device or cover is allowed to remove hazardous waste as specified	154	264.1086(c)(3)(ii)					
	154	264.1086(c)(3)(ii)(A)					
	154	264.1086(c)(3)(ii)(B)					
opening of closure device or cover is allowed when access needed to perform routine activities other than transfer hazardous waste; examples; after activity, owner/operator shall promptly secure closure device or reinstall cover	154	264.1086(c)(3)(iii)					
opening of pressure relief devices allowed during normal operations to maintain internal pressure in accordance with container design; device shall operate with no detectable organic emissions when closed; settings at which device opens shall allow device to remain in closed position when internal pressure is within operating range; examples	154	264.1086(c)(3)(iv)					
opening of safety device, as defined in 265.1081, is allowed any time conditions require it to avoid an unsafe condition	154	264.1086(c)(3)(v)					
inspect containers & their covers & closure devices as follows:	154	264.1086(c)(4)					
if hazardous waste is present in container when owner/operator first accepts possession & container is not emptied within 24 hours, it shall be visually inspected; if a defect is detected, owner/operator repair in accordance with 264.1086(c)(4)(iii)	154	264.1086(c)(4)(i)	7045.0540	IBR			
if container remains at the facility	154	264.1086(c)(4)(					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	for 1 year or more, owner/operator shall inspect it & cover & closure devices initially & then, at least every 12 months; if defect is detected, owner/operator repair in accordance with 264.1086(c)(4)(iii)		ii)					
	when a defect is detected, owner/ operator shall make repair no later than 24 hours after detection & complete it no later than 5 days after detection; if repair cannot be completed within 5 days, hazardous waste shall be removed & container not used until repaired	154	264.1086(c)(4)(iii)					
	owner/operator shall maintain copy of procedure to determine that containers with 0.46 m^3 or greater capacity, are not managing hazardous waste in light material service	154	264.1086(c)(5)					
	Container Level 2 standards	154	264.1086(d)					
13	container using Container Level 2 controls is one of the following:	154	264.1086(d)(1)					
	meets the applicable U.S. DOT regulations on packaging for transportation as in 264.1086(f)	154	264.1086(d)(1)(i)					
	container that operates with no detectable organic emissions as determined in accordance 264.1086(g)	154	264.1086(d)(1)(ii)					
	container that has been demonstrated to be vapor-tight by using part 60, appendix A, Method 27 in accordance with 264.1086(h)	154	264.1086(d)(1)(iii)	7045.0540	IBR			
	transfer of hazardous waste shall minimize exposure to the atmosphere, to extent practical; examples that meet	154	264.1086(d)(2)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
264.1086(d)(2) requirements							
owner/operator shall install all covers & closure devices, & secure & maintain in closed position except:	154	264.1086(d)(3)					
opening of closure device or cover is allowed to add hazardous waste or other material as follows	154	264.1086(d)(3)(i)					
	154	264.1086(d)(3)(i)(A)					
	154	264.1086(d)(3)(i)(B)					
opening of a closure device or cover is allowed to remove hazardous waste as follows	154	264.1086(d)(3)(ii)					
	154	264.1086(d)(3)(ii)(A)					
	154	264.1086(d)(3)(ii)(B)					
opening of closure device or cover is allowed when access is needed to perform routine activities other than transfer; examples; after activity, promptly secure closure device or reinstall cover	154	264.1086(d)(3)(iii)					
opening of pressure relief devices which vent to atmosphere is allowed during normal operations to maintain internal pressure in accordance with container design; device shall operate with no detectable organic emissions when in closed position; settings at which device opens shall allow device to remain in closed position when internal pressure is within operating range; examples	154	264.1086(d)(3)(iv)					
opening of safety device, as defined in 265.1081, is allowed any time conditions require it to avoid an unsafe condition	154	264.1086(d)(3)(v)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	owner/operator shall inspect containers & their covers & closure devices as follows:	154	264.1086(d)(4)					
	if hazardous waste is present in container when owner/operator first accepts possession & container is not emptied within 24 hours, it shall be visually inspected; if defect is detected, owner/operator shall repair in accordance with 264.1086(d)(4)(iii)	154	264.1086(d)(4)(i)					
	if container remains at the facility for 1 year or more, owner/operator shall inspect it & cover & closure devices initially & then at least every 12 months to check for open spaces into its interior; if defect is detected, owner/ operator shall repair in accordance with 264.1086(d)(4)(iii)	154	264.1086(d)(4)(ii)					
	when defect is detected, owner/ operator shall make efforts at repair no later than 24 hours after detections & complete it as soon as possible but no later than 5 days after detection; if repair cannot be completed within 5 days, hazardous waste shall be removed & container shall not be used until repaired	154	264.1086(d)(4)(iii)					
	Container Level 3 standards	154	264.1086(e)					
13	container using Container Level 3 controls is one of the following:	154	264.1086(e)(1)	7045.0540	IBR			
	container that is vented through a closed-vent system to control device in accordance with 264.1086(e)(2)(ii)	154	264.1086(e)(1)(i)					
	container that is vented inside an enclosure which is exhausted through closed-vent system to control device in accordance with	154	264.1086(e)(1)(ii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
264.1086(e)(2)(i)-(ii)							
owner/operator shall meet the following, as applicable	154	264.1086(e)(2)					
container enclosure shall be designed & operated in accordance with 52.741, appendix B; permanent or temporary openings; verification procedure as in Section 5.0	154	264.1086(e)(2)(i)					
closed-vent system & control device shall be designed & operated in accordance with 264.1087	154	264.1086(e)(2)(ii)					
safety devices, in 265.1081, may be installed & operated on any container, enclosure, closed-vent system, or control device used to comply with 264.1086(e)(1)	154	264.1086(e)(3)					
owner/operator shall inspect & monitor the closed-vent system & control devices as specified in 264.1087	154	264.1086(e)(4)					
owners/operators shall prepare & maintain records specified in 264.1089(d)	154	264.1086(e)(5)					
for purpose of 264.1086(c)(1)(i) or (d)(1)(i) compliance, containers shall meet applicable U.S. DOT regulations on packaging for transportation as follows:	154	264.1086(f)					
meets applicable requirements in 49 CFR part 178 or 49 CFR part 179	154	264.1086(f)(1)	7045.0540	IBR			
hazardous waste managed in container in accordance with 49 CFR part 107, subpart B; 49 CFR part 172; 49 CFR part 173; & 49 CFR part 180	154	264.1086(f)(2)					
no exceptions to the 49 CFR part 178 or 179 regulations are allowed	154	264.1086(f)(3)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
except as in 264.1086(f)(4)							
for lab pack managed in accordance with 49 CFR part 178, owner/operator may comply with the exceptions for combination packaging in 49 CFR 173.12(b)	154	264.1086(f)(4)					
owner/operator shall use 264.1083(d) procedure for determining if container operates with no detectable organic emissions as in 264.1086(d)(1)(ii)	154	264.1086(g)					
each potential leak interface on container, cover, & closure devices shall be checked; examples	154	264.1086(g)(1)					
test performed when container is filled with material expected to be managed in this container; during test, container cover & closure devices shall be closed	154	264.1086(g)(2)					
procedure for determining a container to be vapor-tight using Method 27 of part 60, appendix A to comply with 264.1086(d)(1)(iii)	154	264.1086(h)					
test performed in accordance with Method 27 of part 60, appendix A	154	264.1086(h)(1)					
pressure measurement device shall be used with a precision of ±2.5mm water & capable of measuring above that used for vapor pressure tightness	154	264.1086(h)(2)					
if test results indicate container sustains a pressure change less than or equal to 750 Pascals, then it's vapor-tight	154	264.1086(h)(3)	7045.0540	IBR			
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES							
264.1087 applies to closed-vent system & control device installed & operated to control air emissions	154.1	264.1087(a)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	closed-vent system shall meet the following requirements:	154.1	264.1087(b)					
	route gases, vapors, & fumes to a control device that meets the requirements specified in 264.1087(c)	154.1	264.1087(b)(1)					
	designed & operated in accordance with 264.1033(k)	154.1	264.1087(b)(2)					
xiv	if system includes bypass devices, each device shall be equipped with either flow indicator or seal or locking device; other fittings used for safety purposes are not bypass devices	154	264.1087(b)(3)					
	if flow indicator is used to comply with 264.1087(b)(3), it shall be installed at inlet to bypass line; flow indicator is a device which indicates gas or vapor flow	154	264.1087(b)(3)(i)					
	if a seal or locking device is used to comply with 264.1087(b)(3), it shall be placed such that bypass device cannot be opened without breaking the seal or removing the lock; examples; inspect seal or closure mechanism at least once a month	154	264.1087(b)(3)(ii)					
	closed-vent system shall be inspected & monitored by owner/ operator in accordance with 264.1033(l)	154	264.1087(b)(4)					
	control device shall meet the following requirements:	154.1	264.1087(c)	7045.0540	IBR			
	control device shall be one of the following devices:	154.1	264.1087(c)(1)					
	control device designed & operated to reduce total organic content of inlet vapor stream by at least 95%	154.1	264.1087(c)(1)(i)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	enclosed combustion device designed & operated in accordance with 264.1033(c)	154.1	264.1087(c)(1)(ii)					
	flare designed & operated in accordance with 264.1033(d)	154.1	264.1087(c)(1)(iii)					
14	owner/operator who uses closed-vent system & control device to comply with 264.1087 shall comply with 264.1087(c)(2)(i)-(c)(2)(vi)	154	264.1087(c)(2)					
	periods of planned routine maintenance of control device during which 264.1087 (c)(1)(i)-(iii) are not met, shall not exceed 240 hours/year	154	264.1087(c)(2)(i)					
	requirements in 264.1087(c)(1)(i)-(iii) do not apply during planned routine maintenance	154	264.1087(c)(2)(ii)					
	requirements in 264.1087(c)(1)(i)-(iii) do not apply during control device system malfunction	154	264.1087(c)(2)(iii)					
	owner/operator shall demonstrate compliance with 264.1087(c)(2)(i) by recording information in 264.1089(e)(1)(v)	154	264.1087(c)(2)(iv)					
	owner/operator shall correct control device system malfunctions as soon as practicable to minimize excess air pollutant emissions	154	264.1087(c)(2)(v)					
	owner/operator shall operate closed-vent system such that gases, vapors, or fumes are not vented to control device during maintenance or malfunction except when necessary	154	264.1087(c)(2)(vi)	7045.0540	IBR			
	owner/operator using a carbon adsorption system shall operate & maintain control device in accordance with the following	154.1	264.1087(c)(3)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	requirements:							
	following initial startup, all activated carbon shall be replaced with fresh carbon regularly in accordance with 264.1033(g) or (h)	154.1	264.1087(c)(3)(i)					
xv	all carbon removed from control device shall be managed in accordance with 264.1033(n)	154.1 154.5 154	264.1087(c)(3)(ii)					
	owner/operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system shall operate & maintain in accordance with 264.1033(j)	154.1	264.1087(c)(4)					
	demonstrate that control device achieves performance requirements of 264.1087(c)(1) as follows:	154.1	264.1087(c)(5)					
	demonstrate, using a performance test as in 264.1087(c)(5)(iii) or design analysis as in 264.1087 (c)(5)(iv) for each control device except for the following:	154.1	264.1087(c)(5)(i)					
	a flare	154.1	264.1087(c)(5)(i)(A)					
	boiler or process heater with design input capacity of 44 megawatts or greater	154.1	264.1087(c)(5)(i)(B)					
	boiler or process heater into which the vent stream is introduced with primary fuel	154.1	264.1087(c)(5)(i)(C)	7045.0540	IBR			
	boiler or industrial furnace burning hazardous waste for which owner/operator has been issued a final permit & has designed & operates unit in accordance with 266, Subpart H	154.1 154	264.1087(c)(5)(i)(D)					
	boiler or industrial furnace	154.1	264.1087(c)(5)(					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
burning hazardous waste for which owner/operator has designed & operates in accordance with requirements of 266, Subpart H	154	i)(E)					
owner/operator shall demonstrate the performance of each flare in accordance with 264.1033(e)	154.1	264.1087(c)(5)(ii)					
for a performance test, owner/operator shall use test methods & procedures in 264.1034 (c)(1)-(4)	154.1	264.1087(c)(5)(iii)					
design analysis shall meet requirements specified in 264.1035(b)(4)(iii)	154.1	264.1087(c)(5)(iv)					
owner/operator shall demonstrate that carbon adsorption system achieves the 264.1087(c)(1) performance requirements	154.1	264.1087(c)(5)(v)					
if owner/operator & Regional Administrator do not agree on a demonstration of control device performance using a design analysis, then disagreement shall be resolved using a performance test in accordance with 264.1087(c)(5)(iii); Regional Administrator may choose authorized representative to observe	154.1	264.1087(c)(6)					
control device shall be inspected & monitored by owner/operator in accordance with 264.1033(f)(2) & 264.1033(l); readings from each monitoring device inspected at least once each day; any necessary corrective measures immediately implemented	154	264.1087(c)(7)	7045.0540	IBR			
12 INSPECTION AND MONITORING REQUIREMENTS							
owner/operator shall inspect & monitor air emission control	154	264.1088(a)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	equipment in accordance with 264.1084-1087							
	owner/operator shall develop & implement written plan & schedule to perform inspections & monitoring required by 264.1088(a); shall incorporate plan into facility inspection plan under 264.15	154	264.1088(b)					
	RECORDKEEPING REQUIREMENTS							
xvi	owner/operators subject to 264, Subpart CC shall record & maintain information specified in 264.1089(b)-(i); with exception, records shall be maintained for at least 3 years; documentation maintained until air emission control equipment is replaced; information required by 264.1089 (i) shall be maintained as long as tank or container is not using air emission controls in 264.1084-264.1087	154	264.1089(a)	7045.0540	IBR			
16	owner/operator of tank using air emission controls in accordance with 264.1084 shall prepare & maintain records that include:	154	264.1089(b)					
	for tank using air emission controls in accordance with 264.1084, owner/ operator shall record:	154	264.1089(b)(1)					
	tank identification number	154	264.1089(b)(1)(i)	7045.0540	IBR			
	record for each inspection required by 264.1084 that includes inspection date & other information for defects detected	154	264.1089(b)(1)(ii)					
		154	264.1089(b)(1)(ii)(A)					
		154	264.1089(b)(1)(ii)(B)					
	owner/operator shall record	154	264.1089(b)(2)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	following information, as applicable to the tank:							
	owner/operator using a fixed roof shall prepare & maintain records for each maximum organic vapor pressure determination in accordance with 264.1084(c); date & time of sample collection, analysis method, & results	154	264.1089(b)(2)(i)					
	owner/operator using internal floating roof shall prepare & maintain documentation describing design	154	264.1089(b)(2)(ii)					
	owners/operators using external floating roof shall prepare & maintain documentation & records for specified items	154	264.1089(b)(2)(iii)					
		154	264.1089(b)(2)(iii)(A)					
		154	264.1089(b)(2)(iii)(B)					
	each owner/operator using an enclosure shall prepare & maintain specified records	154	264.1089(b)(2)(iv)					
		154	264.1089(b)(2)(iv)(A)					
		154	264.1089(b)(2)(iv)(B)					
16	owner/operator of a surface impoundment using air emission controls in accordance with 264.1085 shall prepare & maintain records that include:	154	264.1089(c)					
	surface impoundment identification number	154	264.1089(c)(1)	7045.0540	IBR			
	documentation describing floating membrane cover that includes description of cover design, & certification that it meets specifications in 264.1085(c)	154	264.1089(c)(2)					
	record for each inspection	154	264.1089(c)(3)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	required by 264.1085 that includes:							
	date inspection was conducted	154	264.1089(c)(3)(i)					
	for each defect detected during inspection: location, description, date & corrective action; if repair delayed, owner/ operator shall record reason & date of expected repair	154	264.1089(c)(3)(ii)					
	for a surface impoundment equipped with cover & vented through a closed-vent system to a control device, owner/operator shall prepare & maintain records specified in 264.1089(e)	154	264.1089(c)(4)					
16	owner/operator of containers using Container Level 3 air emission controls in accordance with 264.1086 shall prepare & maintain records that include:	154	264.1089(d)					
	records for most recent calculations & measurements to verify enclosure meets criteria of a permanent total enclosure as in "Procedure T" 40 CFR 52.741, appendix B	154	264.1089(d)(1)					
	records required for closed-vent system & control device in accordance with 264.1089(e)	154	264.1089(d)(2)					
16	owner/operator using closed-vent system & control device in accordance with 264.1087 shall prepare & maintain records that include:	154	264.1089(e)	7045.0540	IBR			
	documentation that includes:	154	264.1089(e)(1)					
	certification signed & dated by owner/ operator stating the control device is designed to operate at performance level when operating	154	264.1089(e)(1)(i)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	at capacity							
	specified design documentation if design analysis used; include a description of the control device design in accordance with 264.1035(b)(4)(iii) & certification by owner/operator that control equipment meets applicable specifications	154	264.1089(e)(1)(ii)					
	performance test plan & all test results, if performance tests are used	154	264.1089(e)(1)(iii)					
	information as required by 264.1035 (c)(1)-(2)	154	264.1089(e)(1)(iv)					
	owner/operator shall record on semiannual basis, information specified in 264.1089(e)(1)(v)(A)-(B) for planned routine maintenance operations requiring control devices not to meet 264.1087(c)(1)(i)-(iii) requirements	154	264.1089(e)(1)(v)					
		154	264.1089(e)(1)(v)(A)					
		154	264.1089(e)(1)(v)(B)					
	owner/operator shall record the information specified in 264.1089(e)(1)(vi)(A)-(C) for unexpected control device system malfunctions	154	264.1089(e)(1)(vi)					
		154	264.1089(e)(1)(vi)(A)					
		154	264.1089(e)(1)(vi)(B)					
		154	264.1089(e)(1)(vi)(C)	7045.0540	IBR			
	management records of carbon removed from a carbon adsorption system conducted in accordance with 264.1087(c)(3)(ii)	154	264.1089(e)(1)(vii)					
16	owner/operator of a tank, surface impoundment, or container exempted from standards in accordance with 264.1082(c) shall prepare & maintain following records:	154	264.1089(f)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	if exempted under 264.1082(c)(1)-(2), owner/operator shall record information used for each waste determination in operating log; if waste sample results used for the determination, date, time, & location shall be recorded in accordance with 264.1083	154	264.1089(f)(1)					
	if exempted under 264.1082(c)(2)(vii) or (viii), owner/operator shall record ID number for the incinerator, boiler, or industrial furnace in which hazardous waste is treated	154	264.1089(f)(2)					
16	owner/operator designating a cover as "unsafe to inspect and monitor" shall record in the facility log: ID numbers, explanations, & inspection plans & schedules	154	264.1089(g)					
16	owners/operators subject to 264, Subpart CC & to control device standards in 40 CFR Part 60, Subpart VV, or 40 CFR Part 61, Subpart V, may demonstrate compliance by documentation pursuant to those subparts to extent it duplicates that required by 264.1089	154	264.1089(h)					
xvii	for tank or container not using air emission controls specified in 264.1084-264.1087 in accordance with 264.1080(d), owner/ operator shall record & maintain the following:	154.3 154	264.1089(i)					
17	list of individual organic peroxide compounds manufactured at the facility that meet 264.1080(d)(1) conditions	154.3 154	264.1089(i)(1)	7045.0540	IBR			
17	description of how hazardous waste containing organic peroxide compounds identified in	154.3 154	264.1089(i)(2)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	264.1089(i)(1) are managed in tanks & containers; the description shall include:							
	for tanks, sufficient information provided to describe: facility tank ID number, purpose & placement of the tank in the management train of this hazardous waste, & procedures used to ultimately dispose of hazardous waste	154.3 154	264.1089(i)(2)(i)					
	for containers, sufficient information provided to describe: facility ID number for each container or group of containers; purpose & placement in the management train of this hazardous waste, & procedures used to ultimately dispose of hazardous waste	154.3 154	264.1089(i)(2)(ii)					
17	why managing the hazardous waste containing organic peroxide compounds identified in 264.1089(i)(1) would create an undue safety hazard if specified air emission controls are installed & operated; include the following information:	154.3 154	264.1089(i)(3)					
	for tanks, sufficient information to explain: how required air emission controls would affect design & facility operating procedures currently used, & why installation of safety devices under Part 264, Subpart CC will not address situations when evacuation is necessary	154.3 154	264.1089(i)(3)(i)					
	for containers, sufficient information to explain: how required air emission controls would affect design & handling procedures currently used, & why installation of safety devices under Part 264, Subpart CC will not	154.3 154	264.1089(i)(3)(ii)	7045.0540	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	address situations in which evacuation is necessary							
	REPORTING REQUIREMENTS							
	owner/operator managing hazardous waste in a tank, surface impoundment, or container exempted in accordance with 264.1082(c) shall report each occurrence when there is noncompliance with 264.1082(c)(1) or (2); written report submitted within 15 days; shall contain specified information	154.1 154.5 154	264.1090(a)	7045.0540	IBR			
	owner/operator using tank air emission controls in accordance with 264.1084(c) shall report each occurrence when there is noncompliance with 264.1084(b); written report be submitted within 15 days; shall contain specified information	154.1 154	264.1090(b)					
xviii	owner/operator using control device in accordance with 264.1087 shall submit a semiannual written report except as in 264.1090(d); shall describe each occurrence past 6 mos. when either: control device is operated continuously for 24 hours or longer in noncompliance with operating values defined in §264.1035 (c)(4) or flare is operated with visible emissions for 5 minutes or longer in two-hour period, as in §264.1033(d); report include EPA ID#, facility name & address, explanation, & actions taken; signed & dated	154.1 154.5	264.1090(c)					
	report to Regional Administrator is not required for 6-month period during which all control devices are operated such that:	154.1 154.5	264.1090(d)	7045.0540	IBR			
	during no period of 24 hours or	154.1	264.1090(d)(1)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
longer did a control device operate continuously in noncompliance with 264.1035(c)(4); &	154.5						
no flare was operated with visible emissions for 5 minutes or longer in a two-hour period, as in 264.1033 (d)	154.1 154.5	264.1090(d)(2)					
ALTERNATIVE CONTROL REQUIREMENTS FOR TANKS							
reserve	154.1 154	264.1091	7045.0540	IBR			
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE T STORAGE, AND DISPOSAL FACILITIES							
SUBPART A - GENERAL							
PURPOSE, SCOPE, AND APPLICABILITY							
replace "The standards of this part" in the first sentence of this paragraph with "Except as provided in § 265.1080(b), the standards of this part"	154.1	265.1(b)	7045.0552, 1	X			
SUBPART B - GENERAL FACILITY STANDARDS							
GENERAL WASTE ANALYSIS							
add "265.1084," after "265.1063(d),"	154.1	265.13(b)(6)	7045.0564, 2, F	X			
owners/operators who are seeking exemption to Subpart CC air emission standards in accordance with 265.1083	154.1	265.13(b)(8)	7045.0564, 2, I	X			
if direct measurement used for determination, procedures & schedules for waste sampling & analysis, & results of analysis to verify exemption	154.1 154.5	265.13(b)(8)(i)	7045.0564, 2, I, (1)	X			
if knowledge of waste is used for determination, any information that is used as basis for knowledge	154.1 154.5	265.13(b)(8)(ii)	7045.0564, 2, I, (2)	X			
GENERAL INSPECTION REQUIREMENTS							

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
xx	remove "and" preceding "265.1058"; add "265.1089, and 265.1091(b)" after "265.1058"	154.1	265.15(b)(4)	7045.0556, 5, C	X			
	SUBPART E - MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING							
	OPERATING RECORD							
	insert ", waste determinations," after "waste analysis,"; add "265.1084," after "265.1063,"	154.1	265.73(b)(3)	7045.0584, 3, E	X			
	delete "," after "testing"; replace ", and corrective action where required by subpart F and" with "when required by"; replace "265.302-265.304" with "265.302 through 265.304"; replace "265.1034(c)-265.1034(f)" with "265.1034(c) through 265.1034(f)"; replace "265.1063(d)-265.1063(i)" with "265.1063(d) through 265.1063(i)"; remove "and" after "264.1063(i)"; add "265.1089, 265.1090, and 265.1091" after "265.1064";	154.1	265.73(b)(6)	7045.0584, 3, H	X			
	ADDITIONAL REPORTS							
	remove "and" after "AA"; insert ", and CC of this part" after "BB"	154.1	265.77(d)	7045.0588, 4, D	X			
	SUBPART I - USE AND MANAGEMENT OF CONTAINERS							
	AIR EMISSION STANDARDS							
	owners/operators subject to applicable requirements of 265, Subparts AA, BB, & CC if they place hazardous waste in a container	154.1 154	265.178	7045.0626, 9	X			
	SUBPART J - TANK SYSTEMS							
	AIR EMISSION STANDARDS							
	owners/operators subject to applicable requirements of 265, Subparts AA, BB, & CC if they	154.1 154	265.202	7045.0628, 13	X			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
place hazardous waste in a tank							
SUBPART K - SURFACE IMPOUNDMENTS							
AIR EMISSION STANDARDS							
owners/operators subject to applicable requirements of 265, Subparts BB & CC if they place hazardous waste in surface impoundment	154.1 154	265.231	7045.0630, 9	X			
SUBPART AA - AIR EMISSION STANDARDS FOR PROCESS VENTS							
APPLICABILITY							
replace "265.1034(d) and (e)" with "265.1034, paragraphs (d) and (e)"; insert "one of the following" after "conducted in"	154	265.1030(b)	7045.0647	IBR			
replace "Units that are" with "A unit that is"; insert "40 CFR" before "part 270"	154	265.1030(b)(1)					
completely revise: unit not exempt from permitting under 262.34(a) & located at hazardous waste management facility subject to Part 270, or	154	265.1030(b)(2)					
unit exempt from permitting under 262.34(a)	154	265.1030(b)(3)					
delete "262.34" from note at end of section	154	265.1030/ note at end	7045.0647	IBR			
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES							
in second sentence replace "18 months" with "30 months"	154.5	265.1033(a)(2)	7045.0647	IBR			
xxi replace "at two locations and have" with "with"; replace first "^{o}C" with "degrees Celsius (^{o}C)"; replace "One temperature" with "The temperature"; replace ", and a second temperature sensor shall be installed at a location in the coolant fluid exiting the condenser" with "exit (i.e.,	154	265.1033(f)(2)(vi)(B)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
product side)"							
add new paragraph: design requirements of closed-vent system are either:	154	265.1033(j)					
completely revise: to operate with no detectable emissions as determined by 265.1034(b), & by visual inspections; or	154	265.1033(j)(1)					
completely revise: to operate at pressure below atmospheric pressure; how to equip system	154.1 154.5 154	265.1033(j)(2)					
redesignate 265.1033(k) as 265.1033(l); add new 265.1033(k): owner/ operator to monitor & inspect closed-vent system to ensure proper operation & maintenance by implementing following:	154	265.1033(k)					
closed-vent system used to comply with 265.1033(j)(1) shall be inspected & monitored in accordance with:	154	265.1033(k)(1)					
initial leak detection monitoring shall be conducted on or before date system becomes subject to 265.1033; use procedures in 265.1034(b)	154	265.1033(k)(1)(i)					
after monitoring required in 265.1033(k)(1)(i), owner/operator shall inspect & monitor as follows:	154	265.1033(k)(1)(ii)	7045.0647	IBR			
	154	265.1033(k)(1)(ii)(A)					
	154	265.1033(k)(1)(ii)(B)					
in event that defect or leak is detected, owner/operator shall repair it in accordance with 265.1033(k)(3)	154	265.1033(k)(1)(iii)					
owner/operator shall maintain record of inspection & monitoring	154	265.1033(k)(1)(iv)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	in accordance with 265.1035							
	each closed-vent system used to comply with 265.1033(j)(2) shall be inspected & monitored in accordance with the specified requirements	154	265.1033(k)(2)					
		154	265.1033(k)(2)(i)					
		154	265.1033(k)(2)(ii)					
		154	265.1033(k)(2)(iii)					
		154	265.1033(k)(2)(iv)					
	owner/operator shall repair all detected defects as follows:	154	265.1033(k)(3)					
	detectable emissions shall be controlled as soon as practicable, but not later than 15 days after detected, except as in 265.1033(k)(3)(iii)	154	265.1033(k)(3)(i)					
	first attempt at repair shall be made no later than 5 days after emission is detected	154	265.1033(k)(3)(ii)					
	delay of repair is allowed if it is infeasible without a shutdown, or if emissions resulting from repair are > emissions from delay of repair; repair of such equipment shall be completed by end of next shutdown	154	265.1033(k)(3)(iii)					
	owner/operator shall maintain record of repair in accordance with 265.1035	154	265.1033(k)(3)(iv)	7045.0647	IBR			
	redesignate former 265.1033(k) as (l)	154	265.1033(l)					
xxii	owner/operator using carbon adsorption system shall document that all carbon that is hazardous & removed from control device is managed in one of following manners:	154.1 154.5 154	265.1033(m)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
regenerated or reactivated in a thermal treatment unit that meets one of following:	154.1 154.5 154	265.1033(m)(1)					
owner/operator has been issued final permit under part 270, which implements part 264 subpart X requirements; or	154	265.1033(m)(1)(i)					
unit is equipped with & operating air emission controls in accordance with subparts AA & CC of 264 or 265; or	154	265.1033(m)(1)(ii)					
unit is equipped with & operating air emission controls in accordance with national emission standards of 61 or 63	154	265.1033(m)(1)(iii)					
incinerated in a hazardous waste incinerator for which the owner/operator either:	154.1 154.5 154	265.1033(m)(2)					
has been issued a final permit under part 270 which implements the requirements of part 264 subpart O; or	154.5 154	265.1033(m)(2)(i)					
has designed & operates the incinerator in accordance with part 265, subpart O	154.5 154	265.1033(m)(2)(ii)					
burned in boiler or industrial furnace for which owner/operator either:	154.1 154.5 154	265.1033(m)(3)	7045.0647	IBR			
has been issued a final permit under part 270 which implements part 266, subpart H; or	154.5 154	265.1033(m)(3)(i)					
has designed & operates boiler or industrial furnace in accordance with part 266, subpart H	154.5 154	265.1033(m)(3)(ii)					
any components of a closed-vent system designated in 265.1035(c)(9) as unsafe are exempt from 265.1033 (k)(1)(ii)(B) if:	154	265.1033(n)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
owner/operator determines that monitoring personnel would be in danger as a consequence of complying	154	265.1033(n)(1)					
owner/operator adheres to written plan requiring monitoring using procedure in 265.1033(k)(1)(ii)(B) as frequently as practicable	154	265.1033(n)(2)					
TEST METHODS AND PROCEDURES							
replace "§265.1033(j)" with "§265.1033(k) of this subpart"	154	265.1034(b)	7045.0647	IBR			
RECORDKEEPING REQUIREMENTS							
replace "(f) through (j)" with "(f) through (k)"; insert "of this subpart" after "265.1033"	154	265.1035(c)(3)	7045.0647	IBR			
recordkeeping requirements for owner/ operator designating any components of a closed-vent system as unsafe to monitor shall record ID of such components in accordance with 265.1033(n), & explain why component is unsafe & plan for monitoring	154	265.1035(c)(9)					
when leak is detected as in 265.1033(k), the following shall be recorded:	154	265.1035(c)(10)	7045.0647	IBR			
instrument number, closed-vent system component ID number, & operator name, initials, or ID number	154	265.1035(c)(10)(i)					
date leak was detected & date of first attempt to repair	154	265.1035(c)(10)(ii)					
date of successful repair	154	265.1035(c)(10)(iii)					
maximum instrument reading by Method 21, part 60, Appendix A	154	265.1035(c)(10)(iv)					
"repair delayed" & reason for	154	265.1035(c)(10					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
delay if not repaired within 15 days		)(v)					
owner/operator may develop written procedure to identify conditions justifying repair delay; document reasons for repair delay	154	265.1035(c)(10)(v)(A)					
documentation required if repair delay was due to depletion of stocked parts	154	265.1035(c)(10)(v)(B)					
replace "(c)(3)-(c)(8)" with "(c)(3) through (c)(10)"; replace "need be kept only 3 years" with "shall be maintained by the owner/operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record"	154	265.1035(d)					
SUBPART BB - AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS							
APPLICABILITY							
replace "265.1064(j)" with "265.1064(k)"; insert "one of the following" after "managed in"	154	265.1050(b)	7045.0648	IBR			
replace "Units that are" with "A unit that is"; insert "40 CFR" prior to "part 270"	154	265.1050(b)(1)	7045.0648	IBR			
completely revise: unit not exempt from permitting under 262.34(a) that is located at a hazardous waste management facility otherwise subject to part 270, or	154	265.1050(b)(2)					
unit exempt from permitting under 262.34(a)	154	265.1050(b)(3)					
equipment that contains or contacts hazardous waste with specific organic concentration is excluded from 265.1052-265.1060 if identified as required in 265.1064(g)(6)	154	265.1050(e)					
delete reference to "262.34" from	154	265.1050/note					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
note		at end					
STANDARDS: SAMPLING CONNECTION SYSTEMS							
insert ", closed-loop," after "closed-purge"; delete "system" after "closed-purge"; insert second & third sentences regarding reason for sample purge system & that gases displaced during filling do not require collection	154	265.1055(a)	7045.0648	IBR			
delete "system" following "closed-purge"; insert ", closed-loop," after "closed-purge"; insert "of this section" following "paragraph (a)"	154	265.1055(b)					
completely revise: return purged process fluid directly to process line;	154	265.1055(b)(1)					
replace "hazardous waste stream with no detectable emissions to atmosphere," with "process fluid;"	154	265.1055(b)(2)					
completely revise: be designed & operated to capture & transport all purged process fluid to waste management unit that complies with 265.1085-265.1087 or control device that complies with 265.1060	154	265.1055(b)(3)					
insert "and sampling systems without purges" after "systems"	154	265.1055(c)	7045.0648	IBR			
STANDARDS: PUMPS AND VALVES IN HEAVY LIQUID SERVICE, PRESSURE RELIEF DEVICES IN LIGHT LI HEAVY LIQUID SERVICE, AND FLANGES AND OTHER CONNECTORS							
inaccessible, ceramic or ceramic-lined connectors exempt from monitoring requirements of 265.1058(a) & recordkeeping requirements of 265.1064	154	265.1058(e)	7045.0648	IBR			
RECORDKEEPING REQUIREMENTS							
ID of equipment that contains or contacts hazardous waste with	154	265.1064(g)(6)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	certain characteristics							
	SUBPART CC - AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS							
	APPLICABILITY							
xxiii	regulations in 265, Subpart CC apply to owners/operators of facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers except as in 265.1 & 265.1080(b)	154.1	265.1080(a)	7045.0645	IBR			
	requirements of 265, Subpart CC do not apply to the following waste management units at the facility:	154.1	265.1080(b)					
	waste management unit that holds hazardous waste placed in it before October 6, 1996 & to which none is added on or after this date	154.1 154.2 154.4 154.6	265.1080(b)(1)					
	container with capacity $\leq$ 0.1 m^3	154.1	265.1080(b)(2)					
	tank in which owner/ operator has stopped adding hazardous waste & has begun implementing or completed closure	154.1	265.1080(b)(3)					
	surface impoundment in which owner/operator has stopped adding hazardous waste & has begun implementing or completed closure	154.1	265.1080(b)(4)	7045.0645	IBR			
	waste management unit that is used solely for on-site treatment or storage of hazardous waste generated from remedial activities	154.1	265.1080(b)(5)					
	waste management unit used solely for management of radioactive mixed waste	154.1	265.1080(b)(6)					
	hazardous waste management unit equipped with & operating air	154	265.1080(b)(7)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
emission controls in accordance with Clean Air Act; tanks for which air emission control includes an enclosure, must comply with 265.1085 (i), except as in 265.1083(c)(5)							
tank with process vent as defined in 264.1031	154	265.1080(b)(8)					
for owners/operators of facility subject to 265, Subpart CC & who have received a final RCRA permit prior to October 6, 1996, the following requirements apply:	154.1 154.2 154.4 154.6	265.1080(c)					
requirements of 264, Subpart CC shall be incorporated in permit when permit is reissued or reviewed per 270.50(d)	154.1	265.1080(c)(1)					
until date when permit is reissued or reviewed, owner/operator is subject to requirements of 265, Subpart CC	154.1	265.1080(c)(2)					
requirements of subpart CC, with exception of 265.1090(i), are administratively stayed for a tank or container used to manage hazardous waste generated by organic peroxide manufacturing & associated laboratory operations when owner/operator meets all of specified conditions	154.3	265.1080(d)					
	154.3	265.1080(d)(1)					
	154.3	265.1080(d)(2)	7045.0645	IBR			
	154.3	265.1080(d)(3)					
DEFINITIONS							
terms not defined in 265.1081 have meaning given in the Act & Parts 260-266	154.1	265.1081	7045.0645	IBR			
"average volatile organic concentration" or "average VO concentration"	154.1	265.1081					
"closure device"	154	265.1081					
"continuous seal"	154	265.1081					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
"cover"	154.1 154.5 154	265.1081					
"enclosure"	154.5 154	265.1081					
"external floating roof"	154.1 154	265.1081					
"fixed roof"	154.1 154	265.1081					
"floating membrane cover"	154.1	265.1081					
"floating roof"	154.1 154	265.1081					
"hard-piping"	154	265.1081					
"in light material service"	154	265.1081					
"internal floating roof"	154.1 154	265.1081					
"liquid-mounted seal"	154.1	265.1081					
"malfunction"	154	265.1081					
"maximum organic vapor pressure"	154.1 154	265.1081	7045.0645	IBR			
"metallic shoe seal"	154	265.1081					
"no detectable organic emissions"	154.1 154	265.1081					
"point of waste origination"	154.1	265.1081					
		265.1081(1)					
		265.1081(2)					
"point of waste treatment"	154.1 154	265.1081					
"safety device"	154	265.1081					
"single-seal system"	154	265.1081					
"vapor-mounted seal"	154.1 154	265.1081					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
"volatile organic concentration" or "VO concentration"	154.1 154	265.1081					
"waste determination"	154.1 154.5	265.1081					
"waste stabilization process"	154.1 154.5	265.1081					
SCHEDULE FOR IMPLEMENTATION OF AIR EMISSION STANDARDS							
owners/operators of facilities existing on October 6, 1996 & subject to 265, Subparts I, J, & K shall meet the following requirements:	154.1 154.2 154.4 154.6	265.1082(a)	7045.0645	IBR			
install & begin operation of control equipment by October 6, 1996, except as in 265.1082(a)(2)	154.1 154.2 154.4 154.6	265.1082(a)(1)					
when control equipment cannot be installed & in operation by October 6, 1996, owner/operator shall:	154.1 154.2 154.4 154.6	265.1082(a)(2)					
install & begin operation as soon as possible, but no later than December 8, 1997	154.1	265.1082(a)(2)(i)	7045.0645	IBR			
prepare implementation plan which includes specified information	154.1	265.1082(a)(2)(ii)					
for facilities subject to recordkeeping requirements of 265.73, implementation schedule shall be entered in operating record no later than October 6, 1996	154.1 154.2 154.4 154.6	265.1082(a)(2)(iii)					
for facilities not subject to 265.73 requirements, implementation schedule shall be entered into permanent, readily available file located at the facility no later than October 6, 1996	154.1 154.2 154.4 154.6	265.1082(a)(2)(iv)					
facilities in existence on effective	154.1	265.1082(b)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	date of statutory or regulatory amendments under the Act that subject the facilities to 265, Subpart I, J, or K shall meet the following requirements:							
	install & operate all control equipment by effective date of amendment except as in 265.1082(b)(2)	154.1	265.1082(b)(1)					
	when control equipment cannot be installed & begin operation by effective date of amendment, owner/ operator shall:	154.1	265.1082(b)(2)					
	install & begin operation as soon as possible, but no later than 30 months after effective date of amendment	154.1	265.1082(b)(2)(i)					
	for facilities subject to recordkeeping requirements of 265.73, enter & maintain implementation schedule in operating record no later than effective date of amendment, or	154.1	265.1082(b)(2)(ii)					
	for facilities not subject to 265.73, enter & maintain implementation schedule in permanent, readily available file located at the facility no later than effective date of amendment	154.1	265.1082(b)(2)(iii)	7045.0645	IBR			
	Regional Administrator may extend implementation date for control equipment at a facility, on a case-by-case basis, to date later than December 8, 1997, under specified circumstances	154.1	265.1082(c)					
	STANDARDS: GENERAL							
5	265.1083 applies to management of hazardous waste in tanks, surface impoundments, & containers subject to 265, Subpart CC	154.1 154	265.1083(a)	7045.0645	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	owner/operator shall control air pollutant emissions from each waste management unit in accordance with 265.1085-1088, except as in 265.1083(c)	154.1 154	265.1083(b)					
	tank, surface impoundment, or container is exempt from 265.1085-1088, as applicable, provided unit is:	154.1 154	265.1083(c)					
	tank, surface impoundment, or container for which entering hazardous waste has average VO concentration at point of origination < 500 ppmw; how VO concentration shall be determined; frequency of reviews & updates	154.1 154	265.1083(c)(1)					
	tank, surface impoundment, or container for which organic content of hazardous waste entering the waste management unit has been reduced by organic destruction or removal that achieves one of following:	154.1 154	265.1083(c)(2)					
5	process that removes or destroys organics to level such that average VO concentration at point of treatment < exit concentration limit established for the process; how average VO concentration shall be determined	154.1 154	265.1083(c)(2)(i)	7045.0645	IBR			
	process that removes or destroys organics to level such that organic reduction efficiency is $\geq$ 95% & average VO concentration at point of waste treatment is < 100 ppmw; how organic reduction efficiency & average VO concentration shall be determined	154.1 154	265.1083(c)(2)(ii)					
xxiv	process that removes or destroys organics to level such that actual organic mass removal rate is $\geq$ required organic mass removal	154.1 154.5 154	265.1083(c)(2)(iii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	rate established for the process; how required organic mass removal rate & actual organic mass removal rate shall be determined							
5	biological process that destroys or degrades organics contained in hazardous waste such that one of the following conditions is met:	154.1 154	265.1083(c)(2)(iv)					
	organic reduction efficiency for process is $\geq$ 95% & organic biodegradation efficiency is $\geq$ 95%; how organic reduction efficiency & biodegradation efficiency shall be determined	154.1 154	265.1083(c)(2)(iv)(A)					
5	total actual organic mass biodegradation rate for all hazardous waste treated by the process is $\geq$ required organic mass removal rate; how organic mass removal rate & actual mass biodegradation rate shall be determined	154.1 154	265.1083(c)(2)(iv)(B)					
	process that removes or destroys organics contained in hazardous waste & meets all of specified conditions	154.1 154	265.1083(c)(2)(v)	7045.0645	IBR			
		154.1 154	265.1083(c)(2)(v)(A)					
		154.1 154	265.1083(c)(2)(v)(B)					
		154.1 154	265.1083(c)(2)(v)(C)					
xxv	process that removes or destroys organics in hazardous waste to specified levels; specified levels to be determined using procedures in 265.1084(a) & (b)	154.1 154	265.1083(c)(2)(vi)					
25	hazardous waste incinerator for which owner/operator has either:	154.1 154	265.1083(c)(2)(vii)					
	been issued a final permit under part 270 which implements part	154.1 154	265.1083(c)(2)(vii)(A)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	264, subpart O; or							
	has designed & operates incinerator in accordance with interim status requirements of part 265, subpart O	154.1 154	265.1083(c)(2)(vii)(B)					
25	boiler or industrial furnace for which owner/operator has either:	154	265.1083(c)(2)(viii)					
	been issued a final permit under 270 which implements 266, subpart H; or	154	265.1083(c)(2)(viii)(A)					
	designed & operates boiler or industrial furnace in accordance with interim status requirements of 266, subpart H	154	265.1083(c)(2)(viii)(B)					
	for determining the performance of organic destruction process, owner/operator shall account for VO concentrations below detection limit by using the following:	154	265.1083(c)(2)(ix)					
	if Method 25D in part 60, appendix A is used, 1/2 blank value determined in method	154	265.1083(c)(2)(ix)(A)	7045.0645	IBR			
	if other method used, 1/2 detection limit established for the method	154	265.1083(c)(2)(ix)(B)					
	tank used for biological treatment of hazardous waste in accordance with 265.1083(c)(2)(iv)	154	265.1083(c)(3)					
	tank, surface impoundment, or container for which hazardous waste placed in either:	154	265.1083(c)(4)					
	meets numerical concentration limits for organic constituents in 268.40; or	154	265.1083(c)(4)(i)					
	has been treated as in 268.42(a), or by equivalent method pursuant to 268.42(b)	154	265.1083(c)(4)(ii)					
	tank used for bulk feed of	154	265.1083(c)(5)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	hazardous waste to incinerator, & all of following are met:							
	tank is inside enclosure vented to a control device designed & operated in accordance with part 61, subpart FF for a facility generating ≥ 10 megagrams of benzene per year	154	265.1083(c)(5)(i)					
	tank's enclosure & control device installed & began operation prior to November 25, 1996	154	265.1083(c)(5)(ii)					
	enclosure designed & operated in accordance with 52.741, appendix B; allowance for openings; verification as in Section 5.0	154	265.1083(c)(5)(iii)					
xxvi	Regional Administrator may perform, or request owner/operator perform waste determination for hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under 265.1083 as follows:	154.1 154.5 154	265.1083(d)					
	waste determination for average VO concentration of hazardous waste at point of origination shall be performed using direct measurement in accordance with 265.1084(a); how determination will be performed	154.1 154	265.1083(d)(1)	7045.0645	IBR			
xxvii	in performing waste determination pursuant to 265.1083(d)(1), sample preparation shall be conducted as follows:	154.1 154	265.1083(d)(2)					
	in accordance with method used by owner/operator, except as specified by 265.1083(d)(2)(ii)	154	265.1083(d)(2)(i)					
	if Regional Administrator determines owner/ operator's methods inappropriate, then may	154	265.1083(d)(2)(ii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	choose appropriate one							
27	when owner/operator performs waste determination, Regional Administrator may have representative observe sampling	154.1 154	265.1083(d)(3)					
27	if results of waste determination performed or requested by Regional Administrator do not agree with results of waste determination performed by owner/ operator, then results of waste determination performed under 265.1083(d)(1) shall be used	154.1 154	265.1083(d)(4)					
27	if averaging period > 1 hour was used to determine average VO concentration of hazardous waste at point of origination, Regional Administrator can establish 265, Subpart CC compliance by performing or requesting that owner/operator perform waste determination based on samples collected within 1-hour period as specified	154	265.1083(d)(5)					
		154	265.1083(d)(5)(i)					
		154	265.1083(d)(5)(ii)					
		154	265.1083(d)(5)(iii)	7045.0645	IBR			
	WASTE DETERMINATION PROCEDURES							
	waste determination procedure to determine average VO concentration of hazardous waste at point of origination	154.1 154	265.1084(a)	7045.0645	IBR			
xxviii	average VO concentration at point of waste origination shall be determined for each hazardous waste placed in units exempted under 265. 1083(c)(1) from using air emission controls in accordance with 265.1085-1088	154.1 154	265.1084(a)(1)					
	average VO concentration of hazardous waste at point of origination shall be determined using direct measurement as in 265.1084(a)(3) or (4)	154.1 154	265.1084(a)(2)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
direct measurement to determine average VO concentrations of hazardous waste at point of origination	154.1 154	265.1084(a)(3)					
identification; owner/ operator shall identify & record point of waste origination	154.1 154	265.1084(a)(3)(i)					
sampling; samples shall be collected at point of waste origination in manner that minimizes volatilization of organics & that is adequately representative	154.1 154	265.1084(a)(3)(ii)					
	154	265.1084(a)(3)(ii)(A)					
	154	265.1084(a)(3)(ii)(B)					
	154	265.1084(a)(3)(ii)(C)					
analysis; each collected sample shall be prepared & analyzed in accordance with one or more of the specified methods	154	265.1084(a)(3)(iii)					
	154	265.1084(a)(3)(iii)(A)	7045.0645	IBR			
	154	265.1084(a)(3)(iii)(B)					
	154	265.1084(a)(3)(iii)(C)					
	154	265.1084(a)(3)(iii)(D)					
	154	265.1084(a)(3)(iii)(E)					
	154	265.1084(a)(3)(iii)(F)					
	154	265.1084(a)(3)(iii)(F)(*1*)					
	154	265.1084(a)(3)(iii)(F)(*2*)					
	154	265.1084(a)(3)(iii)(G)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	154	265.1084(a)(3)(iii)(G)(*1*)					
	154	265.1084(a)(3)(iii)(G)(*2*)					
	154	265.1084(a)(3)(iii)(H)					
	154	265.1084(a)(3)(iii)(I)					
calculations; average VO concentration on mass-weighted basis shall be calculated by using specified equation	154	265.1084(a)(3)(iv)					
use of owner/operator knowledge to determine average VO concentration of hazardous waste at point of origination	154.1 154	265.1084(a)(4)					
prepare documentation of basis for owner's or operator's knowledge of hazardous waste stream's average VO concentration; examples	154.1 154	265.1084(a)(4)(i)	7045.0645	IBR			
if test data are used as basis of knowledge, owner/operator shall document test method, sampling protocol, & means by which sampling & analytical variability are accounted for; examples	154.1 154	265.1084(a)(4)(ii)					
owner/operator using chemical constituent-specific concentration test data as basis for knowledge may adjust test data; how to adjust data	154.1 154	265.1084(a)(4)(iii)					
if Regional Administrator & owner/operator disagree on the determination, then results of direct measurement as in 265.1084(a)(3) shall be used; Regional Administrator may perform or request owner/operator to perform determination	154	265.1084(a)(4)(iv)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
11	waste determination procedures for treated hazardous waste	154.1 154	265.1084(b)					
28	applicable waste determinations shall be performed for each treated hazardous waste placed in units exempted under 265.1083(c)(2) from using air emission controls in accordance with 265.1085-1088	154.1 154	265.1084(b)(1)					
	owner/operator shall designate & record specific provision in 265.1083(c)(2) under which waste determination is performed; applicable procedures in 265.1084(b)(3)-(9) shall be used in waste determination	154.1 154	265.1084(b)(2)					
	procedure to determine average VO concentration of hazardous waste at point of waste treatment	154.1 154	265.1084(b)(3)					
	ID; owner/operator shall identify & record point of waste treatment	154	265.1084(b)(3)(i)	7045.0645	IBR			
	sampling; samples shall be collected at point of waste treatment in manner that minimizes volatilization of organics & that is adequately representative	154	265.1084(b)(3)(ii)					
		154	265.1084(b)(3)(ii)(A)					
		154	265.1084(b)(3)(ii)(B)					
		154	265.1084(b)(3)(ii)(C)					
	analysis; each collected sample shall be prepared & analyzed in accordance with one or more of the specified methods	154	265.1084(b)(3)(iii)					
		154	265.1084(b)(3)(iii)(A)					
		154	265.1084(b)(3)(iii)(B)					
		154	265.1084(b)(3)(iii)(C)					
		154	265.1084(b)(3)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
		(iii)(D)					
	154	265.1084(b)(3)(iii)(E)					
	154	265.1084(b)(3)(iii)(F)					
	154	265.1084(b)(3)(iii)(F)(*1*)					
	154	265.1084(b)(3)(iii)(F)(*2*)					
	154	265.1084(b)(3)(iii)(G)					
	154	265.1084(b)(3)(iii)(G)(*1*)					
	154	265.1084(b)(3)(iii)(G)(*2*)					
	154	265.1084(b)(3)(iii)(H)	7045.0645	IBR			
	154	265.1084(b)(3)(iii)(I)					
calculations; average VO concentration on mass-weighted basis shall be calculated by using specified equation	154	265.1084(b)(3)(iv)					
procedure to determine exit concentration limit for treated hazardous waste	154.1 154	265.1084(b)(4)					
point of origination for each hazardous waste treated by the process at the same time shall be identified	154.1 154	265.1084(b)(4)(i)					
if single hazardous waste stream is identified, then exit concentration limit shall be 500 ppmw	154.1 154	265.1084(b)(4)(ii)					
if more than one hazardous waste stream is identified, then average VO concentration of each waste stream shall be determined; exit	154.1 154	265.1084(b)(4)(iii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
concentration limit shall be calculated using results determined for each waste stream & the specified equation							
procedure to determine organic reduction efficiency for treated hazardous waste	154.1 154	265.1084(b)(5)					
organic reduction efficiency shall be determined based on results for minimum of 3 consecutive runs	154.1 154	265.1084(b)(5)(i)					
all hazardous waste streams entering & exiting the treatment process shall be identified; owner/operator shall prepare sampling plan	154.1 154	265.1084(b)(5)(ii)					
for each run, information shall be determined for each hazardous waste stream identified in 265.1084(b)(5)(ii) using specified procedures	154.1 154	265.1084(b)(5)(iii)					
	154	265.1084(b)(5)(iii)(A)	7045.0645	IBR			
	154	265.1084(b)(5)(iii)(B)					
waste volatile organic mass flow entering & exiting the process shall be calculated using results determined in accordance with 265.1084(b)(5)(iii) & the specified equations	154	265.1084(b)(5)(iv)					
organic reduction efficiency of the process shall be calculated using results determined in accordance with 265.1084(b)(5)(iv) & the specified equations	154	265.1084(b)(5)(v)					
procedure to determine organic biodegradation efficiency for treated hazardous waste	154.1 154	265.1084(b)(6)					
fraction of organics biodegraded shall be determined using the procedure in 40 CFR 63, appendix C	154.1 154	265.1084(b)(6)(i)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
organic biodegradation efficiency of the process shall be calculated using specified equation	154.1 154	265.1084(b)(6)(ii)					
procedure to determine required organic mass removal rate for treated hazardous waste	154.1 154	265.1084(b)(7)					
all of hazardous waste streams entering treatment process shall be identified	154.1 154	265.1084(b)(7)(i)					
average VO concentration of each hazardous waste stream identified at point of origination shall be determined in accordance with 265.1084(a)	154.1 154	265.1084(b)(7)(ii)					
for each individual hazardous waste stream that has average VO concentration $\geq$ 500 ppmw at point of origination, average volumetric flow rate & density of hazardous waste stream shall be determined	154.1 154	265.1084(b)(7)(iii)					
RMR shall be calculated using average VO concentration, average volumetric flow rate density determined for each hazardous waste stream, & specified equation	154.1 154	265.1084(b)(7)(iv)	7045.0645	IBR			
procedure to determine actual organic mass removal rate for treated hazardous waste	154.1 154	265.1084(b)(8)					
MR shall be determined based on results for minimum of 3 consecutive runs; sampling time for runs shall be 1 hour	154.1, 154	265.1084(b)(8)(i)					
waste volatile organic mass flow entering & exiting the process shall be determined in accordance with 265.1084(b)(5)(iv)	154.1 154	265.1084(b)(8)(ii)					
MR shall be calculated by using the results determined in	154.1 154	265.1084(b)(8)(iii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	accordance with 265.1084(b)(8)(ii) & specified equation							
	procedure to determine actual organic mass biodegradation rate for treated waste	154.1 154	265.1084(b)(9)					
	MR shall be determined based on results for minimum of 3 consecutive runs; sampling time for runs shall be 1 hour	154.1 154	265.1084(b)(9)(i)					
	waste organic mass flow entering the process shall be determined in accordance with 265.1084(b)(5)(iv)	154.1 154	265.1084(b)(9)(ii)					
	fraction of organic biodegraded shall be determined using procedure in 40 CFR 63, appendix C	154.1 154	265.1084(b)(9)(iii)					
	actual organic mass biodegradation rate shall be calculated using mass flow rates & fraction of organic biodegraded determined in accordance with 265.1084(b)(9)(ii)&(iii) & specified equation	154	265.1084(b)(9)(iv)	7045.0645	IBR			
11	procedure to determine maximum organic vapor pressure of hazardous waste in a tank	154.1 154	265.1084(c)					
	maximum organic vapor pressure shall be determined for each hazardous waste placed in a tank in accordance with Tank Level 1 controls in 265.1085(c)	154.1 154	265.1084(c)(1)					
28	direct measurement as in 265.1084(c)(3) or knowledge of the waste as in 265.1084(c)(4) shall be used to determine maximum organic vapor pressure representative of hazardous waste composition stored or treated in the tank	154.1 154	265.1084(c)(2)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
direct measurement to determine maximum organic vapor pressure of hazardous waste	154.1 154	265.1084(c)(3)					
sufficient number of samples shall be collected to represent waste in the tank; samples shall be collected & handled in accordance with written procedures & documented in site sampling plan; what the plan shall describe; copy of the plan to be maintained on-site; example of acceptable plan in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," SW-846	154.1 154.5 154	265.1084(c)(3)(i)					
any appropriate one of the specified methods may be used to analyze samples & compute the maximum organic vapor pressure	154.1 154	265.1084(c)(3)(ii)					
	154.1 154	265.1084(c)(3)(ii)(A)	7045.0645	IBR			
	154.1 154	265.1084(c)(3)(ii)(B)					
	154.1 154	265.1084(c)(3)(ii)(C)					
	154.1 154	265.1084(c)(3)(ii)(D)					
	154.1 154	265.1084(c)(3)(ii)(E)					
use of knowledge to determine maximum organic vapor pressure of hazardous waste; documentation shall be prepared & recorded that presents basis for owner/operator's knowledge that maximum organic vapor pressure of hazardous waste is < that listed in 265.1085(b)(1)(i); example of information that may be used	154.1 154	265.1084(c)(4)					
procedure for determining no detectable organic emissions:	154	265.1084(d)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
test shall be conducted in accordance with procedures in Method 21 of part 60, appendix A; each potential leak interface shall be checked; examples of potential leak interfaces that are associated with covers & closure devices	154	265.1084(d)(1)					
test shall be performed when hazardous waste unit contains organic concentration representative of wastes expected to be managed; cover & closure devices shall be closed during test	154	265.1084(d)(2)					
detection instrument shall meet criteria of Method 21 of part 60, appendix A, except instrument response factor criteria shall be for average composition, not for each constituent	154	265.1084(d)(3)					
detection instrument shall be calibrated before use each day by procedures in Method 21, part 60, appendix A	154	265.1084(d)(4)	7045.0645	IBR			
calibration gases shall be as follows:	154	265.1084(d)(5)					
zero air	154	265.1084(d)(5)(i)					
a mixture of methane in air at concentration < 10,000 ppmv	154	265.1084(d)(5)(ii)					
background level shall be determined according to Method 21 of part 60, appendix A	154	265.1084(d)(6)					
each potential leak interface shall be checked by traversing the instrument probe around the leak as described in Method 21 of part 60, appendix A; what to do if sampling is impeded by cover or closure device configuration	154	265.1084(d)(7)					
arithmetic difference between	154	265.1084(d)(8)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	maximum organic concentration shall be compared with value of 500 ppmv except when monitoring seal around a rotating shaft; if difference is < 500 ppmv, leak interface is determined to operate with no detectable organic emissions							
	for seals around a rotating shaft, arithmetic difference between maximum organic concentration shall be compared with value of 10,000 ppmw; if difference is < 10,000 ppmw, leak interface is determined to operate with no detectable organic emissions	154	265.1084(d)(9)					
xxix	STANDARDS: TANKS							
	provisions of 265.1085 apply to control of air pollutant emissions from tanks for which 265.1083(b) references use of 265.1085 for such air emission control	154	265.1085(a)	7045.0645	IBR			
	owner/operator shall control air pollutant emissions from each tank subject to 265.1085 in accordance with the following:	154	265.1085(b)					
	requirements for a tank that manages hazardous waste & meets conditions in 265.1085(b)(1)(i)-(iii)	154	265.1085(b)(1)					
	hazardous waste in the tank has maximum organic vapor pressure < the limit for the tank's capacity category as specified	154	265.1085(b)(1)(i)					
		154	265.1085(b)(1)(i)(A)					
		154	265.1085(b)(1)(i)(B)					
		154	265.1085(b)(1)(i)(C)					
	hazardous waste in the tank is not heated by owner/operator to	154	265.1085(b)(1)(ii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
temperature at which maximum organic vapor pressure is determined according to 265.1085(b)(1)(i)							
hazardous waste in the tank is not treated by owner/operator using waste stabilization process, as in 265.1081	154	265.1085(b)(1)(iii)					
requirements for tanks that do not meet 265.1085(b)(1)(i)-(iii); examples	154	265.1085(b)(2)					
owners/operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet requirements in 265.1085(c)(1)-(c)(4)	154	265.1085(c)					
owner/operator shall determine maximum organic vapor pressure for hazardous waste in tank using Tank Level 1 controls before placing waste in tank; maximum organic vapor pressure shall be determined using 265.1084(c); when determinations shall be performed	154	265.1085(c)(1)	7045.0645	IBR			
tank shall be equipped with fixed roof designed to meet the following:	154	265.1085(c)(2)					
roof & its closure devices shall form a barrier over the surface of hazardous waste in the tank; what constitutes a fixed roof	154	265.1085(c)(2)(i)					
installed without visible cracks, holes, gaps, or other open spaces between joints or edges	154	265.1085(c)(2)(ii)					
how each opening in the fixed roof shall be equipped with a closure device or connected by a closed-vent system	154	265.1085(c)(2)(iii)					
	154	265.1085(c)(2)(iii)(A)					
	154	265.1085(c)(2)(					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
		iii)(B)					
fixed roof & its closure devices shall consist of materials to minimize exposure of hazardous waste to the atmosphere & maintain integrity throughout service life; factors for selecting materials	154	265.1085(c)(2)(iv)					
whenever hazardous waste is in the tank, fixed roof shall be installed with closure device secured in closed position except:	154	265.1085(c)(3)					
opening of closure devices or removal of fixed roof is allowed to provide access or to remove accumulated sludge	154	265.1085(c)(3)(i)					
	154	265.1085(c)(3)(i)(A)	7045.0645	IBR			
	154	265.1085(c)(3)(i)(B)					
opening of pressure relief devices which vent to the atmosphere during normal operations to maintain internal pressure; designed to operate with no detectable emissions when closed; remain in closed position when internal pressure is within operating range determined by owner/operator; normal operating conditions	154	265.1085(c)(3)(ii)					
opening of safety device allowed to avoid unsafe condition	154	265.1085(c)(3)(iii)					
owner/operator shall inspect air emission control equipment as follows:	154	265.1085(c)(4)					
fixed roof & its closure devices shall be visually inspected for defects; examples	154	265.1085(c)(4)(i)					
initial inspection of fixed roof & closure devices on or before tank becomes subject to 265.1085; then	154	265.1085(c)(4)(ii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
at least once a year except under 265.1085(l)							
in event of defect, it shall be repaired in accordance with 265.1085(k)	154	265.1085(c)(4)(iii)					
owner/operator shall maintain inspection record in accordance with 265.1090(b)	154	265.1085(c)(4)(iv)					
owners/operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following:	154	265.1085(d)					
fixed-roof tank equipped with internal floating roof in accordance with 265.1085(e);	154	265.1085(d)(1)					
tank equipped with external floating roof in accordance with 265.1085(f);	154	265.1085(d)(2)	7045.0645	IBR			
tank vented through a closed-vent system to a control device in accordance with 265.1085(g);	154	265.1085(d)(3)					
pressure tank designed & operated in accordance with 265.1085(h); or	154	265.1085(d)(4)					
tank inside enclosure vented through a closed-vent system to an enclosed combustion control device in accordance with 265.1085(i)	154	265.1085(d)(5)					
owner/operator who controls emissions from a tank using a fixed-roof with internal floating roof shall meet requirements in 265.1085(e)(1)-(3)	154	265.1085(e)					
tank shall be equipped with a fixed roof & internal floating roof in accordance with the following:	154	265.1085(e)(1)					
internal floating roof shall be designed to float on liquid surface	154	265.1085(e)(1)(i)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
except when supported by leg supports							
internal floating roof shall be equipped with continuous seal that meets specified conditions	154	265.1085(e)(1)(ii)					
	154	265.1085(e)(1)(ii)(A)					
	154	265.1085(e)(1)(ii)(B)					
the internal floating roof shall meet listed specifications	154	265.1085(e)(1)(iii)					
	154	265.1085(e)(1)(iii)(A)					
	154	265.1085(e)(1)(iii)(B)	7045.0645	IBR			
	154	265.1085(e)(1)(iii)(C)					
	154	265.1085(e)(1)(iii)(D)					
	154	265.1085(e)(1)(iii)(E)					
	154	265.1085(e)(1)(iii)(F)					
owner/operator shall operate the tank in accordance with the following:	154	265.1085(e)(2)					
when floating roof is resting on leg supports, filling, emptying, or refilling shall be continuous & completed as soon as practical	154	265.1085(e)(2)(i)					
automatic bleeder vents to be closed at all times when roof is floating, except when roof is being floated off or landed on leg supports	154	265.1085(e)(2)(ii)					
prior to filling tank, each opening in internal floating roof shall be closed; rim space vents open only	154	265.1085(e)(2)(iii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
when internal floating roof is not floating or when pressure exceeds manufacturer's recommended setting							
owner/operator shall inspect internal floating roof in accordance with the following:	154	265.1085(e)(3)					
floating roof & its closure devices shall be visually inspected for defects which could result in air pollutant emissions; potential defects	154	265.1085(e)(3)(i)					
owner/operator shall inspect internal floating roof components with visual inspections except as in 265.1085(e)(3)(iii)	154	265.1085(e)(3)(ii)					
	154	265.1085(e)(3)(ii)(A)	7045.0645	IBR			
	154	265.1085(e)(3)(ii)(B)					
as alternative to 265.1085(e)(3)(ii) inspections for internal floating roof equipped with two continuous seals, owner/operator may perform visual inspection each time tank is emptied & degassed & at least every 5 years	154	265.1085(e)(3)(iii)					
prior to 265.1085(e)(3)(ii) or (iii) inspections, owner/operator shall notify Regional Administrator in advance to allow for observer during inspection; notify of date & location of inspection	154	265.1085(e)(3)(iv)					
	154	265.1085(e)(3)(iv)(A)					
	154	265.1085(e)(3)(iv)(B)					
in event of defect, it shall be repaired in accordance with 265.1085(k)	154	265.1085(e)(3)(v)					
owner/operator shall maintain inspection record in accordance with 265.1090(b)	154	265.1085(e)(3)(vi)					
owner/operator who controls	154	265.1085(f)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
emissions from tank using external floating roof shall meet requirements in 265.1085(f)(1)-(3)							
owner/operator shall design external floating roof in accordance with the following:	154	265.1085(f)(1)					
external floating roof shall be designed to float on liquid surface except when supported by leg supports	154	265.1085(f)(1)(i)					
floating roof shall be equipped with two continuous seals; lower seal is referred to as primary seal & upper seal as secondary seal	154	265.1085(f)(1)(ii)					
	154	265.1085(f)(1)(ii)(A)	7045.0645	IBR			
	154	265.1085(f)(1)(ii)(B)					
external floating roof shall meet certain specifications	154	265.1085(f)(1)(iii)					
	154	265.1085(f)(1)(iii)(A)					
	154	265.1085(f)(1)(iii)(B)					
	154	265.1085(f)(1)(iii)(C)					
	154	265.1085(f)(1)(iii)(D)					
	154	265.1085(f)(1)(iii)(E)					
	154	265.1085(f)(1)(iii)(F)					
	154	265.1085(f)(1)(iii)(G)					
	154	265.1085(f)(1)(iii)(H)					
	154	265.1085(f)(1)(iii)(I)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
owner/operator shall operate the tank in accordance with the following:	154	265.1085(f)(2)					
when floating roof is resting on leg supports, filling, emptying, or refilling shall be continuous & completed as soon as practical	154	265.1085(f)(2)(i)					
except for automatic bleeder vents, rim space vents, roof drains, & leg sleeves, each roof opening shall be secured & closed at all times except when closure device must be open for access	154	265.1085(f)(2)(ii)					
covers on each access hatch & gauge float well shall be bolted or fastened when in closed position	154	265.1085(f)(2)(iii)	7045.0645	IBR			
automatic bleeder vents to be closed at all times when roof is floating, except when roof is being floated off or landed on leg supports	154	265.1085(f)(2)(iv)					
rim space vents shall be open only at times that roof is being floated off leg supports or when pressure beneath rim seal exceeds manufacturer's recommended setting	154	265.1085(f)(2)(v)					
cap on the end of unslotted guide poles shall be closed at all times except when measuring liquid level or collecting samples	154	265.1085(f)(2)(vi)					
cover on each gauge hatch or sample well shall be closed at all times except when hatch or well must be accessed	154	265.1085(f)(2)(vii)					
both primary & secondary seals shall completely cover annular space between external floating roof & tank wall in continuous fashion except during inspections	154	265.1085(f)(2)(viii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
owner/operator shall inspect external floating roof in accordance with the following:	154	265.1085(f)(3)					
external floating roof shall meet certain specifications	154	265.1085(f)(3)(i)					
	154	265.1085(f)(3)(i)(A)					
	154	265.1085(f)(3)(i)(B)					
	154	265.1085(f)(3)(i)(C)					
	154	265.1085(f)(3)(i)(D)	7045.0645	IBR			
	154	265.1085(f)(3)(i)(D)(*1*)					
	154	265.1085(f)(3)(i)(D)(*2*)					
	154	265.1085(f)(3)(i)(D)(*3*)					
	154	265.1085(f)(3)(i)(D)(*4*)					
	154	265.1085(f)(3)(i)(E)					
	154	265.1085(f)(3)(i)(F)					
owner/operator shall visually inspect external floating roof in accordance with specified requirements	154	265.1085(f)(3)(ii)					
	154	265.1085(f)(3)(ii)(A)					
	154	265.1085(f)(3)(ii)(B)					
	154	265.1085(f)(3)(ii)(C)					
	154	265.1085(f)(3)(ii)(D)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
prior to 265.1085(f)(3)(i) or (ii) inspections, owner/operator shall notify Regional Administrator in advance to allow for observer present during inspection; and notify of date & location of inspection	154	265.1085(f)(3)(iii)					
	154	265.1085(f)(3)(iii)(A)					
	154	265.1085(f)(3)(iii)(B)					
	154	265.1085(f)(3)(iii)(C)					
owner/operator who controls air pollutant emissions from a tank by venting to a control device shall meet requirements in 265.1085(g)(1)-(3)	154	265.1085(g)					
tank shall be covered by fixed roof & vented directly to a control device in accordance with the following:	154	265.1085(g)(1)	7045.0645	IBR			
fixed roof & its closure devices shall form a continuous barrier over liquid in tank	154	265.1085(g)(1)(i)					
each opening in fixed roof not vented to control device shall be equipped with a closure device; if pressure in vapor headspace is < atmospheric pressure; if pressure in vapor headspace is ≥ atmospheric pressure	154	265.1085(g)(1)(ii)					
fixed roof & its closure devices shall be made of suitable materials that will minimize exposure to atmosphere & maintain integrity throughout service life; factors to consider when selecting materials	154	265.1085(g)(1)(iii)					
closed-vent system & control device shall be designed & operated in accordance with 265.1088	154	265.1085(g)(1)(iv)					
whenever hazardous waste is in the tank, fixed roof shall be installed with closure device	154	265.1085(g)(2)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
secured in closed position except:							
venting to control device is not required, & opening of closure device or removal of fixed roof is allowed in specified circumstances	154	265.1085(g)(2)(i)					
	154	265.1085(g)(2)(i)(A)					
	154	265.1085(g)(2)(i)(B)					
opening of safety device, as defined in 265.1081, is allowed any time to avoid unsafe condition	154	265.1085(g)(2)(ii)					
owner/operator shall inspect & monitor air emission control equipment as follows:	154	265.1085(g)(3)	7045.0645	IBR			
fixed roof & its closure devices shall be visually inspected for defects; examples	154	265.1085(g)(3)(i)					
closed-vent system & control device shall be inspected & monitored in accordance with 265.1088	154	265.1085(g)(3)(ii)					
perform initial inspection of air emission control equipment on or before the tank becomes subject to 265.1085; thereafter, at least once a year except under special conditions of 265.1085(l)	154	265.1085(g)(3)(iii)					
in event of defect, it shall be repaired in accordance with 265.1085(k)	154	265.1085(g)(3)(iv)					
owner/operator shall maintain inspection record in accordance with 265.1090(b)	154	265.1085(g)(3)(v)					
owner/operator who controls air pollutant emissions by using a pressure tank shall meet the following:	154	265.1085(h)					
tank shall not be designed to vent to atmosphere as result of	154	265.1085(h)(1)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
compression in vapor headspace during tank filling							
tank openings shall be equipped with closure devices that operate with no detectable organic emissions as in 265.1084(d)	154	265.1085(h)(2)					
whenever hazardous waste is in the tank, it shall be operated as a closed system that does not vent to atmosphere except if safety device requires opening to avoid unsafe condition	154	265.1085(h)(3)					
owner/operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to enclosed combustion control device shall meet requirements in 265.1085(i)(1)-(4)	154	265.1085(i)	7045.0645	IBR			
tank shall be inside an enclosure; enclosure shall be designed & operated in accordance with 52.741, appendix B; allowance for openings; owner/ operator shall perform verification procedure as in Section 5.0	154	265.1085(i)(1)					
enclosure shall be vented through a closed-vent system to enclosed combustion control device designed & operated in accordance with standards specified in 265.1088	154	265.1085(i)(2)					
safety devices, defined in 265.1081, may be installed & operated on any enclosure, closed-vent system, or control device used to comply with 265.1085(i)(1)-(2)	154	265.1085(i)(3)					
owner/operator shall inspect & monitor the closed-vent system & control device as in 265.1088	154	265.1085(i)(4)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
owner/operator shall transfer hazardous waste to tank subject to 265.1085 in accordance with the following:	154	265.1085(j)					
transfer of hazardous waste, except as in 265.1085(j)(2), to tank from another tank subject to 265.1085 or from surface impoundment subject to 265.1086 shall use continuous hard-piping or another closed system; individual drain system	154	265.1085(j)(1)					
requirements of 265.1085(j)(1) do not apply when transferring hazardous waste to tank under following:	154	265.1085(j)(2)	7045.0645	IBR			
hazardous waste meets average VO concentration conditions in 265.1083(c)(1) at point of waste origination	154	265.1085(j)(2)(i)					
hazardous waste has been treated by organic destruction or removal process to meet 265.1083(c)(2) requirements	154	265.1085(j)(2)(ii)					
owner/operator shall repair each defect detected during inspections performed under 265.1085(c)(4), (e)(3), (f)(3), or (g)(3) as follows:	154	265.1085(k)					
owner/operator shall make first efforts at repair no later than 5 days after detection & repair shall be completed no later than 45 days after detection except as in 265.1085(k)(2)	154	265.1085(k)(1)					
repairs may be delayed beyond 45 days if repair would require emptying or temporary removal from service & no alternative tanks are available; owner/ operator shall repair defect as soon as tank stops operation; repair shall be completed before	154	265.1085(k)(2)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	resuming operation							
	after initial inspection & monitoring of cover pursuant to 265.1085, subsequent inspection & monitoring may be at intervals longer than 1 year under the following conditions:	154	265.1085(l)					
	if inspecting or monitoring exposes worker to dangerous, hazardous, or other unsafe conditions, owner/operator may designate cover as unsafe & comply with the following:	154	265.1085(l)(1)					
	prepare written explanation	154	265.1085(l)(1)(i)	7045.0645	IBR			
	develop & implement written plan & schedule to inspect & monitor	154	265.1085(l)(1)(ii)					
	when a tank is buried partially or entirely underground, owner/operator must inspect & monitor only portions of cover located on or above ground surface	154	265.1085(l)(2)					
29	STANDARDS: SURFACE IMPOUNDMENTS							
	provisions of 265.1086 apply to control of air pollutant emissions from surface impoundments for which 265.1083(b) references this section	154	265.1086(a)	7045.0645	IBR			
	owner/operator shall control air pollutant emissions from surface impoundment by installing & operating either:	154	265.1086(b)					
	floating membrane cover in accordance with 265.1086(c); or	154	265.1086(b)(1)					
	cover vented through a closed-vent system to a control device in accordance with 265.1086(d)	154	265.1086(b)(2)					
	owner/operator who controls emissions from surface	154	265.1086(c)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
impoundment using a floating membrane cover shall meet requirements in 265.1086(c)(1)-(3)							
surface impoundment shall be equipped with a floating membrane cover designed to meet the following:	154	265.1086(c)(1)					
designed to float on liquid surface during normal operations & form a continuous barrier	154	265.1086(c)(1)(i)	7045.0645	IBR			
cover shall be fIBRicated from synthetic membrane material with certain specifications	154	265.1086(c)(1)(ii)					
	154	265.1086(c)(1)(ii)(A)					
	154	265.1086(c)(1)(ii)(B)					
installed without visible cracks, holes, gaps, or open spaces between cover edges or foundation mountings	154	265.1086(c)(1)(iii)					
except as in 265.1086(c)(1)(v), openings in floating membrane cover shall be equipped with a closure device that does not allow for open spaces in closure device or between the opening & device	154	265.1086(c)(1)(iv)					
floating membrane cover may be equipped with emergency cover drains; drains shall be equipped with a slotted membrane fIBRic cover or flexible fIBRic sleeve seal	154	265.1086(c)(1)(v)					
closure devices shall consist of materials to minimize exposure of hazardous waste to atmosphere & maintain integrity throughout service life; factors to consider when selecting materials	154	265.1086(c)(1)(vi)					
whenever hazardous waste is in	154	265.1086(c)(2)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
surface impoundment, floating membrane cover shall float on the liquid & each closure device in closed position except:							
opening of closure devices or removal of cover is allowed to provide access to surface impoundment or to remove accumulated sludge	154	265.1086(c)(2)(i)					
	154	265.1086(c)(2)(i)(A)					
	154	265.1086(c)(2)(i)(B)	7045.0645	IBR			
opening of safety device is allowed to avoid unsafe condition	154	265.1086(c)(2)(ii)					
owner/operator shall inspect floating membrane cover as follows:	154	265.1086(c)(3)					
floating membrane cover & its closure devices shall be visually inspected for defects; examples	154	265.1086(c)(3)(i)					
perform initial inspection of floating membrane cover & closure devices on or before surface impoundment becomes subject to 265.1086; then at least once a year except under 265.1086(g)	154	265.1086(c)(3)(ii)					
in event of defect, it shall be repaired in accordance with 265.1086(f)	154	265.1086(c)(3)(iii)					
owner/operator shall maintain inspection record in accordance with 265.1090(c)	154	265.1086(c)(3)(iv)					
owner/operator who controls air pollutant emissions from surface impoundment using cover vented to a control device shall meet requirements in 265.1086(d)(1)-(3)	154	265.1086(d)					
surface impoundment covered & vented directly to a control device	154	265.1086(d)(1)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
in accordance with the following:							
cover & closure devices shall form a continuous barrier over liquid in surface impoundment	154	265.1086(d)(1)(i)					
opening in cover not vented to control device equipped with closure device; if pressure in vapor headspace is < atmospheric pressure; if pressure in vapor headspace is ≥ atmospheric pressure	154	265.1086(d)(1)(ii)					
cover & closure devices shall be made of suitable materials to minimize exposure to atmosphere & maintain integrity throughout service life; factors to consider when selecting materials	154	265.1086(d)(1)(iii)	7045.0645	IBR			
closed-vent system & control device shall be designed & operated in accordance with 265.1088	154	265.1086(d)(1)(iv)					
whenever hazardous waste is in surface impoundment, the cover shall be installed with closure device in closed position except:	154	265.1086(d)(2)					
venting to control device is not required, & opening of closure device or removal of cover is allowed in specified circumstances	154	265.1086(d)(2)(i)					
	154	265.1086(d)(2)(i)(A)					
	154	265.1086(d)(2)(i)(B)					
opening of safety device, as in 265.1081, allowed to avoid unsafe condition	154	265.1086(d)(2)(ii)					
owner/operator shall inspect & monitor air emission control equipment as follows:	154	265.1086(d)(3)					
surface impoundment cover & closure devices shall be visually	154	265.1086(d)(3)(i)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
inspected for defects; examples							
closed-vent system & control device shall be inspected & monitored in accordance with 265.1088	154	265.1086(d)(3)(ii)					
initial inspection of air emission control equipment on or before surface impoundment becomes subject to 265.1086; then at least once a year except under 265.1086(g)	154	265.1086(d)(3)(iii)					
in event of defect, it shall be repaired in accordance with 265.1086(f)	154	265.1086(d)(3)(iv)	7045.0645	IBR			
owner/operator shall maintain inspection record in accordance with 265.1090(c)	154	265.1086(d)(3)(v)					
owner/operator shall transfer hazardous waste to surface impoundment subject to 265.1086 in accordance with:	154	265.1086(e)					
transfer of hazardous waste, except as in 265.1086(e)(2), to surface impoundment from another surface impoundment subject to 265.1086 or from tank subject to 265.1085 shall use continuous hard-piping or another closed system; what constitutes individual drain system	154	265.1086(e)(1)					
requirements of 265.1086(e)(1) do not apply when transferring hazardous waste to surface impoundment under the following:	154	265.1086(e)(2)					
hazardous waste meets average VO concentration conditions in 265.1083(c)(1) at point of waste origination	154	265.1086(e)(2)(i)					
hazardous waste has been treated	154	265.1086(e)(2)(					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	by organic destruction or removal process to meet 265.1083(c)(2) requirements		ii)					
	owner/operator shall repair each defect detected during inspections performed in accordance with 265.1086(c)(3) or (d)(3) as follows:	154	265.1086(f)					
	owner/operator shall make first efforts at repair no later than 5 days after detection; repair shall be completed no later than 45 days after detection except as in 265.1086(f)(2)	154	265.1086(f)(1)	7045.0645	IBR			
	conditions under which repairs may be delayed beyond 45 days; owner/operator shall repair defect as soon as process generating hazardous waste in surface impoundment stops operation; repair completed before resuming operation	154	265.1086(f)(2)					
	following initial inspection & monitoring of the cover as required by Subpart CC, inspection & monitoring at intervals longer than 1 year under the following conditions:	154	265.1086(g)					
	written explanation stating why cover is unsafe, if required	154	265.1086(g)(1)					
	develop & implement written plan & schedule to inspect & monitor cover	154	265.1086(g)(2)					
29	STANDARDS: CONTAINERS							
	provisions of 265.1087 apply to control of air pollutant emissions from containers for which 265.1083(b) references this section	154	265.1087(a)	7045.0645	IBR			
	general requirements	154	265.1087(b)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
13	owner/operator shall control air pollutant emissions from each container subject to 265.1087 in accordance with the following:	154	265.1087(b)(1)					
	for containers having design capacities > 0.1 m^3 & $\leq$ 0.46 m^3, owner/operator shall control air pollutant emissions in accordance with Container Level 1 standards in 265.1087(c)	154	265.1087(b)(1)(i)					
	for containers having design capacities > 0.46 m^3 not in light material service, owner/operator shall control air pollutant emissions in accordance with Container Level 1 standards in 265.1087(c)	154	265.1087(b)(1)(ii)	7045.0645	IBR			
	for containers having design capacities > 0.46 m^3 that are in light material service, owner/operator shall control air pollutant emissions in accordance with Container Level 2 standards in 265.1087(d)	154	265.1087(b)(1)(iii)					
	when containers with design capacities > 0.1 m^3 are used for treatment of hazardous waste by waste stabilization process, owner/operator shall control air pollutant emissions in accordance with Container Level 3 standards in 265.1087(e)	154	265.1087(b)(2)					
	Container Level 1 standards	154	265.1087(c)					
	using Container Level 1 controls is one of following:	154	265.1087(c)(1)					
	meets applicable U.S. DOT regulations on packaging for transportation as in 265.1087(f)	154	265.1087(c)(1)(i)					
	equipped with cover & closure devices that form a continuous barrier over openings such that no	154	265.1087(c)(1)(ii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
open spaces into interior of container are visible							
open-top container in which organic-vapor suppressing barrier is used such that no hazardous waste is exposed; example	154	265.1087(c)(1)(iii)					
container used to meet requirements of 265.1087(c)(1)(ii) or (c)(1)(iii) shall be equipped with covers & closure devices composed of materials to minimize exposure of hazardous waste to the atmosphere & to maintain equipment integrity; factors to consider in selecting materials	154	265.1087(c)(2)	7045.0645	IBR			
when using Container Level 1 controls, owner/operator shall install covers & closure devices and secure & maintain them in closed position except:	154	265.1087(c)(3)					
opening of closure device or cover is allowed to add hazardous waste or other material as specified	154	265.1087(c)(3)(i)					
	154	265.1087(c)(3)(i)(A)					
	154	265.1087(c)(3)(i)(B)					
opening of closure device or cover is allowed to remove hazardous waste as specified	154	265.1087(c)(3)(ii)					
	154	265.1087(c)(3)(ii)(A)					
	154	265.1087(c)(3)(ii)(B)					
opening of closure device or cover is allowed when access is needed to perform routine activities other than transfer hazardous waste; examples; after activity, promptly secure closure device or reinstall cover	154	265.1087(c)(3)(iii)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
opening of pressure relief devices allowed during normal operations to maintain internal pressure in accordance with container design; device shall operate with no detectable organic emissions when closed; settings at which device opens shall allow device to remain in closed position when internal pressure is within operating range; examples	154	265.1087(c)(3)(iv)					
opening of safety device, as defined in 265.1081, is allowed any time conditions require it to avoid unsafe condition	154	265.1087(c)(3)(v)	7045.0645	IBR			
inspect containers & their covers & closure devices as follows:	154	265.1087(c)(4)					
if hazardous waste is present in container when owner/operator first accepts possession & container is not emptied within 24 hours, it shall be visually inspected; if defect is detected, owner/operator shall repair in accordance with 265.1087(c)(4)(iii)	154	265.1087(c)(4)(i)					
if container remains at the facility for 1 year or more, owner/operator shall inspect it & its cover & closure devices initially & thereafter, at least every 12 months; if defect is detected, owner/operator shall repair in accordance with 265.1087(c)(4)(iii)	154	265.1087(c)(4)(ii)					
when defect is detected, owner/operator shall make repair no later than 24 hours after detection & complete no later than 5 days after detection; if repair cannot be completed within 5 days, hazardous waste shall be removed, & container not used until	154	265.1087(c)(4)(iii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	repaired							
	owner/operator shall maintain a copy of the procedure used to determine that containers with 0.46 m^3 or greater capacity are not managing hazardous waste in light material service	154	265.1087(c)(5)					
	Container Level 2 standards	154	265.1087(d)	7045.0645	IBR			
13	container using Container Level 2 controls is one of following:	154	265.1087(d)(1)					
	meets applicable U.S. DOT regulations on packaging for transportation as in 265.1087(f)	154	265.1087(d)(1)(i)					
	container that operates with no detectable organic emissions in accordance 265.1087(g)	154	265.1087(d)(1)(ii)					
	container that has been demonstrated to be vapor-tight by using part 60, appendix A, Method 27 in accordance with 265.1087(h)	154	265.1087(d)(1)(iii)					
	transfer of hazardous waste shall minimize exposure to atmosphere, to extent practical; examples that meet 265.1087(d)(2)	154	265.1087(d)(2)					
	owner/operator shall install covers & closure devices and secure & maintain them in closed position except:	154	265.1087(d)(3)					
	opening of closure device or cover is allowed to add hazardous waste or other material as follows	154	265.1087(d)(3)(i)					
		154	265.1087(d)(3)(i)(A)					
		154	265.1087(d)(3)(i)(B)					
	opening of closure device or cover is allowed to remove hazardous waste as follows	154	265.1087(d)(3)(ii)					
		154	265.1087(d)(3)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
		(ii)(A)					
	154	265.1087(d)(3)(ii)(B)					
opening of closure device or cover allowed when access needed to perform routine activities other than transfer; examples; after activity, promptly secure closure device or reinstall cover	154	265.1087(d)(3)(iii)					
opening of pressure relief devices allowed during normal operations to maintain internal pressure in accordance with container design; device shall operate with no detectable organic emissions when in closed position; settings at which device opens shall allow device to remain in closed position when internal pressure is within operating range; examples	154	265.1087(d)(3)(iv)	7045.0645	IBR			
opening of safety device, as defined in 265.1081, is allowed any time conditions require it to avoid unsafe condition	154	265.1087(d)(3)(v)					
owner/operator shall inspect containers & their covers & closure devices as follows:	154	265.1087(d)(4)					
if hazardous waste is present in container when owner/operator first accepts possession & container is not emptied within 24 hours, it shall be visually inspected; if defect detected, owner/operator shall repair in accordance with 265.1087(d)(4)(iii)	154	265.1087(d)(4)(i)					
if container remains at the facility for 1 year or more, owner/operator shall inspect it & its cover & closure devices initially & thereafter, at least every 12 months to check for open spaces	154	265.1087(d)(4)(ii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	into its interior; if defect is detected, owner/operator shall repair in accordance with 265.1087(d)(4)(iii)							
	when defect is detected, owner/ operator shall make efforts at repair no later than 24 hours after detections & complete it as soon as possible but no later than 5 days after detection; if repair cannot be completed within 5 days, hazardous waste shall be removed, & container shall not be used until repaired	154	265.1087(d)(4)(iii)					
	Container Level 3 standards	154	265.1087(e)	7045.0645	IBR			
13	container using Container Level 3 controls is one of following:	154	265.1087(e)(1)					
	container that is vented through a closed-vent system to a control device in accordance with 265.1087(e)(2)(ii)	154	265.1087(e)(1)(i)					
	container that is vented inside an enclosure which is exhausted through closed-vent system to a control device in accordance with 265.1087(e)(2)(i)-(ii)	154	265.1087(e)(1)(ii)					
	owner/operator shall meet the following, as applicable:	154	265.1087(e)(2)					
	container enclosure shall be designed & operated in accordance with 52.741, appendix B; allowance for openings; verification procedure as in § 5.0	154	265.1087(e)(2)(i)					
	closed-vent system & control device shall be designed & operated in accordance with 265.1088	154	265.1087(e)(2)(ii)					
	safety devices, in 265.1081, may be installed & operated on any container, enclosure, closed-vent	154	265.1087(e)(3)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
system, or control device used to comply with 265.1087 (e)(1)							
owner/operator shall inspect & monitor closed-vent system & control devices as in 265.1088	154	265.1087(e)(4)					
owners/operators shall prepare & maintain records specified in 265.1090(d)	154	265.1087(e)(5)	7045.0645	IBR			
for purpose of 265.1087(c)(1)(i) or (d)(1)(i) compliance, containers shall meet applicable U.S. DOT regulations on packaging for transportation as follows:	154	265.1087(f)					
meets applicable requirements in 49 CFR part 178 or 49 CFR part 179	154	265.1087(f)(1)					
hazardous waste managed in container in accordance with 49 CFR part 107, subpart B; 49 CFR part 172; 49 CFR part 173; & 49 CFR part 180	154	265.1087(f)(2)					
no exceptions to the 49 CFR part 178 or 179 regulations are allowed except as in 265.1087(f)(4)	154	265.1087(f)(3)					
for lab pack managed in accordance with 49 CFR part 178, owner/ operator may comply with exceptions for combination packagings specified in 49 CFR 173.12(b)	154	265.1087(f)(4)					
owner/operator shall use procedure in 265.1084(d) for determining container operates with no detectable organic emissions under 265.1087(d)(1)(ii)	154	265.1087(g)					
each potential leak interface on container, its cover, & closure devices shall be checked; examples	154	265.1087(g)(1)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	test performed when container is filled with material expected to be managed in this container; during test, container cover & closure devices shall be closed	154	265.1087(g)(2)					
	procedure for determining container to be vapor-tight using Method 27 of part 60, appendix A to comply with 265.1087(d)(1)(iii)	154	265.1087(h)					
	test performed in accordance with Method 27 of part 60, appendix A	154	265.1087(h)(1)	7045.0645	IBR			
	pressure measurement device shall be used with precision of ±2.5mm water & capable of measuring above that used for vapor pressure tightness	154	265.1087(h)(2)					
	if test results indicate container sustains pressure charge ≤ 750 Pascals, then it's determined to be vapor-tight	154	265.1087(h)(3)					
	STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES							
	265.1088 applies to each closed-vent system & control device installed & operated to control air emissions	154.1	265.1088(a)	7045.0645	IBR			
	closed-vent system shall meet following requirements:	154.1	265.1088(b)					
	route gases, vapors, & fumes to control device that meets requirements in 265.1088(c)	154.1	265.1088(b)(1)					
	designed & operated in accordance with 265.1033(j)	154.1	265.1088(b)(2)					
xxx	if system includes bypass devices, each device shall be equipped with a flow indicator or seal or locking device; for purposes of 265.1088(b)(3)(i) or (ii), other fittings are not bypass devices	154	265.1088(b)(3)					
	if flow indicator is used to comply	154	265.1088(b)(3)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	with 265.1088(b)(3), it shall be installed at inlet to the bypass line; flow indicator is a device which indicates gas or vapor flow		(i)					
	if seal or locking device is used to comply with 265.1088(b)(3), it shall be placed such that bypass device cannot be opened without breaking the seal or removing the lock; examples; inspect seal or closure mechanism at least once a month	154	265.1088(b)(3)(ii)					
	closed-vent system shall be inspected & monitored by owner/operator in accordance with 265.1033(k)	154	265.1088(b)(4)	7045.0645	IBR			
	control device shall meet the following requirements:	154.1	265.1088(c)					
	control device shall be one of following devices:	154.1	265.1088(c)(1)					
	control device designed & operated to reduce by at least 95% total organic content of inlet vapor stream	154.1	265.1088(c)(1)(i)					
	enclosed combustion device designed & operated in accordance with 265.1033(c)	154.1	265.1088(c)(1)(ii)					
	flare designed & operated in accordance with 265.1033(d)	154.1	265.1088(c)(1)(iii)					
30	owner/operator who use closed-vent system & control device to comply with 265.1088 shall comply with 265.1088(c)(2)(i)-(c)(2)(vi)	154	265.1088(c)(2)					
	periods of planned routine maintenance of the control device, during which 265.1088 (c)(1)(i)-(iii) are not met, shall not exceed 240 hours/year	154	265.1088(c)(2)(i)					
	requirements in 265.1088(c)(1)(i)-	154	265.1088(c)(2)(					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	(iii) do not apply during planned routine maintenance		ii)					
	requirements in 265.1088(c)(1)(i)-(iii) do not apply during control device system malfunction	154	265.1088(c)(2)(iii)					
	owner/operator shall demonstrate compliance with 265.1088(c)(2)(i) by recording information in 265.1090(e)(1)(v)	154	265.1088(c)(2)(iv)	7045.0645	IBR			
	owner/operator shall correct control device system malfunctions as soon as practicable to minimize excess air pollutant emissions	154	265.1088(c)(2)(v)					
	owner/operator shall operate closed-vent system such that gases, vapors, or fumes are not vented to control device during maintenance or malfunction except when it is necessary	154	265.1088(c)(2)(vi)					
	owner/operator using carbon adsorption system shall operate & maintain control device in accordance with following requirements:	154.1	265.1088(c)(3)					
	following initial startup, all activated carbon shall be replaced with fresh carbon regularly in accordance with 265.1033(g) or (h)	154.1	265.1088(c)(3)(i)					
xxxi	carbon removed from control device shall be managed in accordance with 265.1033(m)	154.1 154.5 154	265.1088(c)(3)(ii)					
	owner/operator using control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system shall operate & maintain in accordance with 265.1033(i)	154.1	265.1088(c)(4)					

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
demonstrate that control device achieves performance requirements of 265.1088(c)(1) as follows:	154.1	265.1088(c)(5)					
demonstration using performance test as in 265.1088(c)(5)(iii) or design analysis as in 265.1088(c)(5)(iv) for each control device except for following:	154.1	265.1088(c)(5)(i)	7045.0645	IBR			
a flare	154.1	265.1088(c)(5)(i)(A)					
boiler or process heater with design input capacity of 44 megawatts or greater	154.1	265.1088(c)(5)(i)(B)					
boiler or process heater into which vent system is introduced with the primary fuel	154.1	265.1088(c)(5)(i)(C)					
boiler or industrial furnace burning hazardous waste for which owner/operator has been issued a final permit & has designed & operates unit in accordance with 266, Subpart H; or	154.1 154	265.1088(c)(5)(i)(D)					
boiler or industrial furnace burning hazardous waste for which owner/operator designed & operates in accordance with interim status requirements of 266, Subpart H	154.1 154	265.1088(c)(5)(i)(E)					
owner/operator shall demonstrate performance of each flare in accordance with 265.1033(e)	154.1	265.1088(c)(5)(ii)					
for a performance test, owner/operator shall use test methods & procedures in 265.1034(c)(1)-(4)	154.1	265.1088(c)(5)(iii)					
design analysis shall meet requirements specified in	154.1	265.1088(c)(5)(iv)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	265.1035(b)(4)(iii)							
	owner/operator shall demonstrate that a carbon adsorption system achieves 265.1088(c)(1) performance requirements	154.1	265.1088(c)(5)(v)					
	if owner/operator & Regional Administrator do not agree on a demonstration of control device performance using design analysis, then disagreement shall be resolved using performance test in accordance with 265.1088(c)(5)(iii); Regional Administrator may choose authorized representative to observe the test	154.1	265.1088(c)(6)	7045.0645	IBR			
	control device shall be inspected & monitored by owner/operator in accordance with 265.1033(f)(2) & 265.1033(k); readings from each monitoring device inspected at least once each day; any necessary corrective measures immediately implemented	154	265.1088(c)(7)					
29	INSPECTION AND MONITORING REQUIREMENTS							
	owner/operator shall inspect & monitor air emission control equipment in accordance with 265.1085-1088	154	265.1089(a)	7045.0645	IBR			
	owner/operator shall develop & implement a written plan & schedule to perform inspections & monitoring required by 265.1089(a); incorporate plan into facility inspection plan under 265.15	154	265.1089(b)					
	RECORDKEEPING REQUIREMENTS							
xxxii	owners/operator subject to 265, Subpart CC shall record & maintain information specified in 265.1090(b)-(i); with exception,	154	265.1090(a)	7045.0645	IBR			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	records shall be maintained for at least 3 years; documentation maintained until air emission control equipment is replaced; information required by 265.1090(i) shall be maintained as long as the tank or container is not using air emission controls in 264.1084-264.1087							
32	owner/operator of a tank using air emission controls in accordance with 265.1085 shall prepare & maintain records that include:	154	265.1090(b)	7045.0645	IBR			
	for tank using air emission controls in accordance with 264.1085, owner/ operator shall record:	154	265.1090(b)(1)					
	tank ID number	154	265.1090(b)(1)(i)					
	record for each inspection required by 265.1085 that includes the inspection date & other information for defects detected	154	265.1090(b)(1)(ii)					
		154	265.1090(b)(1)(ii)(A)					
		154	265.1090(b)(1)(ii)(B)					
	owner/operator shall record the following information, as applicable to the tank:	154	265.1090(b)(2)					
	owner/operator using a fixed roof shall prepare & maintain records for each maximum organic vapor pressure determination in accordance with 265.1085(c); date & time of sample collection, analysis method, & results	154	265.1090(b)(2)(i)					
	owner/operator using internal floating roof shall prepare & maintain documentation describing design	154	265.1090(b)(2)(ii)					
	owners/operators using external	154	265.1090(b)(2)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
			(iii)					
	floating roof shall prepare & maintain documentation & records for specified items	154	265.1090(b)(2)(iii)(A)					
		154	265.1090(b)(2)(iii)(B)					
	each owner/operator using an enclosure shall prepare & maintain specified records	154	265.1090(b)(2)(iv)	7045.0645	IBR			
		154	265.1090(b)(2)(iv)(A)					
		154	265.1090(b)(2)(iv)(B)					
32	owner/operator of surface impoundment using air emission controls in accordance with 265.1086 shall prepare & maintain records that include:	154	265.1090(c)					
	surface impoundment ID number	154	265.1090(c)(1)					
	documentation describing floating membrane cover that includes description of cover design, & certification that cover meets specifications in 265.1086(c)	154	265.1090(c)(2)					
	record for each inspection required by 265.1086 that includes:	154	265.1090(c)(3)					
	date inspection was conducted	154	265.1090(c)(3)(i)					
	for each defect detected during inspection: location, description, date & corrective action; if repair is delayed, owner/operator shall record reason & date of expected repair	154	265.1090(c)(3)(ii)					
	for surface impoundment equipped with cover & vented through a closed-vent system to a control device, owner/operator shall prepare & maintain records	154	265.1090(c)(4)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	specified in 265.1090(e)							
32	owner/operator of containers using Container Level 3 air emission controls in accordance with 265.1087 shall prepare & maintain records that include following:	154	265.1090(d)					
	records for most recent calculations & measurements to verify enclosure meets criteria of permanent total enclosure as in "Procedure T", 40 CFR 52.741, appendix B	154	265.1090(d)(1)	7045.0645	IBR			
	records required for closed-vent system & control device in accordance with 265.1090(e)	154	265.1090(d)(2)					
32	owner/operator using closed-vent system & control device in accordance with 265.1088 shall prepare & maintain records that include:	154	265.1090(e)					
	documentation that includes:	154	265.1090(e)(1)					
	certification signed & dated by owner/ operator stating control device is designed to operate at performance level when unit operating at capacity	154	265.1090(e)(1)(i)					
	specified design documentation if design analysis is used; include description of control device design in accordance with 265.1035(b)(4)(iii) & certification by owner/operator that control equipment meets applicable specifications	154	265.1090(e)(1)(ii)					
	performance test plan & all test results, if performance tests are used	154	265.1090(e)(1)(iii)					
	information as required by 265.1035(c)(1)-(2)	154	265.1090(e)(1)(iv)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	owner/operator shall record on semiannual basis, information specified in 265.1090(e)(1)(v)(A)-(B) for planned routine maintenance operations requiring control devices not to meet 265.1088(c)(1)(i)-(iii) requirements	154	265.1090(e)(1)(v)					
		154	265.1090(e)(1)(v)(A)					
		154	265.1090(e)(1)(v)(B)	7045.0645	IBR			
	owner/operator shall record information specified in 265.1090(e)(1)(vi)(A)-(C) for unexpected control device system malfunctions	154	265.1090(e)(1)(vi)					
		154	265.1090(e)(1)(vi)(A)					
		154	265.1090(e)(1)(vi)(B)					
		154	265.1090(e)(1)(vi)(C)					
	management records of carbon removed from carbon adsorption system conducted in accordance with 265.1088(c)(3)(ii)	154	265.1090(e)(1)(vii)					
32	owner/operator of a tank, surface impoundment, or container exempted from standards in accordance with 265.1083(c) shall prepare & maintain the following records:	154	265.1090(f)					
	if exempted under 265.1083(c)(1)-(2), owner/operator shall record information used for each waste determination in operating log; if waste sample results are used for determination, date, time, & location shall be recorded in accordance with 265.1084	154	265.1090(f)(1)					
	if exempted under 265.1083(c)(2)(vii) or (viii), owner/operator shall record ID number for incinerator, boiler, or industrial furnace in which hazardous waste is treated	154	265.1090(f)(2)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
32	owner/operator designating a cover as "unsafe to inspect & monitor" shall record in facility log: ID numbers, explanations, & inspection plans & schedules	154	265.1090(g)					
	owners/operators subject to 265, Subpart CC & to control device standards in 40 CFR Part 60, Subpart VV or 40 CFR 61, Subpart V may demonstrate compliance by documentation pursuant to those subparts to extent it duplicates that required by 265.1090	154.1 154	265.1090(h)	7045.0645	IBR			
xxxiii	in accordance with 265.1080(d), for tank or container not using air emissions controls specified in 265.1085-1088, owner/operator shall record & maintain the following:	154.3 154	265.1090(i)					
33	list of organic peroxide compounds manufactured at the facility that meet conditions in 265.1080(d)(1)	154.3 154	265.1090(i)(1)					
33	description of how hazardous waste containing organic peroxide compounds identified in 265.1090(i)(1) are managed; description shall include:	154.3 154	265.1090(i)(2)					
	for tanks, sufficient information provided to describe: facility tank ID number, purpose & placement of tank in the management train, & procedures used to ultimately dispose of hazardous waste	154.3 154	265.1090(i)(2)(i)					
	for containers, sufficient information provided to describe: facility container ID number for the container or group of containers, purpose & placement of container(s) in management train, & procedures used to ultimately dispose of hazardous	154.3 154	265.1090(i)(2)(ii)					

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	waste							
33	why managing hazardous waste containing organic peroxide compounds identified in 265.1090 (i)(1) would create undue safety hazard if specified air emission controls are installed & operated; include following information:	154.3 154	265.1090(i)(3)					
	for tanks, sufficient information to explain how required air emission controls would affect design features & facility operating procedures currently used, & why installation of safety devices will not address situations in which evacuation is necessary	154.3 154	265.1090(i)(3)(i)	7045.0645	IBR			
	for containers, sufficient information to explain how required air emission controls would affect design & handling procedures currently used, & why installation of safety devices under Subpart CC will not address situations in which evacuation is necessary	154.3 154	265.1090(i)(3)(ii)					
	ALTERNATIVE TANK EMISSIONS CONTROL REQUIREMENTS							
xxxiv	reserve	154.1 154	265.1091	7045.0645	IBR			
	APPENDIX VI							
	Compounds With Henry's Law Constant Less Than 0.1 Y/X	154	Part 265, Appendix VI	7045.0643, 1, E	IBR			
	PART 270 - EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROG							
	SUBPART A - GENERAL INFORMATION							
	EFFECT OF A PERMIT							
	remove "or" at end of paragraph	154.1	270.4(a)(2)	7001.0150, 3, P, (2)	X			
	replace period at end of paragraph	154.1	270.4(a)(3)	7001.0150, 3,	X			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
with "; or"			P, (3)				
add new paragraph: requirements promulgated under 265, Subparts AA, BB, or CC limiting air emissions	154.1	270.4(a)(4)	7001.0150, 3, P, (4)	X			
SUBPART B - PERMIT APPLICATION							
CONTENTS OF PART B: GENERAL REQUIREMENTS							
remove "and" before "264.1058"; add ", 264.1084, 264.1085, 264.1086 and 264.1088" at end	154.1 154	270.14(b)(5)	7001.0560, E	X			
SPECIFIC PART B INFORMATION REQUIREMENTS FOR CONTAINERS							
add new paragraph: information requirements on air emission control equipment as in 270.27	154.1	270.15(e)	7001.0570, G	X			
SPECIFIC PART B INFORMATION REQUIREMENTS FOR TANK SYSTEMS							
add new paragraph: information requirements on air emission control equipment as in 270.27	154.1	270.16(k)	7001.0580, K	X			
SPECIFIC PART B INFORMATION REQUIREMENTS FOR SURFACE IMPOUNDMENTS							
add new paragraph: information requirements on air emission control equipment as in 270.27	154.1	270.17(j)	7001.0590, N	X			
SPECIFIC PART B INFORMATION REQUIREMENTS FOR AIR EMISSION CONTROLS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS							
add section: except as in 264.1, owners/operators of tanks, surface impoundments, or containers that use air emission controls in accordance with requirements of 264, Subpart CC, shall provide additional information:	154.1 154	270.27(a)	7001.0635	X			
documentation for each floating roof cover installed on tank subject to 264.1084(d)(1) or (2) that includes information prepared by owner/operator or provided by cover manufacturer or vendor describing cover design, &	154.1 154.5 154	270.27(a)(1)	7001.0635, A	X			

	FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	certification that cover meets applicable design specifications of 264.1084(e)(1) or 264.1084(f)(1).							
28	ID of each container area subject to requirements of 264, Subpart CC & certification that requirements of 270, Subpart B are met	154.1 154	270.27(a)(2)	7001.0635, B	X			
	documentation for each enclosure used to control air pollutant emissions from tanks or containers in accordance with 264.1084(d)(5) or 264.1086(e)(1)(ii) that includes records for most recent set of calculations & measurements performed by owner/operator to verify that enclosure meets specifications of Procedure T under 40 CFR 52.741, appendix B	154.1 154.5 154	270.27(a)(3)	7001.0635, C	X			
	documentation for each floating membrane cover installed on surface impoundment in accordance with 264.1085(c) that includes information prepared by owner/operator or provided by cover manufacturer or vendor describing cover design, & certification that cover meets specifications of 264.1085(c)(1)	154.1 154	270.27(a)(4)	7001.0635, D	X			
	documentation for each closed-vent system & control device installed in accordance with 40 CFR 264.1087 that includes design & performance information as in 270.24(c) & (d) of this part	154.1 154	270.27(a)(5)	7001.0635, E	X			
	emissions monitoring plan for both Method 21 in 40 CFR part 60, appendix A & control device monitoring methods; information plan shall include	154.1 154	270.27(a)(6)	7001.0635, F	X			
	when owner/operator of facility	154.1	270.27(a)(7)	7001.0635, G	X			

FEDERAL REQUIREMENTS	RULE REFERENCE	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
subject to 265, Subpart CC cannot comply with 264, Subpart CC by date of permit issuance, schedule of implementation required under 40 CFR 265.1082 of this chapter	154						

---

i Rule 154.1 (December 6, 1994; 59 FR 62896) initially revised 262.34(a)(1)(i) and 262.34(a)(1)(ii) by adding Subparts AA, BB, and CC as internal references, and Rule 154.5 (February 9, 1996; 61 FR 4903) made technical corrections to 262.34(a)(1)(i). Rule 154 (November 25, 1996; 61 FR 59932) finally amended these paragraphs by reversing the changes made by Rules 154.1 and 154.5. See the July 1, 1994 CFR for the correct version of these paragraphs.

ii At 264.73(b)(6), there is a typographical error in Rule 154.1 (December 6, 1994; 59 FR 62896). The internal reference "264.1034(c) through 264.304(f)" should be "264.1034(c) through 264.1034(f)".

iii Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced text at 264.1033(m), (m)(1), (m)(2), and (m)(3). Rule 154.5 (February 9, 1996; 61 FR 4903) significantly revised this paragraph and added subparagraphs (m)(2)(i)-(ii) and (m)(3)(i)-(ii). Rule 154 (November 25, 1996; 61 FR 59932) subsequently redesignated 264.1033(m) as 264.1033(n). The November 25, 1996 rule then revised the newly redesignated text at 264.1033(n) and added subparagraphs (n)(1)(i)-(iii).

iv At 264.1080(a), there is a typographical error in Rule 154.1 (December 6, 1994; 59 FR 62896): "subparts" should be "subpart".

v This paragraph was introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). Although the paragraph was included in Rule 154 (November 25, 1996; 61 FR 59932), no changes were made to the text.

vi Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced 264.1082(c)(2)(iii). It was amended by Rule 154.5 (February 9, 1996; 61 FR 4903). Although 264.1082(c)(2)(iii) was included in Rule 154 (November 25, 1996; 61 FR 59932), no changes were made to the text.

vii Rule 154.1 (December 6, 1994; 59 FR 62896) introduced 264.1082(c)(2)(vi) and (vii) to the Federal code. Rule 154 (November 25, 1996; 61 FR 59932) subsequently redesignated 264.1082(c)(2)(vi) and (vii) as 264.1082(c)(2)(vii) and (viii) and added a new 264.1082(c)(2)(vi).

viii Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced paragraphs 264.1082(d) and (e) into the Federal code. Paragraph 264.1082(d) was subsequently amended by Rule 154.5 (February 9, 1996; 61 FR 4903). Rule 154 (November 25, 1996; 61 FR 59932) then removed the text at 264.1082(d). The November 25, 1996 rule revised 264.1082(e) and redesignated it as 264.1082(d).

ix Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced the text at 264.1082(d)(3)-(5) at 264.1082(e)(2)-(4). Rule 154 (November 25, 1996; 61 FR 59932) redesignated the text at 264.1082(e)(2)-(4) as (d)(3)-(5) and introduced new text at 264.1082(d)(2). The rule also removed the text originally introduced by Rule 154.1 (December 6, 1994; 59 FR 62896) at 264.1082(d) and redesignated 264.1082(e) as 264.1082(d).

x This subparagraph was introduced by Rule 154.1 (December 6, 1994; 59 FR 62896) and amended by Rule 154.5 (February 9, 1996; 61 FR 4903). Although this subparagraph was included in Rule 154 (November 25, 1996; 61 FR 59932), no changes were made to the text.

xi The introductory text of this paragraph was introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). Although this text was included in Rule 154, no changes were made to it.

xii Sections 264.1084, 264.1085, 264.1086, and 264.1088 were originally introduced by Rule 154.1 (December 6, 1994; 59 FR 62896) and amended by Rule 154.5 (February 9, 1996; 61 FR 4903). Rule 154 (November 25, 1996; 61 FR 59932) completely revised these sections. States should take care to adopt the version of sections 264.1084, 264.1085, 264.1086, and 264.1088 from Rule 154 (November 25, 1996) as reflected on this consolidated revision checklist.

xiii An error exists in the July 1, 1997 CFR in that the paragraph is missing "(1)" to designate the first paragraph of the section.

xiv Paragraphs 264.1087(b)(3) and 264.1087(c)(2) and their subparagraphs were originally introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). Rule 154 (November 25, 1996; 61 FR 59932) completely revised these paragraphs. States should take care to adopt the version of these paragraphs from Rule 154 as reflected on this consolidated revision checklist.

xv Note there is an error in 264.1087(c)(3)(ii). Rule 154.5 (February 9, 1996; 61 FR 4903) replaced "§ 264.1033(m)" with "§ 264.1033(n)". It is likely the reference to 264.1033(n) should be to 264.1033(m) because 264.1033(n) did not exist at the time.

xvi Paragraphs 264.1089(a) through (g) were originally introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). Rule 154.5 (February 9, 1996; 61 FR 4903) subsequently amended 264.1089(a)(1) and (e). Rule 154 (November 25, 1996; 61 FR 59932) completely revised the structure and text of these paragraphs. States should take care to adopt the version of paragraphs 264.1089(a) through (g) from Rule 154 (November 25, 1996) as reflected on this consolidated revision checklist.

xvii The language at 264.1089(i), (i)(1), (i)(2), and (i)(3) was introduced by Rule 154.3 (September 29, 1995; 60 FR 50426). Although these paragraphs were included in Rule 154 (November 25, 1996; 61 FR 59932), no changes were made to the text.

xviii An error exists in the July 1, 1997 CFR. The third sentence is a duplicate of the second sentence, except that it does not include the option designations "(1)" and "(2)" which were introduced by Rule 154.5. The sentence should have been replaced by the Rule 154.5 sentence and not left in the regulations.

xix Section 264.1091, Alternative Control Requirements for Tanks, was introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). It was subsequently removed and reserved by Rule 154 (November 25, 1996; 61 FR 59932).

xx Despite reference to 265.1091, that section has been removed and reserved by Rule 154 (November 25, 1996; 61 FR 59932).

xxi Note there is a typographical error in 265.1033(f)(2)(vi)(B) in Rule 154 (November 25, 1996; 61 FR 59932): "Celsius (oC) or ± 0.5 oC" should be "Celsius (^{o}C) or ± 0.5 ^{o}C".

xxii Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced text at 265.1033(l), (l)(1), (l)(2), and (l)(3). Rule 154.5 (February 9, 1996; 61 FR 4903) significantly revised the paragraph and added subparagraphs (l)(2)(i)-(ii) and (l)(3)(i)-(ii). Rule 154 (November 25, 1996; 61 FR 59932) subsequently redesignated 265.1033(l) as 265.1033(m). The November 25, 1996 rule then revised the newly redesignated text at 265.1033(m) and added subparagraphs (m)(1)(i)-(iii).

xxiii At 265.1080(a), there is a typographical error in Rule 154.1 (December 6, 1994; 59 FR 62896): "subparts" should be "subpart".

xxiv Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced 265.1083(c)(2)(iii). It was amended by Rule 154.5 (February 9, 1996; 61 FR 4903). Although it was included in Rule 154 (November 25, 1996; 61 FR 59932), no changes were made to the text.

xxv Rule 154.1 (December 6, 1994; 59 FR 62896) introduced 265.1083(c)(2)(vi) and (vii) into the Federal code. Rule 154 (November 25, 1996; 61 FR 59932) subsequently redesignated 265.1083(c)(2)(vi) and (vii) as 265.1083(c)(2)(vii) and (viii) and added a new 265.1083(c)(2)(vi).

xxvi Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced paragraphs 265.1083(d) and (e) into the Federal code. Paragraph 265.1083(d) was subsequently amended by Rule 154.5 (February 9, 1996; 61 FR 4903). Rule 154 (November 25, 1996; 61 FR 59932) then removed the text at 265.1083(d). The November 25, 1996 rule revised 265.1083(e) and redesignated it as 265.1083(d).

xxvii Rule 154.1 (December 6, 1994; 59 FR 62896) originally introduced the text at 265.1083(d)(3)-(5) at 265.1083(e)(2)-(4). Rule 154 (November 25, 1996; 61 FR 59932) redesignated the text at 265.1083(e)(2)-(4) as (d)(3)-(5) and introduced new text at 265.1083(d)(2). The rule also removed the text originally introduced by Rule 154.1 at 265.1083(d) and redesignated 265.1083(e) as 265.1083(d).

xxviii This subparagraph was introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). Although this subparagraph was included in Rule 154 (November 25, 1996; 61 FR 59932), no changes were made to the text.

xxix Sections 265.1085, 265.1086, 265.1087, and 265.1089 were originally introduced by Rule 154.1 (December 6, 1994; 59 FR 62896) and amended by Rule 154.5 (February 9, 1996; 61 FR 4903). Rule 154 (November 25, 1996; 61 FR 59932) completely revised these sections. States should take care to adopt the version of sections 265.1085, 265.1086, 265.1087, and 265.1089 from Rule 154 (November 25, 1996) as reflected on this consolidated revision checklist.

xxx Paragraphs 265.1088(b)(3) and 265.1088(c)(2) and their subparagraphs were originally introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). Rule 154 (November 25, 1996; 61 FR 59932) completely revised these paragraphs. States should take care to adopt the version of these paragraphs from Rule 154 as reflected on this consolidated revision checklist.

xxxi Note there is an error in 265.1088(c)(3)(ii). Rule 154.5 (February 9, 1996; 61 FR 4903) replaced "§ 265.1033(l)" with "§ 265.1033(m)". It is likely the reference to 265.1033(m) should be to 265.1033(l) because 265.1033(m) did not exist at the time.

xxxii Paragraphs 265.1090(a) through (g) were originally introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). Rule 154.5 (February 9, 1996; 61 FR 4903) subsequently amended 265.1090(a)(1) and (e). Rule 154 (November 25, 1996; 61 FR 59932) completely revised the structure and text of these paragraphs. States should take care to adopt the version of paragraphs 265.1090(a) through (g) from Rule 154 (November 25, 1996) as reflected on this consolidated revision checklist.

xxxiii The language at 265.1090(i), (i)(1), (i)(2), and (i)(3) was introduced by Rule 154.3 (September 29, 1995; 60 FR 50426). Although these paragraphs were included in Rule 154 (November 25, 1996; 61 FR 59932), no changes were made to the text.

xxxiv Section 265.1091, Alternative Tank Emissions Control Requirements, was introduced by Rule 154.1 (December 6, 1994; 59 FR 62896). It was subsequently removed and reserved by Rule 154 (November 25, 1996; 61 FR 59932).

RCRA REVISION CHECKLIST 155

Land Disposal Restrictions Phase III--
Emergency Extension of the K088 Capacity Variance
62 FR 1992-1997
January 14, 1997
(RCRA Cluster VII, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS-- SPENT ALUMINUM POTLINERS; REACTIVE; AND CARBAMATE WASTE						
replace "January 8, 1997" with "July 8, 1997"; add "on July 8, 1997" to the last sentence after "disposal"	268.39(c)	7045.1390	IBR			

CL155.18 - Revised: 11/17/97
Printed: 9/13/07

RCRA REVISION CHECKLIST 157

Land Disposal Restrictions Phase IV--
Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions
62 FR 25998-26040
May 12, 1997
(RCRA Cluster VII, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 -- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART A -- GENERAL						
† PURPOSE AND SCOPE						
add new paragraph; definition "Excluded scrap metal"	261.1(c)(9)	7045.0020, 22b	X			
add new paragraph; definition "Processed scrap metal"	261.1(c)(10)	7045.0020, 72b	X			
add new paragraph; definition "Home scrap metal"	261.1(c)(11)	7045.0020, 37	X			
add new paragraph; definition "Prompt scrap metal"	261.1(c)(12)	7045.0020, 72c	X			
† DEFINITION OF SOLID WASTE						
revise table 1; add after entry for scrap metal "other than excluded scrap metal (see 261.1(c)(9))" also add "and 'processed scrap metal'" after "scrap metal" in Note.	261.2(c)/Table 1	See Minnesota Statutes, section 116.06, subdivision 11	X			
† EXCLUSIONS						
add paragraph; excluded scrap metal being recycled	261.6(a)(3)(ii) and 261.4(a)(13)	~~7045.0120, 2, E~~ 7045.0125, 4, C	X			Consolidate exempt recycle

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	add paragraph; shredded circuit boards being recycled provided that they are:	261.4(a)(14)	~~7045.0120, 2, F~~ 7045.0125, 4, P	X			
	add paragraph; stored in containers sufficient to prevent release, and	261.4(a)(14)(i)	~~7045.0120, 2, F~~ 7045.0125, 4, P, (1)	X			
	add paragraph; free of mercury switches, mercury relays and nickel cadmium batteries and lithium batteries	261.4(a)(14)(ii)	~~7045.0120, 2, F~~ 7045.0125, 4, P, (2)	X			
†	REQUIREMENTS FOR RECYCLABLE MATERIALS						
	scrap metal; add "that is not excluded under 261.4(a)(13)"	261.6(a)(3)(ii)	7045.0125, 4, C	X			
	PART 268 -- LAND DISPOSAL RESTRICTIONS						
	SUBPART A -- GENERAL						
†	PURPOSE, SCOPE AND APPLICABILITY						
	no change	268.1(e)intro - (e)(3)	7045.1390	Incorporated by reference (IBR)			
	revise paragraph; *de minimis* losses of characteristic wastes to wastewaters are not considered prohibited wastes and definition of "*de minimis* losses"	268.1(e)(4)					
	TREATMENT SURFACE IMPOUNDMENT EXEMPTION						
	completely revise subparagraph; sampling and testing and recordkeeping provisions of 264.13 and 265.13 of this chapter apply	268.4(a)(2)(iv)	7045.1390	IBR			
†	remove "and submits a	268.4(a)(4)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	copy of the waste analysis plan under §268.4(a)(2)"						
i	TESTING, TRACKING, AND RECORDKEEPING REQUIREMENTS FOR GENERATORS, TREATERS, AND DISPOSAL FACILITIES						
†	redesignate old 268.7(a)as 268.7(a)(1); requirements for generators	268.7(a)intro	7045.1390	IBR			
†	old 268.7(a) is new 268.7(a)(1); completely revise paragraph; generator of hazardous waste must determine if it has to be treated before it can be land disposed; this is done by determining if the waste meets treatment standards in 268.40 or 268.45; determination can be made in two ways: test the waste; or use knowledge of the waste; for testing, method 1311 is used and land treatment methods of 268.40 and 268.42 may apply; if characteristic waste, generators must comply with 268.9	268.7(a)(1)					
†	REMOVED	268.7(a)(1)(i)-(v)					
†	revise paragraph; if waste does not meet treatment standard, one-time notice with initial shipment of waste to each treatment or storage facility receiving waste; the generator must place a copy in the file; notice must include information in 268.7(a)(2) column of 268.7(a)(4) table; no further notice is necessary unless waste or facility change	268.7(a)(2)					
†	REMOVED	268.7(a)(2)(i)(A)-(D)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
†	REMOVED	268.7(a)(2)(ii)					
†	completely revise subparagraph; if waste meets treatment standard at original point of generation	268.7(a)(3)					
†	completely revise subparagraph; with initial shipment of waste, generator must send one-time written notice to each treatment/storage/ disposal facility receiving waste, and place a copy in the file; notice must include information in the 268.7(a)(3) column of 268.7(a)(4) table; certification statement	268.7(a)(3)(i)					
†	completely revise subparagraph; if waste changes, generator must send new notice and certification to receiving facility and place a copy in their files; generators of hazardous debris excluded from definition of hazardous waste under 261.3(f) are not subject to these requirements	268.7(a)(3)(ii)					
†	REMOVED	268.7(a)(3)(iii)-(vii)					
†	insert new 268.7(a)(4) and redesignate old 268.7(a)(4) as 268.7(a)(5); completely revise subparagraph; certain exemptions from the requirement that hazardous wastes meet treatment standards before land disposed include but are not limited to case-by-case extensions under	268.7(a)(4)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	268.5, disposal in a no-migration unit under 268.6 or national capacity variance or case by case capacity variance under subpart C; with initial shipment, generator must send one-time written notice to each land disposal facility for exempted waste; notice must include information in 268.7(a)(4) column of 268.7(a)(4) table; changed waste requires further notice						
†	add table	268.7(a)(4)/table					
†	old 268.7(a)(4) is new 268.7(a)(5); add "and treating" after "managing"; remove ", and is treating such waste in such tank, containers or containment buildings"; add "LDR" before "treatment standards"; replace "under subpart D of this part" with "found at 268.40"; replace "the generator" with "they" after "describes the procedures"	268.7(a)(5)					
†	redesignate old 268.7(a)(4)(i) as 268.7(a)(5)(i); replace "Part" with "part"	268.7(a)(5)(i)					
†	redesignate 268.7(a)(4)(ii) as 268.7(a)(5)(ii); completely revise subparagraph; plan must be kept on-site and made available to inspectors	268.7(a)(5)(ii)					
†	redesignate old 268.7(a)(4)(iii) as 268.7(a)(5)(iii); replace	268.7(a)(5)(iii)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	"268.7(a)(2)" with "268.7(a)(3)"						
†	redesignate old 268.7(a)(5) as 268.7(a)(6); replace "whether the" with "that the"; replace "described in Appendix I of this part" with wording referencing method 1311, SW-846 and 260.11	268.7(a)(6)					
†	redesignate old 268.7(a)(6) as 268.7(a)(7); insert parenthetic phrase addressing characteristic waste subject to CWA	268.7(a)(7)					
†	redesignate old 268.7(a)(7) as 268.7(a)(8); replace the two occurrences of "five years" with "three years"	268.7(a)(8)					
†★,ii	redesignate old 268.7(a)(8) as 268.7(a)(9); completely revise subparagraph and place certification in new 268.7(a)(9)(i); if generator is managing lab packs containing hazardous waste and wishes to use alternative treatment method in 268.42(c):	268.7(a)(9)					
†★,2	add new subparagraph; with initial shipment of waste, generator must submit notice with information in the 268.7(a)(9) column of the 268.7(a)(4) table; certification must be placed in files; replace old certification with new certification	268.7(a)(9)(i)					
†★,2	add new subparagraph; no further notification is	268.7(a)(9)(ii)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	necessary until wastes or receiving facility change in which case new notice and certification must be sent and copy placed in files						
†★,2	add new subparagraph; if lab pack contains characteristic hazardous wastes (D001-D043), underlying hazardous constituents need not be determined	268.7(a)(9)(iii)					
†★,2	add new subparagraph; generator must also comply with requirements in 268.7(a)(6) and (a)(7)	268.7(a)(9)(iv)					
	no change	268.7(a)(10)					
†	insert "40 CFR" before "264.13" and "265.13"; insert "(for permitted TSDs)" after "264.13"; insert "(for interim status facilities)" after "265.13"	268.7(b)					
†	revise subparagraph; for wastes with treatment standards expressed as concentrations in waste extract, owner or operator must test extract of treatment residues using test method 1311 to assure that treatment residues extract meet applicable treatment standards	268.7(b)(1)					
†	remove old 268.7(b)(2); redesignate old 268.7(b)(3) as 268.7(b)(2); remove "(268.43)"; replace "the treatment residues" with "they" after "to assure"	268.7(b)(2)					
†	redesignate old	268.7(b)(3)intro					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	268.7(b)(4) as 268.7(b)(3); completely revise paragraph; one-time notice must be sent with initial shipment of waste to land disposal facility; copy of notice must be placed in facility's file						
†	redesignate old 268.7(b)(4)(i)) as 268.7(b)(3)(i); completely revise subparagraph; no further notification is necessary until waste or receiving facility change in which case new notice must be sent and copy placed in facility's file	268.7(b)(3)(i)					
†	redesignate old 268.7(b)(4)(ii) as 268.7(b)(3)(ii); completely revise subparagraph; the one-time notice must include these requirements; remove old 268.7(b)(4)(iii) and (iv)	268.7(b)(3)(ii)					
†	add table	268.7(b)(3)(ii)/table					
iii †	redesignate old 268.7(b)(5) as 268.7(b)(4); completely revise subparagraph; treatment facility must submit a one-time certification signed by an authorized representative with initial shipment of waste or treatment residue of restricted waste to land disposal facility; certification	268.7(b)(4)					
3 †	redesignate old 268.7(b)(5)(i) as 268.7(b)(4)(i); completely	268.7(b)(4)(i)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	revise subparagraph; copy of the certification must be placed in treatment facility's on-site files; if waste or treatment residue changes, new notice must be sent and copy placed in files						
3 †	redesignate old 268.7(b)(5)(ii) as 268.7(b)(4)(ii); completely revise subparagraph; debris excluded from definition of hazardous waste in 261.3(e) is subject to notification and certification requirements of 268.7(d)	268.7(b)(4)(ii)					
3 †	redesignate old 268.7(b)(5)(iii) as 268.7(b)(4)(iii); completely revise subparagraph; for wastes with organic constituents having treatment standards expressed as concentration levels, if compliance with treatment standards is based in whole or in part on analytical detection limit alternative specified in 268.40(d), certification, signed by authorized representative; certification statement	268.7(b)(4)(iii)					
3 †	redesignate old 268.7(b)(6) as 268.7(b)(5); compliance with generator notice and certification requirements if waste sent offsite	268.7(b)(5)					
†	redesignate old 268.7(b)(7) as	268.7(b)(6)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	268.7(b)(6); notification for recyclable materials used in a manner constituting disposal and subject to 266.20(b); with each shipment 268.7(b)(5) certification and 268.7(b)(4) notice to Regional Administrator; records of recipients of waste-derived products						
†	delete ", and the certification specified in 268.8 if applicable."	268.7(c)(1)					
	replace "method described in Appendix I of this part or using any method required by generators under 268.32 of this part" with the wording referencing method 1311 SW-846 and 260.11	268.7(c)(2)					
	SPECIAL RULES REGARDING WASTES THAT EXHIBIT A CHARACTERISTIC						
	revise paragraph; initial generator of solid waste must determine each EPA Hazardous Waste Number in order to determine treatment standards under subpart D; for 268, waste will carry the waste code for any applicable listed waste; where waste exhibits characteristic, it will carry one or more of the characteristic waste codes, except when treatment standard operates in lieu of treatment standard for characteristic waste, as specified 268.9(b); if generator determines that waste displays hazardous characteristic, generator	268.9(a)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
must determine defined hazardous constituent except for certain D001 wastes						
replace "Hazardous Waste Number(s)" with "hazardous waste code(s)"; replace "in D001 and D002 wastes prohibited under §268.37 or D0012-D0043 wastes under §268.38" with a phrase and sentence renaming listing requirement if all underlying hazardous constituents will be treated and monitored	268.9(d)(1)(ii)					
SUBPART C -- PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS -- WOOD PRESERVING WASTES						
completely revise paragraph; effective August 11, 1997, the following wastes are prohibited from land disposal: F032, F034, F035	268.30(a)	7045.1390	IBR			
REMOVED	268.30(a)(1)-(4)					
completely revise paragraph; effective May 12, 1999, soil and debris contaminated with F032, F034, F035 and radioactive wastes mixed with F032, F034, F035 are prohibited from land disposal	268.30(b)					
completely revise paragraph; between May 12, 1997 and May 12, 1999, soil and debris contaminated with F032, F034, F035 and	268.30(c)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
radioactive waste mixed with F032, F034, F035 may be disposed in a landfill or surface impoundment only if 268.5(h)(2) requirements are met						
completely revise paragraph; requirements of 268.30 (a) and (b) do not apply if:	268.30(d)					
insert "applicable treatment" before "standards"; replace "of Subpart D" with "specified in Subpart D"; remove "or" at end of paragraph	268.30(d)(1)					
remove "or" at end of paragraph	268.30(d)(2)					
redesignate old 268.30(d)(3) as new 268.30(d)(4); add new 268.30(d)(3); the wastes meet the applicable alternate treatment standards established pursuant to a petition granted under 268.44	268.30(d)(3)					
old 268.30(d)(3) is new 268.30(d)(4); persons have been granted an extension to effective date of prohibition pursuant to 268.5 with respect to wastes covered by extension	268.30(d)(4)					
add new paragraph; to determine whether a hazardous waste identified in 268.40 exceeds applicable treatment standards, initial generator must test a sample of	268.30(e)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	waste extract or entire waste; if waste contains constituents in excess of applicable treatment levels of 268.48, waste is prohibited from land disposal and all requirements of 268 are applicable unless otherwise specified						
	REMOVED AND RESERVED	268.32 - 268.36					
	SUBPART D-- TREATMENT STANDARDS						
	APPLICABILITY OF TREATMENT STANDARDS						
	add entries for F032, F034 and F035; revise entries for D001 and F024 as per 62 FR 26023-26025	268.40/ Table of Treatment Standards for Hazardous Wastes	7045.1390	IBR			
†	TREATMENT STANDARDS EXPRESSED AS SPECIFIC TECHNOLOGIES						
	add entry for "POLYM" as per 62 FR 26025	268.42/ Table 1	7045.1390	IBR			
	VARIANCE FROM A TREATMENT STANDARD						
iv	revise paragraph; the following facilities are excluded from the treatment standards under 268.40 and are subject to the following constituent concentrations:	268.44(o)	7045.1390	IBR			
†	revise title of table to read "Table--Wastes Excluded from the Treatment Standards Under §268.40"	268.44(o)/ Table 1					
	APPENDIX I, II, III and X TO PART 268						
	REMOVED AND RESERVED	268 Appendices I, II, III and X	7045.1390	IBR			
	APPENDIX VI TO PART 268						
	RECOMMENDED TECHNOLOGIES TO ACHIEVE DEACTIVATION OF CHARACTERISTICS IN SECTION 268.42						

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
†	revise introduction to appendix; treatment standard for many characteristic wastes is stated in 268.40; characteristic wastes that are not managed in a facility must be treated not only by "deactivating" but also to achieve UTS for underlying constituents; the appendix presents a partial list that may help meet treatment standards; use of these treatment standards is not mandatory	268 Appendix VI	7045.1390	IBR			
	APPENDIX VII TO PART 268						
	LDR EFFECTIVE DATES OF SURFACE DISPOSED PROHIBITED HAZARDOUS WASTES						
†	revise tables 1 and 2 as shown in 62 FR 26025-26037	268 Appendix VII	7045.1390	IBR			
	APPENDIX VIII TO PART 268						
v	NATIONAL CAPACITY LDR VARIANCES FOR UIC WASTES						
†	revise table as shown in 62 FR 26037-26039	268 Appendix VIII	7045.1390	IBR			
	APPENDIX X TO PART 268						
	RECORDKEEPING, NOTIFICATION, AND/OR CERTIFICATION REQUIREMENTS						
†	removed and reserved	268 Appendix X	7045.1390	IBR			

† Optional.

†★ Conditionally optional. While the provisions indicated were optional when first added to the CFR, States which have chosen to adopt them must also adopt the subsequent revisions. The revisions, therefore, are considered conditionally optional.

[i] This section heading has been revised. The former heading read "Waste analysis and recordkeeping".

[ii] If a State has chosen to adopt the lab pack option (see Revision Checklist 78), then it must make the revisions specified in this checklist for this provision. If the lab pack option has not been adopted, these revisions are not required. As a reminder, the requirements for the lab pack options are 264.316(f), 265.316(f), 268.7(a)(9), 268.42(c), 268.42(c)(1-(4), Appendix IV and V to Part 268.

[iii] Subparagraphs 268.7(b)(5)-(b)(5)(v) were redesignated and revised by Revision Checklist 157 as 268.7(b)(4)-(b)(4)(iii).

[iv] Note that 268.44(o) was added to the Federal code by a March 25, 1991 rule at 56 FR 12351. The provision contains a variance from the treatment standards under 268.43(a) that only affects two facilities located in Chicago, Illinois. The March 25, 1991 rule also added and reserved paragraphs 268.44(m) and (n). Due to the limited applicability of this variance, no revision checklist was necessary for this rule. Revision Checklist 157 made changes to 268.44(o) and is included in this checklist for completeness. However, States would likely not want to include 268.44(m)-(o) in their code, unless the variance is extended to a facility in that particular State.

[v] Note that there is an error at 62 FR 26037. The title for Appendix VIII should be listed as "National Capacity LDR Variances for UIC Wastes" but is incorrectly listed in the Federal Register as "LDR Effective Dates of Surface Disposed Prohibited Hazardous Wastes".

RCRA REVISION CHECKLIST 159

Conformance With the Carbamate Vacatur
62 FR 32974-32980
June 17, 1997
(RCRA Cluster VII, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 -- IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART D - LISTS OF HAZARDOUS WASTES						
† HAZARDOUS WASTE FROM SPECIFIC SOURCES						
revise table by removing entry for K160 and revising entries for K156, K157 and K158 as shown below:	261.32/table	7045.0135, 1a, C	Incorporated by reference (IBR)			

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
* * * * * * * * * * * * *		
Organic chemicals:		
* * * * * * * * * * * * *		
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
* * * * * * * * * * * * *		

† DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUES, AND SPILL RESIDUES THEREOF

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
revise table by removing in their entirety the entries listed below**:**	261.33(f)	7045.0135, 1a, D	IBR			

H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester, (U365)
Bis(dimethylthiocarbamoyl) sulfide, (U401)
Bis (pentamethylene)thiuram tetrasulfide, (U400)
Butylate, (U392)
Carbamic acid, butyl-,3-iodo-2-propynyl ester, (U375)
Carbamodithioic acid, dibutyl, sodium salt, (U379)
Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester, (U277)
Carbamodithioic acid, diethyl-, sodium salt, (U381)
Carbamodithioic acid, dimethyl-, potassium salt, (U383)
Carbamodithioic acid, dimethyl-, sodium salt, (U382)
Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid, (U376)
Carbamodithioic acid, (hydroxymethyl) methyl-,monopotassium salt, (U378)
Carbamodithioic acid, methyl-, monosodium salt, (U384)
Carbamodithioic acid, methyl,-monopotassium salt, (U377)
Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester, (U392)
Carbamothioic acid, butylethyl-,S-propyl ester, (U391)
Carbamothioic acid, cyclohexylethyl-, S-ethyl ester, (U386)
Carbamothioic acid, dipropyl-, S-ethyl ester, (U390)
Carbamothioic acid, dipropyl-, S-propyl ester, (U385)
Copper, bis(dimethylcarbamodithioato-S,S')-, (U393)
Copper dimethyldithiocarbamate,(U393)
Cycloate, (U386)
Dazomet, (U366)
Disulfiram, (U403)
EPTC, (U390)
Ethyl Ziram, (U407)
Ferbam, (U396)
3-Iodo-2-propynyl n-butylcarbamate, (U375)
Iron, tris(dimethylcarbamodithioato-S,S')-, (U396)
Metam Sodium, (U384)
Molinate, (U365)
Pebulate, (U391)
Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-, (U400)
Potassium dimethyldithiocarbamate, (U383)
Potassium n-hydroxymethyl-n-methyldi-thiocarbamate, (U378)
Potassium n-methyldithiocarbamate, (U377)
Selenium, tetrakis(dimethyldithiocarbamate), (U376)
(continued....)

Sodium dibutyldithiocarbamate, (U379)
Sodium diethyldithiocarbamate, (U381)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Sodium dimethyldithiocarbamate, (U382) Sulfallate, (U277) Tetrabutylthiuram disulfide, (U402) Tetramethylthiuram monosulfide, (U401) 2H-1,3,5-Tthiadiazine-2-thione, tetrahydro-3,5-dimethyl-, (U366) Thioperoxydicarbonic diamide, tetrabutyl, (U402) Thioperoxydicarbonic diamide, tetraethyl, (U403) Vernolate, (U385) Zinc, bis(diethylcarbamodithioato-S,S')-, (U407)						
PART 261 -- APPENDIX VII						
† BASIS FOR LISTING HAZARDOUS WASTE						
remove entire entry for EPA hazardous waste number K160	261 Appendix VII	7045.0150, 1, D	IBR			
PART 261 -- APPENDIX VIII						
† HAZARDOUS CONSTITUENTS						
i remove entries "Potassium hydroxymethyl-n-methyl-dithiocarbamate" and "Tetrabutylthiuram monosulfide" and revise as shown in following table:	261 Appendix VIII	7045.0150, 1, E	IBR			

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * * * * * * * * * * *			
Bis(pentamethylene)-thiuram tetrasulfide.	Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-.	120-54-7	
* * * * * * * * * * * *			
Butylate	Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester.	2008-41-5	

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
*	* * * * * * * *		*	*	*	,
Copper dimethyldithiocarbamate	Copper, bis(dimethylcarbamodithioato-S,S')-,.		137-29-1			
*	* * * * * * * *		*	*	*	,
Cycloate	Carbamothioic acid, cyclohexylethyl-, S-ethyl ester		1134-23-2			
*	* * * * * * * *		*	*	*	,
Dazomet	2H-1,3,5-thiadiazine-2-thione, tetrahydro-3,5-dimethyl.		533-74-4			
*	* * * * * * * *		*	*	*	,

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
Disulfiram	Thioperoxydicarbonic diamide, tetraethyl.	97-77-8	
*	* * * * * * * *	*	* * ,
EPTC	Carbamothioic acid, dipropyl-, S-ethyl ester.	759-94-4	
*	* * * * * * * *	*	* * ,
Ethyl Ziram	Zinc, bis(diethylcarbamodithioato-S,S')-.	14324-55-1	
*	* * * * * * * *	*	* * ,
Ferbam	Iron, tris(dimethylcarbamodithioato-S,S')-,	14484-64-1	
*	* * * * * * * *	*	* * ,
3-Iodo-2-propynyl n-butylcarbamate	Carbamic acid, butyl-, 3-iodo-2-propynyl ester.	55406-53-6	
*	* * * * * * * *	*	* * ,
Metam Sodium	Carbamodithioic acid, methyl-, monosodium salt.	137-42-8	
*	* * * * * * * *	*	* * ,
Molinate	1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester.	2212-67-1	
*	* * * * * * * *	*	* * ,
Pebulate	Carbamothioic acid, butylethyl-, S-propyl ester.	1114-71-2	
*	* * * * * * * *	*	* * ,
Potassium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl, potassium salt.	128-03-0	
Potassium n-hydroxymethyl-n-methyl-dithiocarbamate	Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt.	51026-28-9	
Potassium n-methyldithiocarbamate	Carbamodithioic acid, methyl-monopotassium salt.	137-41-7	
*	* * * * * * * *	*	* * ,
Selenium, tetrakis (dimethyl-dithiocarbamate)	Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid ..	144-34-3	
*	* * * * * * * *	*	* * ,
Sodium dibutyldithiocarbamate.	Carbamodithioic acid, dibutyl, sodium salt.	136-30-1	
Sodium diethyldithiocarba	Carbamodithioic acid, diethyl-, sodium salt.	148-18-5	

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
mate ..						
Sodium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl-, sodium salt.		128-04-1			
* * * * * * * *			*	*	*	,
Sulfallate	Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester.		95-06-7			
* * * * * * * *			*	*	*	,
Tetrabutylthiuram disulfide	Thioperoxydicarbonic diamide, tetrabutyl		1634-02-2			
* * * * * * * *			*	*	*	,
Tetramethylthiuram monosulfide	Bis(dimethylthiocarbamoyl) sulfide		97-74-5			
* * * * * * * *			*	*	*	,
Vernolate	Carbamothioic acid, dipropyl-,S-propyl ester.		1929-77-7			
* * * * * * * *			*	*	*	,

PART 268 -- LAND DISPOSAL RESTRICTIONS

SUBPART C -- PROHIBITIONS ON LAND DISPOSAL

† WASTE SPECIFIC PROHIBITIONS -- SPENT ALUMINUM POTLINERS; REACTIVE; AND CARBAMATE WASTES

replace "K156-K161" with "K156-K159 and K161"; replace "U277-U280" with "U278-U280"; replace "U364-U367" with "U364, U367"; remove "U375-U379,"; replace "U381-U387, U389-U396" with "U387, U389, U394, U395"; replace "U400-	268.39(a)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
U404" with "U404"; remove "U407,"						
replace "U277-U280" with "U278-U280"; replace "U364-U367" with "U364, U367"; remove "U375-U379,"; replace "U381-U387, U389-U396" with "U387, U389, U394, U395"; replace "U400-U404" with "U404"; remove "U407,"	268.39(d)					
amend table by adding language "(This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)" at end of existing text in second	268.40 table					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
column for K156, K157 and K158						

[i] Note that there is a typographical error in the Federal Register. "Potassium hyroxymethyl-..." should be "Potassium hydroxymethyl-...". (62 FR 32977).

RCRA REVISION CHECKLIST 160

Land Disposal Restrictions Phase III -- Emergency Extension of the K088 National Capacity Variance, Amendment
62 FR 37694-37699
July 14,1997
(RCRA Cluster VIII, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS - SPENT ALUMINUM POTLINERS; REACTIVE; AND CARBAMATE WASTE						
[i] revise paragraph: replace "July 8" with "October 8"; replace "these wastes" with "this waste"; remove "on July 8, 1997" from last sentence	268.39(c)	7045.1390	Incorporated by reference (IBR)			

[i] According to the Office of Solid Waste in the EPA, the change of "these wastes" to "this waste" was unintentional. The final rule should only have changed the date in this paragraph. The previous wording was more consistent.

RCRA REVISION CHECKLIST 161

Emergency Revision of the Carbamate Land Disposal Restrictions
62 FR 45568
August 28, 1997
(RCRA Cluster VIII, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 -- LAND DISPOSAL RESTRICTIONS						
SUBPART D -- TREATMENT STANDARDS						
APPLICABILITY OF THE TREATMENT STANDARDS						
replace "Between August 26, 1996 and August 26, 1997" with "Between August 26, 1997 and August 26, 1998"	268.40(g)	7045.1390	Incorporated by reference (IBR)			
in footnote 6 to the table, replace "Between August 26, 1996 and August 26, 1997" with "Between August 26, 1997 and August 26, 1998"	268.48(a)/Table		IBR			

CL161 - Revised: 9/25/97
Printed: 9/13/07

RCRA REVISION CHECKLIST 162

Clarification of Standards for Hazardous Waste LDR Treatment Variances
62 FR 64504-64509
December 5, 1997
(RCRA Cluster VIII, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268						
SUBPART D - TREATMENT STANDARDS						
† VARIANCES FROM A TREATMENT STANDARD						
**********						
Guidance Note: 40 CFR 268.44(a)-(g) are not delegable because the variance addressed by these provisions could result in nationally-applicable standards for a new waste treatability group. States who have correctly adopted these provisions with the authority remaining with EPA are strongly encouraged to make the optional revisions to 40 CFR 268.44(a) addressed by this checklist.						
completely revise paragraph; based on petition, Administrator may approve a variance from applicable treatment standard if:	268.44(a) intro	7045.1390	Incorporated by reference (IBR)			
add new subparagraph; it is not physically possible to treat waste to level specified in or by method specified as the treatment standard; petitioner must demonstrate that physical/chemical properties of waste differ significantly from waste analyzed in developing treatment standard; or	268.44(a)(1)		IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
add new subparagraph; it is inappropriate to require waste to be treated to level specified or by method specified, even though such treatment is technically possible; petitioner must demonstrate that:	268.44(a)(2) intro	7045.1390	IBR			
add new subparagraph; treatment to specified level or by specified method is technically inappropriate; or	268.44(a)(2)(i)		IBR			
add new subparagraph; for remediation waste only, treatment is environmentally inappropriate because it would discourage aggressive remediation	268.44(a)(2)(ii)		IBR			
**********						
completely revise paragraph; based on petition, Administrator or delegated representative may approve a site-specific variance from an applicable treatment standard if:	268.44(h) intro		IBR			
add new subparagraph; it is not physically possible to treat waste to level specified in or by method specified as the treatment standard; petitioner must demonstrate that	268.44(h)(1)		IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
physical/chemical properties of waste differ significantly from waste analyzed in developing treatment standard; or						
add new subparagraph; it is inappropriate to require waste to be treated to level specified or by method specified, even though such treatment is technically possible; petitioner must demonstrate that:	268.44(h)(2) intro	7045.1390	IBR			
add new subparagraph; treatment to specified level or by specified method is technically inappropriate; or	268.44(h)(2)(i)		IBR			
add new subparagraph; for remediation waste only, treatment is environmentally inappropriate because it would discourage aggressive remediation	268.44(h)(2)(ii)		IBR			
add new subparagraph; public notice and opportunity for comment must be provided before granting or denying petition	268.44(h)(3)		IBR			
add paragraph; for all variances, petitioner must demonstrate that compliance with treatment variance is	268.44(m)		IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
sufficient to minimize threats to human health and environment; in evaluating demonstration, EPA may take into account whether a treatment variance should be approved if the waste is to be used in manner constituting disposal under 40 CFR 266.20 through 266.23						
remove	268.44(p)	7045.1390	IBR			

RCRA REVISION CHECKLIST 163

Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers;
Clarification and Technical Amendment
62 FR 64636-64671
December 8, 1997
(RCRA Cluster VIII, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL INSPECTION REQUIREMENTS						
replace “264.1088, and 264.1091(b)” with “and 264.1083 through 264.1089 of this part”	264.15(b)(4)	7045.0452, 5, C	X			
SUBPART E - MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING						
OPERATING RECORD						
replace “264.252 through 264.254" with “264.252-264.254"; replace “264.302 through 264.304" with “264.302-264.304"; replace “264.1034(c) through 264.304(f)” with “264.1034(c)-264.1034(f) ”; replace “264.1063(d) through 264.1063(i)” with “264.1063(d)-264.1063(i) ”; replace “264.1088, 264.1089, and 264.1091" with “and 264.1082 through 264.1090 of this part”	264.73(b)(6)	7045.0478, 3, H	X			
SUBPART AA - AIR EMISSION STANDARDS FOR PROCESS VENTS						
APPLICABILITY						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
revise paragraph; add quotation marks around “90-day”; insert “and is not a recycling unit under the provisions of 40 CFR 261.6" after “or container)”	264.1030(b)(3)	7045.0547	IBR			
completely revise paragraph; for owner and operator of facility subject to part 264 and who received final permit prior to December 6, 1996, requirements of part 264, subpart AA shall be incorporated into permit when reissued under 40 CFR 124.15 requirements or reviewed under 40 CFR 270.50(d); until owner and operator receive such final permit, owner and operator subject to 40 CFR part 265, subpart AA requirements	264.1030(c)	7045.0547	IBR			
add new paragraph; requirements of part 264, subpart AA do not apply to process vents at facility where owner or operator certifies that all process vents are equipped and operating air emission controls in accordance with process vent requirements under 40 CFR part 60, part 61, or part 63 ; documentation of compliance kept, or made available, with facility operating record	264.1030(e)	7045.0547	IBR			
DEFINITIONS						
revise “In light liquid service”; insert “organic”	264.1031	7045.0547	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
after “one or more of the” and after “pure”; replace “0.3 kPa” with “0.3 kilopascals (kPa)”						
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES						
redesignate paragraph (a)(2) as (a)(2)(i), except for last sentence	264.1033(a)(2)(i)	7045.0547	IBR			
revise and redesignate last sentence of (a)(2) as (a)(2)(ii); any unit that begins operation after December 21, 1990, and is subject to part 264, Subpart AA, must comply with rules immediately	264.1033(a)(2)(ii)	7045.0547	IBR			
add new paragraph; owner or operator of facility in existence on effective date of statutory or regulatory amendment that renders facility subject to part 264, subpart AA, shall comply with subpart AA requirements no later than 30 months after effective date of amendment; when control equipment cannot be installed and operational by effective date facility owner or operator shall prepare implementation schedule; enter implementation schedule in operating record or permanent file at facility	264.1033(a)(2)(iii)	7045.0547	IBR			
add new paragraph; owners and operators of facilities and units newly subject to part 264, subpart AA after December 8, 1997, due to action other	264.1033(a)(2)(iv)	7045.0547	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
than under 264.1033(a)(2)(iii), must comply with requirements immediately						
SUBPART BB - AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS						
APPLICABILITY						
revise paragraph; add “and is not a recycling unit under the provisions of 40 CFR 261.6" at end	264.1050(b)(3)	7045.0548	IBR			
completely revise paragraph; for owner and operator of facility newly subject to part 264, subpart BB, and who received final permit prior to December 6, 1996, requirements of part 264, subpart BB shall be incorporated into permit when reissued under 40 CFR 124.15 requirements or reviewed under 40 CFR 270.50(d); until owner and operator receives such final permit, owner and operator subject to 40 CFR 265, subpart BB requirements	264.1050(c)	7045.0548	IBR			
remove “a period of”; insert comma after “identified”	264.1050(f)	7045.0548	IBR			
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES						
redesignate 264.1060 as 264.1060(a); insert “subject to this subpart” following “control devices” and insert “of this part” at end of paragraph	264.1060(a)	7045.0548	IBR			
add new paragraph; owner or operator who cannot	264.1060(b)(1)	7045.0548	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
install closed-vent system and control device to comply with part 264, subpart BB, by the effective date must prepare implementation schedule including dates by which closed-vent system and control device will be installed and in operation; implementation schedule may allow up to 30 months after effective date for installation and startup						
add new paragraph; any unit that begins operation after December 21, 1990, and is subject to part 264, Subpart BB, must comply with rules immediately	264.1060(b)(2)	7045.0548	IBR			
add new paragraph; owner or operator of facility in existence on effective date of statutory or regulatory amendment that renders facility subject to part 264, subpart BB, shall comply with subpart BB requirements no later than 30 months after effective date of amendment; when control equipment cannot be installed and operational by effective date facility owner or operator shall prepare implementation schedule; enter implementation schedule in operating record or permanent file at facility	264.1060(b)(3)	7045.0548	IBR			
add new paragraph; owners and operators of facilities and units newly subject to part 264, subpart	264.1060(b)(4)	7045.0548	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
BB, after December 8, 1997, due to action other than under 264.1060(b)(3), must comply with requirements immediately						
ALTERNATIVE STANDARDS FOR VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE: SKIP PERIOD LEAK DETECTION AND REPAIR						
insert “(i.e., monitor for leaks once every six months)” before “for the valves”; insert “of this subpart” at end	264.1062(b)(2)	7045.0548	IBR			
insert “(i.e., monitor for leaks once every year)” before “for the valves”; insert “of this subpart” at end	264.1062(b)(3)	7045.0548	IBR			
RECORDKEEPING REQUIREMENTS						
delete “a period of”; insert “calendar” following “per”	264.1064(g)(6)	7045.0548	IBR			
revise paragraph; owner or operator of facility with equipment subject to part 264, subpart BB, and to 40 CFR part 60, part 61, or part 63 may determine compliance with subpart BB by documentation under 264.1064 or by documentation of compliance with 40 CFR part 60, part 61, or part 63; documentation of compliance under 40 CFR part 60, part 61, or part 63 shall be kept or made available with the operating record	264.1064(m)	7045.0548	IBR			
SUBPART CC - AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
APPLICABILITY						
replace “October 6, 1996" and “this date” with “December 6, 1996"	264.1080(b)(1)	7045.0549	IBR			
replace “subpart and who” with “subpart who”; replace “October 6, 1996" with “December 6, 1996"; replace “the owner and operator receives a final permit incorporating the requirements of this subpart” with “the permit is reissued in accordance with the requirements of 40 CFR 124.15 or reviewed in accordance with the requirements of 40 CFR 270.50(d)”	264.1080(c)	7045.0549	IBR			
STANDARDS: GENERAL						
insert “hazardous” before both occurrences of “waste management unit”; replace “§264.1084 through §264.1087" with “§§264.1084 through 264.1087"	264.1082(b)	7045.0549	IBR			
add “at section 4.4 of Method 25D in 40 CFR part 60, appendix A, or a value of 25 ppmw, whichever is less” at end of paragraph	264.1082(c)(2)(ix)(A)	7045.0549	IBR			
completely revise paragraph; if other analytical method used, one-half sum of limits of detection established for each organic constituent in waste that has Henry’s law constant value at least 0.1 Y/X at 25 degrees Celsius	264.1082(c)(2)(ix)(B)	7045.0549	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
insert “or surface impoundment” following “tank”	264.1082(c)(3)	7045.0549	IBR			
replace “Has” with “The organic hazardous constituents in the waste have”; add “the” before “EPA”; replace “or treated” with “or have been removed or destroyed”	264.1082(c)(4)(ii)	7045.0549	IBR			
WASTE DETERMINATION PROCEDURES						
insert “For a waste determination that is required by paragraph (a)(1) of this section,” at beginning of paragraph; replace “may” with “shall”	264.1083(a)(2)	7045.0549	IBR			
replace “a waste management unit” with “waste management units”; replace “264.1082(c)(2)” with “264.1082(c)(2)(i) through 264.1082(c)(2)(vi)”; replace “§ 264.1084 through § 264.1087" with “§§ 264.1084 through 264.1087"	264.1083(b)(1)	7045.0549	IBR			
STANDARDS: TANKS						
insert “, and any manifold system associated with the fixed roof,” before “shall be”	264.1084(c)(2)(iii)	7045.0549	IBR			
delete “it” before “shall be”; insert “, except as provided for in paragraphs (c)(2)(iii)(B)(*1*) and (*2*) of this section” at end of paragraph	264.1084(c)(2)(iii)(B)	7045.0549	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
add new paragraph; when necessary to provide access to tank for performing activities of 264.1084(c)(2)(iii)(B)(*2*), venting of vapor headspace underneath fixed roof to control device is not required, opening of closure devices is allowed, and removal of fixed roof is allowed; following completion of activity, owner or operator shall secure closure device in closed position or reinstall cover and resume operation of control device	264.1084(c)(2)(iii)(B)(*1*)	7045.0549	IBR			
add new paragraph; during routine inspection, maintenance, or other activities needed for normal operations, and for removal of sludge or other residues from tank bottom	264.1084(c)(2)(iii)(B)(*2*)	7045.0549	IBR			
add new paragraph; safety devices, as defined in 40 CFR 265.1081, may be installed and operated as necessary on tank complying with 264.1084(e) requirements	264.1084(e)(4)	7045.0549	IBR			
replace “perimeter” with “diameter”	264.1084(f)(3)(i)(D)(*4*)	7045.0549	IBR			
replace “this subpart” with “this section”	264.1084(f)(3)(iii)	7045.0549	IBR			
add new paragraph; safety devices, as defined in 40 CFR 265.1081, may be installed and operated on tank complying with 264.1084(f)	264.1084(f)(4)	7045.0549	IBR			
add new paragraph;	264.1084(j)(2)(iii)	7045.0549	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
hazardous waste meets requirements of 264.1082(c)(4)						
STANDARDS: SURFACE IMPOUNDMENTS						
replace “sections” with “section”	264.1085(b)(2)	7045.0549	IBR			
replace “for and designing” with “of construction and designing”	264.1085(d)(1)(iii)	7045.0549	IBR			
insert “the” before “surface impoundment”	264.1085(d)(2)(i)(B)	7045.0549	IBR			
add new paragraph; hazardous waste meets requirements of 264.1082(c)(4)	264.1085(e)(2)(iii)	7045.0549	IBR			
STANDARDS: CONTAINERS						
replace “it” with “the container”; insert comma after “integrity”; replace comma after “permeability” with “;”	264.1086(c)(2)	7045.0549	IBR			
revise paragraph and add requirements; container visual inspection shall be conducted on or before date that container is accepted at facility; date of acceptance	264.1086(c)(4)(i)	7045.0549	IBR			
replace “a submerged-fill” with “A submerged-fill”	264.1086(d)(2)	7045.0549	IBR			
revise paragraph and add requirements; container visual inspection shall be conducted on or before date that container accepted at facility; date of acceptance	264.1086(d)(4)(i)	7045.0549	IBR			
completely revise	264.1086(g)	7045.0549	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
paragraph; to determine compliance with 264.1086(d)(1)(ii), use procedure specified in 264.1083(d)						
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES						
add "that is a hazardous waste and that" after "All carbon"; add ", regardless of the average volatile organic concentration of the carbon" at end of paragraph	264.1087(c)(3)(ii)	7045.0549	IBR			
insert "closed-vent system and" before the first occurrence of "control device"	264.1087(c)(7)	7045.0549	IBR			
RECORDKEEPING REQUIREMENTS						
replace "(b) through (i)" with "(b) through (j)"; replace both occurrences of "paragraph (i)" with "paragraphs (i) and (j)"; replace "tank or container" with "waste management unit"; replace "§264.1084(d) of this subpart" with "§264.1080(d) or §264.1080(b)(7) of this subpart, respectively"	264.1089(a)	7045.0549	IBR			
delete ", the following information"; replace "provisions" with "requirements"	264.1089(b)(1)(ii)(B)	7045.0549	IBR			
replace "or containers" with "and containers"; replace "(c)(2)" with "§§ 264.1082(c)(2)(i) through (c)(2)(vi)"	264.1089(f)(1)	7045.0549	IBR			
add new paragraph; for	264.1089(j)	7045.0549	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
each hazardous waste management unit not using air emission controls under 264.1084 through 264.1087 in accordance with 264.1080(b)(7), owner and operator shall record and maintain the following:						
add new paragraph; certification that waste management unit equipped with and operating air emission controls in accordance with 40 CFR part 60, part 61, or part 63	264.1089(j)(1)	7045.0549	IBR			
add new paragraph; identification of specific requirements under 40 CFR part 60, part 61, or part 63 with which waste management unit is in compliance	264.1089(j)(2)	7045.0549	IBR			
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART B - GENERAL FACILITY STANDARDS						
GENERAL INSPECTION REQUIREMENTS						
replace “it” with “the frequency; replace “265.1089, and 265.1091b” with “and 265.1084 through 265.1090 of this part,”	265.15(b)(4)	7045.0556, 4, C	X			
SUBPART E - MANIFEST SYSTEM, RECORDKEEPING, AND REPORTING						
OPERATING RECORD						
replace “when required” with “, and corrective action where required by subpart F of this part and”; replace “265.1089, 265.1090, and 265.1091"	265.73(b)(6)	7045.0584, 3, H	X			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	with “and 265.1083 through 265.1090 of this part”						
	SUBPART AA - AIR EMISSION STANDARDS FOR PROCESS VENTS						
	APPLICABILITY						
	add quotation marks around “90-day”;add “and is not a recycling unit under the requirements of 40 CFR 261.6" at end of paragraph	265.1030(b)(3)	7045.0647	IBR			
i	add new paragraph; requirements of part 265, subpart AA, do not apply to process vents at facility where owner or operator certifies that all process vents are equipped with and operating air emission controls in accordance with 40 CFR part 60, part 61, or part 63; documentation of compliance with 40 CFR part 60, part 61, or part 63 shall be kept or made available with facility operating record	265.1030(d)	7045.0647	IBR			
	STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES						
	add new paragraph; owner or operator of existing facility who cannot install closed-vent system and control device to comply with part 265, subpart AA by effective date must prepare implementation schedule that includes expected dates of installation and operation; implementation schedule may allow up to 30 months for installation and startup	265.1033(a)(2)(i)	7045.0647	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
add new paragraph; unit that begins operation after December 21, 1990, and subject to requirements of part 265, subpart AA when operation begins must comply with rules immediately	265.1033(a)(2)(ii)	7045.0647	IBR			
add new paragraph; owner or operator of facility in existence on effective date of statutory or EPA regulatory amendment that renders facility subject to part 265, subpart AA shall comply with requirements of part 265, subpart AA no later than 30 months after amendment's effective date; when control equipment cannot be installed and operational by effective date facility owner or operator shall prepare implementation schedule; enter implementation schedule in operating record or permanent file at facility	265.1033(a)(2)(iii)	7045.0647	IBR			
add new paragraph; owners and operators of facilities and units newly subject to part 265, subpart AA after December 8, 1997, due to action other than under 265.1033(a)(2)(iii), must comply with requirements immediately	265.1033(a)(2)(iv)	7045.0647	IBR			
replace both occurrences of "oC" with "°C"	265.1033(f)(2)(vi)(B)	7045.0647	IBR			
SUBPART BB - AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS						
APPLICABILITY						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
add quotation marks around “90-day”; add “and is not a recycling unit under the provisions of 40 CFR 261.6" at end of paragraph	265.1050(b)(3)	7045.0648	IBR			
remove “a period of”; replace “§ 265.1052 through § 265.1060" with “§§ 265.1052 through 265.1060"; insert comma between “identified” and “as required”	265.1050(e)	7045.0648	IBR			
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES						
redesignate 265.1060 as 265.1060(a); add “subject to this subpart” after “devices”; add “of this part” at end	265.1060(a)	7045.0648	IBR			
add new paragraph; owner or operator who cannot install closed-vent system and control device to comply with part 265, subpart BB by effective date must prepare implementation schedule including dates by which closed-vent system and control device will be installed and in operation; implementation schedule may allow up to 30 months after effective date for installation and startup	265.1060(b)(1)	7045.0648	IBR			
add new paragraph; any units that begin operation after December 21, 1990, and are subject to part 265, Subpart BB, must comply with rules immediately	265.1060(b)(2)	7045.0648	IBR			
add new paragraph; owner	265.1060(b)(3)	7045.0648	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
or operator of facility in existence on effective date of statutory or regulatory amendment that renders facility subject to part 265, subpart BB shall comply with subpart BB, requirements no later than 30 months after effective date of amendment; facility owner or operator shall prepare implementation schedule; enter implementation schedule in operating record or permanent file at facility						
add new paragraph; owners and operators of facilities and units newly subject to part 265, subpart BB, after December 8, 1997, due to action other than under 265.1060(b)(3), must comply with requirements immediately	265.1060(b)(4)	7045.0648	IBR			
ALTERNATIVE STANDARDS FOR VALVES IN GAS/VAPOR SERVICE OR IN LIGHT LIQUID SERVICE: SKIP PERIOD LEAK DETECTION AND REPAIR						
add “(i.e., monitor for leaks once every six months)” after “periods”; add “of this subpart” at end of paragraph	265.1062(b)(2)	7045.0648	IBR			
add “(i.e., monitor for leaks once every year)” after second occurrence of “periods”; add “of this subpart” at end of paragraph	265.1062(b)(3)	7045.0648	IBR			
RECORDKEEPING REQUIREMENTS						
delete “a period of”	265.1064(g)(6)	7045.0648	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
revise paragraph; owner or operator of facility with equipment subject to part 265, subpart BB, and to leak detection, monitoring, and repair requirements of 40 CFR part 60, part 61, or part 63 may elect to determine compliance with subpart BB by documentation under 265.1064 or by documentation of compliance with 40 CFR part 60, part 61, or part 63; documentation of compliance under 40 CFR part 60, part 61, or part 63 shall be kept or made available with the operating record	265.1064(m)	7045.0648	IBR			
SUBPART CC - AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS						
APPLICABILITY						
replace both “October 6, 1996" and “this date” with “December 6, 1996"	265.1080(b)(1)	7045.0649	IBR			
replace “October 6, 1996" with “December 6, 1996"	265.1080(c)	7045.0649	IBR			
DEFINITIONS						
revise “In light material service”; replace “the vapor” with “The vapor”	265.1081	7045.0649	IBR			
SCHEDULE FOR IMPLEMENTATION OF AIR EMISSION STANDARDS						
replace “October 6, 1996" with “December 6, 1996"	265.1082(a)	7045.0649	IBR			
replace “required by” with “or waste management units required to comply with this subpart and complete modifications of	265.1082(a)(1)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
production or treatment processes to satisfy exemption criteria in accordance with § 265.1083(c) of"; replace "October 6, 1996" with "December 6, 1996"						
revise paragraph; when control equipment or waste management units required to comply with part 265, subpart CC cannot be installed and in operation or modifications of production or treatment processes to satisfy exemption criteria under § 265.1083(c) cannot be completed by December 6, 1996, owner or operator shall:	265.1082(a)(2)	7045.0649	IBR			
add "and waste management units, and complete modifications of production or treatment processes" after "equipment"	265.1082(a)(2)(i)	7045.0649	IBR			
replace "orders for the control equipment," with "orders for control equipment, waste management units, and production or treatment process modifications;"; add "or waste management units, and modifications of production or treatment processes;" before "completion"; replace "control equipment installation," with "control equipment or waste management unit installation, and production or treatment	265.1082(a)(2)(ii)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
process modifications;" delete "any"; replace "meets" with "or waste management units, and modified production or treatment processes meet"						
replace "October 6, 1996" with "December 6, 1996"	265.1082(a)(2)(iii)	7045.0649	IBR			
replace "October 6, 1996" with "December 6, 1996"	265.1082(a)(2)(iv)	7045.0649	IBR			
add "and units" after "facilities"; replace "statutory or regulatory amendments under the Act that render" with "a statutory or EPA regulatory amendment that renders"	265.1082(b)	7045.0649	IBR			
replace "all control equipment required by" with "control equipment or waste management units required to comply with this subpart, and complete modifications of production or treatment processes to satisfy exemption criteria of § 265.1083(c) of"	265.1082(b)(1)	7045.0649	IBR			
insert "or waste management units required to comply with" after "control equipment"; insert ", or when modifications of production or treatment processes to satisfy exemption criteria of § 265.1083(c) of this subpart cannot be completed" after "operation"	265.1082(b)(2)	7045.0649	IBR			
replace "operate" with	265.1082(b)(2)(i)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
"begin operation of"; insert "or waste management unit, and complete modification of production or treatment processes" after "control equipment"						
insert "of this part" after "§ 265.73"	265.1082(b)(2)(ii)	7045.0649	IBR			
insert "of this part" after "§ 265.73"	265.1082(b)(2)(iii)	7045.0649	IBR			
redesignate 265.1082(c) as 265.1082(d) and add new 265.1082(c); owners and operators of facilities and units that become newly subject to the part 265, subpart CC, requirements after December 8, 1997 due to action other than those in 265.1082(b) must comply with requirements immediately	265.1082(c)	7045.0649	IBR			
insert comma between "control equipment" and "and"	265.1082(d)	7045.0649	IBR			
STANDARDS: GENERAL						
replace both occurrences of "waste management unit" with "hazardous waste management unit"; replace "§265.1085 through §265.1088" with "§§ 265.1085 through 265.1088"	265.1083(b)	7045.0649	IBR			
replace "C^t" with "C_t"	265.1083(c)(2)(i)	7045.0649	IBR			
add "at section 4.4 of Method 25D in 40 CFR part 60, appendix A, or a value of 25 ppmw, whichever is less" at end	265.1083(c)(2)(ix)(A)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
of paragraph						
completely revise paragraph; if other analytical method used, one-half sum of limits of detection established for each organic constituent in waste that has Henry's law constant value at least 0.1 Y/X at 25 degrees Celsius	265.1083(c)(2)(ix)(B)	7045.0649	IBR			
add "or surface impoundment" after "tank"	265.1083(c)(3)	7045.0649	IBR			
replace "Has" with "The organic hazardous constituents in the waste have"; replace "EPA" with "the EPA"; replace "or treated" with "or have been removed or destroyed"	265.1083(c)(4)(ii)	7045.0649	IBR			
WASTE DETERMINATION PROCEDURES						
replace "The" with "For a waste determination that is required by paragraph (a)(1) of this section, the"at beginning of paragraph	265.1084(a)(2)	7045.0649	IBR			
replace "for the hazardous waste stream" with "and analyzed for a hazardous waste determination. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required"	265.1084(a)(3)(ii)(B)	7045.0649	IBR			
replace "8260(B) or 8270(C)" with "8260 or 8270"	265.1084(a)(3)(iii)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
no change	265.1084(a)(3)(iii)(A)	7045.0649	IBR			
replace both occurrences of “8260(B)” with “8260"	265.1084(a)(3)(iii)(F)	7045.0649	IBR			
replace both occurrences of “8270(C)” with “8270"	265.1084(a)(3)(iii)(G)	7045.0649	IBR			
insert “, introduction, and analysis” after “preparation”	265.1084(a)(3)(iii)(G)(*1*)	7045.0649	IBR			
redesignate all except title as 265.1084(a)(3)(iv)(A)	265.1084(a)(3)(iv)	7045.0649	IBR			
revise redesignated paragraph; replace “samples analyzed” with “waste determinations conducted”; replace “paragraph (a)(3)(iii)” with “paragraphs (a)(3)(ii) and (iii)”; replace all “sample” with “waste determination”; at “n =”, replace “collected (at least 4)” with “conducted”; at “C_i =”, replace “§ 265.1084(a)(3)(ii) of this subpart” with “paragraph (a)(3)(iii) of this section (i.e., the average of the four or more samples specified in paragraph (a)(3)(ii)(B) of this section)”	265.1084(a)(3)(iv)(A)	7045.0649	IBR			
add new paragraph; for purpose of determining C_i, for individual waste samples analyzed in accordance with 265.1084(a)(3)(iii), owner or operator shall account for VO concentrations determined to be below limit of detection of analytical method by using following VO	265.1084(a)(3)(iv)(B)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
concentration:						
add new paragraph; if Method 25D in 40 CFR part 60, appendix A is used for analysis, one-half blank value determined in method at section 4.4 of Method 25D	265.1084(a)(3)(iv)(B)(*1*)	7045.0649	IBR			
add new paragraph; if other analytical method used, one-half sum of limits of detection established for each organic constituent in waste that has Henry's law constant values at least 0.1 Y/X at 25 degrees Celsius	265.1084(a)(3)(iv)(B)(*2*)	7045.0649	IBR			
add new paragraph; provided that test method is appropriate for waste as required under 265.1084(a)(3)(iii), EPA will determine compliance based on test method used by owner or operator as recorded pursuant to § 265.1090(f)(1)	265.1084(a)(3)(v)	7045.0649	IBR			
add "The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of paragraph (a)(3)(iii) of this section" at end of paragraph	265.1084(a)(4)(iv)	7045.0649	IBR			
replace "265.1083(c)(2)" with "265.1083(c)(2)(i) through (c)(2)(vi)"; replace "§ 265.1085 through § 265.1088" with "§§ 265.1085 through 265.1088"	265.1084(b)(1)	7045.0649	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	replace “for the hazardous waste stream” with “and analyzed for a hazardous waste determination. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required”; insert “waste” before “compositions”; replace “process treating” with “source or process generating”	265.1084(b)(3)(ii)(B)	7045.0649	IBR			
ii	insert new second sentence; when owner or operator is making hazardous waste determination for treated hazardous waste to be compared to average VO concentration at point of waste origination or entry to treatment system, to determine if conditions of 264.1082(c)(2)(i) through (c)(2)(vi) or 265.1083(c)(2)(i) through (c)(2)(vi) are met, then waste samples shall be prepared and analyzed using same method(s) as used in making initial waste determinations at point of waste origination or at point of entry; remove “EPA” before “Method 624"; replace “8260(B) or 8270(C)” with “8260 or 8270"	265.1084(b)(3)(iii)	7045.0649	IBR			
	replace both occurrences of “8260(B)” with “8260"	265.1084(b)(3)(iii)(F)	7045.0649	IBR			
	replace both occurrences of “8270(C)” with “8270"	265.1084(b)(3)(iii)(G)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
revise paragraph; replace "samples analyzed" with "waste determinations conducted"; replace "paragraph (b)(3)(iii)" with "paragraphs (b)(3)(ii) and (iii)"; replace all "sample" with "waste determination"; at "n =", replace "collected (at least 4)" with "conducted"; at "C_i =", replace "§ 265.1084(b)(3)(iii) of this subpart" with "paragraph (b)(3)(iii) of this section (i.e., the average of the four or more samples specified in paragraph (b)(3)(ii)(B) of this section)"	265.1084(b)(3)(iv)	7045.0649	IBR			
add new paragraph; provided that test method is appropriate for waste as required under 265.1084(b)(3)(iii), determine compliance based on test method used by owner or operator as recorded pursuant to § 265.1090(f)(1)	265.1084(b)(3)(v)	7045.0649	IBR			
revised by placing "MR = E_b - E_a" before "Where:"	265.1084(b)(8)(iii)	7045.0649	IBR			
revised by moving "respectively" to follow "of this section" and by placing "$MR_{bio} = E_b \times F_{bio}$" before "Where:"	265.1084(b)(9)(iv)	7045.0649	IBR			
replace "in air" with "or n-hexane and air"; add "methane or n-hexane" at end of paragraph	265.1084(d)(5)(ii)	7045.0649	IBR			
STANDARDS: TANKS						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
insert ", and any manifold system associated with the fixed roof," following "fixed roof"	265.1085(c)(2)(iii)	7045.0649	IBR			
replace "and it shall" with "and shall"; insert ", except as provided for in paragraphs (c)(2)(iii)(B)(*1*) and (*2*) of this section" at end of paragraph	265.1085(c)(2)(iii)(B)	7045.0649	IBR			
add new paragraph; during periods necessary to provide access to tank for performing activities of 265.1085(c)(2)(iii)(B)(*2*), venting of vapor headspace underneath fixed roof to control device not required, opening of closure devices is allowed, and removal of fixed roof is allowed; following completion of activity, owner or operator shall promptly secure closure device in closed position or reinstall cover and resume operation of control device	265.1085(c)(2)(iii)(B)(*1*)	7045.0649	IBR			
add new paragraph; during periods of routine inspection, maintenance, or other activities needed for normal operations, and for removal of accumulated sludge or other residues from bottom of tank	265.1085(c)(2)(iii)(B)(*2*)	7045.0649	IBR			
add new paragraph; safety devices, as defined in 265.1081, may be installed and operated as necessary on tank complying with	265.1085(e)(4)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
requirements of 265.1085(e)						
replace “perimeter” with “diameter”; replace “are then are” with “are then”	265.1085(f)(3)(i)(D)(*4*)	7045.0649	IBR			
add new paragraph; safety devices, as defined in 265.1081, may be installed and operated as necessary on tank complying with requirements of 265.1085(f)	265.1085(f)(4)	7045.0649	IBR			
add new paragraph; hazardous waste meets requirements of 265.1083(c)(4)	265.1085(j)(2)(iii)	7045.0649	IBR			
STANDARDS: SURFACE IMPOUNDMENTS						
replace “provisions” with “requirements”; replace “this sections” with “this section”	265.1086(b)(2)	7045.0649	IBR			
replace “materials for” with “materials of construction”	265.1086(d)(1)(iii)	7045.0649	IBR			
insert “the” before “surface impoundment”	265.1086(d)(2)(i)(B)	7045.0649	IBR			
add new paragraph; hazardous waste meets requirements of 265.1083(c)(4)	265.1086(e)(2)(iii)	7045.0649	IBR			
STANDARDS: CONTAINERS						
revise paragraph and add requirements; container visual inspection shall be conducted on or before date that container accepted at facility; date of acceptance	265.1087(c)(4)(i)	7045.0649	IBR			
revise paragraph and add	265.1087(d)(4)(i)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
requirements; container visual inspection shall be conducted on or before date that container accepted at facility; date of acceptance						
completely revise paragraph; to determine compliance with 265.1087(d)(1)(ii), procedure specified in 265.1084(d) shall be used	265.1087(g)	7045.0649	IBR			
STANDARDS: CLOSED-VENT SYSTEMS AND CONTROL DEVICES						
add “that is a hazardous waste and that” after “carbon”; add “, regardless of the average volatile organic concentration of the carbon” at end of paragraph	265.1088(c)(3)(ii)	7045.0649	IBR			
insert “closed-vent system and” between “The” and “control”	265.1088(c)(7)	7045.0649	IBR			
RECORDKEEPING REQUIREMENTS						
replace “paragraphs (b) through (i)” with “paragraphs (b) through (j)”; replace both occurrences of “paragraph (i)” with “paragraphs (i) and (j); replace “tank or container” with “waste management unit”; replace “§§ 264.1084 through 264.01087" with “§§ 265.1085 through 265.1088"; replace “§ 264.1084(d) of this subpart” with “§ 265.1080(d) or § 265.1080(b)(7) of this subpart, respectively”	265.1090(a)	7045.0649	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	delete ", the following information"; replace "the location" with "The location"	265.1090(b)(1)(ii)(B)	7045.0649	IBR			
iii	replace "or (c)(2)" with "§ 265.1083(c)(2)(i) through (c)(2)(vi)"	265.1090(f)(1)	7045.0649	IBR			
	add new paragraph; for each hazardous waste management unit not using air emission controls specified in 265.1085 through 265.1088 in accordance with 265.1080(b)(7), owner and operator shall record and maintain the following information:	265.1090(j)	7045.0649	IBR			
	add new paragraph; certification that waste management unit is equipped with and operating air emission controls in accordance with requirements under 40 CFR part 60, part 61, or part 63	265.1090(j)(1)	7045.0649	IBR			
	add new paragraph; identification of specific requirements codified under 40 CFR part 60, part 61, or part 63 with which unit is in compliance	265.1090(j)(2)	7045.0649	IBR			
	PART 265 APPENDICES						
	APPENDIX VI - COMPOUNDS WITH HENRY'S LAW CONSTANT LESS THAN 0.1 Y/X						
	revised to read as follows:		7045.0643, 1, E	IBR			

Appendix VI to Part 265--Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound nameCAS No.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE

Acetaldol107-89-1

Acetamide60-35-5

2-Acetylaminofluorene 53-96-3

3-Acetyl-5-hydroxypiperidine.

3-Acetylpiperidine 618-42-8

1-Acetyl-2-thiourea 591-08-2

Acrylamide79-06-1

Acrylic acid79-10-7

Adenine .. 73-24-5

Adipic acid124-04-9

Compound nameCAS No.

Adiponitrile111-69-3

Alachlor15972-60-8

Aldicarb 116-06-3

Ametryn 834-12-8

4-Aminobiphenyl92-67-1

4-Aminopyridine504-24-5

Aniline 62-53-3

o-Anisidine90-04-0

Anthraquinone84-65-1

Atrazine1912-24-9

Benzenearsonic acid 98-05-5

Benzenesulfonic acid 98-11-3

Benzidine 92-87-5

Benzo(a)anthracene 56-55-3

Benzo(k)fluoranthene 207-08-9

Benzoic acid65-85-0

Benzo(g,h,i)perylene 191-24-2

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Benzo(a)pyrene50-32-8						
Benzyl alcohol100-51-6						
gamma-BHC58-89-9						
Bis(2-ethylhexyl)phthalate 117-81-7						
Bromochloromethyl acetate.						
Bromoxynil1689-84-5						
Butyric acid107-92-6						
Compound nameCAS No.						
Caprolactam (hexahydro-2H-azepin-2-one) 105-60-2						
Catechol (o-dihydroxybenzene) 120-80-9						
Cellulose9004-34-6						
Cell wall.						
Chlorhydrin (3-Chloro-1,2-propanediol) 96-24-2						
Chloroacetic acid79-11-8						
2-Chloroacetophenone 93-76-5						
p-Chloroaniline106-47-8						
p-Chlorobenzophenone 134-85-0						
Chlorobenzilate510-15-6						
p-Chloro-m-cresol (6-chloro-m-cresol) 59-50-7						
3-Chloro-2,5-diketopyrrolidine.						
Chloro-1,2-ethane diol.						
4-Chlorophenol106-48-9						
Chlorophenol polymers (2-chlorophenol & 4-chlorophenol) 95-57-8 & 106-48-9						
1-(o-Chlorophenyl)thiourea 5344-82-1						
Chrysene218-01-9						
Citric acid 77-92-9						
Creosote8001-58-9						
m-Cresol 108-39-4						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE

o-Cresol .. 95-48-7

p-Cresol 106-44-5

Cresol (mixed isomers) 1319-77-3

4-Cumylphenol27576-86

Compound nameCAS No.

Cyanide... 57-12-5

4-Cyanomethyl benzoate.

Diazinon 333-41-5

Dibenzo(a,h)anthracene 53-70-3

Dibutylphthalate84-74-2

2,5-Dichloroaniline (N,N'-dichloroaniline) 95-82-9

2,6-Dichlorobenzonitrile11 1194-65-6

2,6-Dichloro-4-nitroaniline 99-30-9

2,5-Dichlorophenol 333-41-5

3,4-Dichlorotetrahydrofuran 3511-19

Dichlorvos (DDVP) 62737

Diethanolamine111-42-2

N,N-Diethylaniline 91-66-7

Diethylene glycol111-46-6

Diethylene glycol dimethyl ether (dimethyl Carbitol) 111-96-6

Diethylene glycol monobutyl ether (butyl Carbitol) 112-34-5

Diethylene glycol monoethyl ether acetate (Carbitol acetate) 112-15-2

Diethylene glycol monoethyl ether (Carbitol Cellosolve) 111-90-0

Diethylene glycol monomethyl ether (methyl Carbitol) 111-77-3

N,N'-Diethylhydrazine 1615-80-1

Diethyl (4-methylumbelliferyl) thionophosphate 299-45-6

Diethyl phosphorothioate 126-75-0

N,N'-Diethylpropionamide 15299-99-7

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Dimethoate60-51-5						

Compound nameCAS No.

2,3-Dimethoxystrychnidin-10-one 357-57-3

4-Dimethylaminoazobenzene 60-11-7

7,12-Dimethylbenz(a)anthracene 57-97-6

3,3-Dimethylbenzidine 119-93-7

Dimethylcarbamoyl chloride 79-44-7

Dimethyldisulfide624-92-0

Dimethylformamide 68-12-2

1,1-Dimethylhydrazine 57-14-7

Dimethylphthalate131-11-3

Dimethylsulfone67-71-0

Dimethylsulfoxide 67-68-5

4,6-Dinitro-o-cresol 534-52-1

1,2-Diphenylhydrazine 122-66-7

Dipropylene glycol (1,1'-oxydi-2-propanol) 110-98-5

Endrin 72-20-8

Epinephrine51-43-4

mono-Ethanolamine 141-43-5

Ethyl carbamate (urethane) 5-17-96

Ethylene glycol107-21-1

Ethylene glycol monobutyl ether (butyl Cellosolve) 111-76-2

Ethylene glycol monoethyl ether (Cellosolve) 110-80-5

Ethylene glycol monoethyl ether acetate (Cellosolve acetate) 111-15-9

Ethylene glycol monomethyl ether (methyl Cellosolve) 109-86-4

Ethylene glycol monophenyl ether (phenyl Cellosolve) 122-99-6

Compound nameCAS No.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE

Ethylene glycol monopropyl ether (propyl Cellosolve) 2807-30-9

Ethylene thiourea (2-imidazolidinethione) 9-64-57

4-Ethylmorpholine 100-74-3

3-Ethylphenol620-17-7

Fluoroacetic acid, sodium salt 62-74-8

Formaldehyde50-00-0

Formamide75-12-7

Formic acid64-18-6

Fumaric acid110-17-8

Glutaric acid110-94-1

Glycerin (Glycerol) 56-81-5

Glycidol 556-52-5

Glycinamide598-41-4

Glyphosate1071-83-6

Guthion ... 86-50-0

Hexamethylene-1,6-diisocyanate (1,6-diisocyanatohexane) 822-06-0

Hexamethyl phosphoramide 680-31-9

Hexanoic acid142-62-1

Hydrazine302-01-2

Hydrocyanic acid74-90-8

Hydroquinone123-31-9

Hydroxy-2-propionitrile (hydracrylonitrile) 109-78-4

Indeno (1,2,3-cd) pyrene 193-39-5

Lead acetate301-04-2

Compound nameCAS No.

Lead subacetate (lead acetate, monobasic) 1335-32-6

Leucine ... 61-90-5

Malathion121-75-5

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE

Maleic acid110-16-7

Maleic anhydride108-31-6

Mesityl oxide141-79-7

Methane sulfonic acid 75-75-2

Methomyl16752-77-5

p-Methoxyphenol150-76-5

Methyl acrylate96-33-3

4,4'-Methylene-bis-(2-chloroaniline) 101-14-4

4,4'-Methylenediphenyl diisocyanate (diphenyl methane diisocyanate) 101-68-8

4,4'-Methylenedianiline 101-77-9

Methylene diphenylamine (MDA).

5-Methylfurfural620-02-0

Methylhydrazine60-34-4

Methyliminoacetic acid.

Methyl methane sulfonate 66-27-3

1-Methyl-2-methoxyaziridine.

Methylparathion298-00-0

Methyl sulfuric acid (sulfuric acid, dimethyl ester) 77-78-1

4-Methylthiophenol 106-45-6

Monomethylformamide (N-methylformamide) 123-39-7

Nabam... 142-59-6

Compound nameCAS No.

alpha-Naphthol90-15-3

beta-Naphthol135-19-3

alpha-Naphthylamine 134-32-7

beta-Naphthylamine 91-59-8

Neopentyl glycol (dimethylolpropane) 126-30-7

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Niacinamide98-92-0						
o-Nitroaniline88-74-4						
Nitroglycerin55-63-0						
2-Nitrophenol88-75-5						
4-Nitrophenol100-02-7						
N-Nitrosodimethylamine 62-75-9						
Nitrosoguanidine674-81-7						
N-Nitroso-n-methylurea 684-93-5						
N-Nitrosomorpholine (4-nitrosomorpholine) 59-89-2						
Oxalic acid144-62-7						
Parathion. 56-38-2						
Pentaerythritol115-77-5						
Phenacetin62-44-2						
Phenol... 108-95-2						
Phenylacetic acid103-82-2						
m-Phenylene diamine 108-45-2						
o-Phenylene diamine 95-54-5						
p-Phenylene diamine 106-50-3						
Phenyl mercuric acetate 62-38-4						
Compound nameCAS No.						
Phorate.. 298-02-2						
Phthalic anhydride 85-44-9						
alpha-Picoline (2-methyl pyridine) 109-06-8						
1,3-Propane sulfone 1120-71-4						
beta-Propiolactone 57-57-8						
Proporur (Baygon).						
Propylene glycol57-55-6						
Pyrene... 129-00-0						

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE

Pyridinium bromide 39416-48-3

Quinoline 91-22-5

Quinone (p-benzoquinone) 106-51-4

Resorcinol108-46-3

Simazine122-34-9

Sodium acetate127-09-3

Sodium formate141-53-7

Strychnine57-24-9

Succinic acid110-15-6

Succinimide123-56-8

Sulfanilic acid121-47-1

Terephthalic acid100-21-0

Tetraethyldithiopyrophosphate 3689-24-5

Tetraethylenepentamine 112-57-2

Thiofanox39196-18-4

Thiosemicarbazide 79-19-6

Compound nameCAS No.

2,4-Toluenediamine 95-80-7

2,6-Toluenediamine 823-40-5

3,4-Toluenediamine 496-72-0

2,4-Toluene diisocyanate 584-84-9

p-Toluic acid99-94-5

m-Toluidine108-44-1

1,1,2-Trichloro-1,2,2-trifluoroethane 76-13-1

Triethanolamine102-71-6

Triethylene glycol dimethyl ether.

Tripropylene glycol 24800-44-0

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Warfarin.. 81-81-2						
3,4-Xylenol (3,4-dimethylphenol) 95-65-8						
PART 270 - EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGR						
SUBPART B - PERMIT APPLICATION						
CONTENTS OF PART B: GENERAL REQUIREMENTS						
insert “of this part” following “264.15(b)” and following “264.1088"	270.14(b)(5)	7001.0560, E	X			

i Note the December 8, 1997 rule (62 FR 64636) added paragraph 265.1030(d). There is no 265.1030(c); therefore, it is assumed that 265.1030(c) is reserved.

ii At (b)(3)(iii) there is a typographical error. The internal reference to “(b)(4)(iii)” should be “(a)(4)(iii)”.

iii At 265.1090(f)(1) there is a typographical error. The reference to “265.1084(c)(2)(i)” should be “265.1083(c)(2)(i)”.

RCRA REVISION CHECKLIST 167 A

Land Disposal Restrictions Phase IV –
Treatment Standards for Metal Wastes
and Mineral Processing Wastes
63 FR 28556-28753
May 26, 1998
(RCRA Cluster VIII, HSWA provisions)

Notes: 1) This rule makes changes to 40 CFR Part 148, addressing Land Disposal Restrictions for Underground Injection Programs relative to mineral processing wastes. These changes are outside the Subtitle C program and are not addressed by this Revision Checklist.

2) On August 10, 1998 (63 FR 42580), a rule was promulgated to clarify the correct adoption sequence of the May 4, 1998 rule (63 FR 24596, CL 165), the May 26, 1998 rule (63 FR 28556, CL 167), and the June 29, 1998 (63 FR 35147) technical amendment to the May 4, 1998 rule, as they relate to the organobromine production waste entries at 40 CFR 268.40 and 268.48. The August 10, 1998 rule does not change the regulatory requirements promulgated by those rules, but merely clarifies that the typographical error in the May 4 rule, which was corrected by the June 29, 1998 technical amendment, was not included in the 40 CFR 268.40 and 268.48 tables that were completely reprinted on May 26, 1998 (CL 167). The August 10, 1998 rule added the effective date of the May 4, 1998 rule to the May 26, 1998 rule (CL 167) for those States adopting the organobromine entries as reprinted in the tables at 40 CFR 268.40 and 268.48.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART A - GENERAL						
DEFINITIONS APPLICABLE IN THIS PART						
insert “selenium, sulfides,” after “except fluoride,”; delete comma after “hazardous waste”	268.2(i)	7045.1390	Incorporated by reference (IBR)			
DILUTION PROHIBITED AS A SUBSTITUTE FOR TREATMENT						
add new paragraph; adding iron filings or other metallic forms of iron to lead-containing hazardous wastes to achieve land disposal restriction treatment standard for lead is a form of impermissible dilution and is prohibited; list of lead-containing wastes	268.3(d)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
i WASTE SPECIFIC PROHIBITIONS - TOXICITY CHARACTERISTIC METAL WASTES						
effective August 24, 1998, the specified wastes are prohibited from land disposal	268.34(a)	7045.1390	IBR			
effective May 26, 2000, the specified wastes are prohibited from land disposal	268.34(b)					
between May 26, 1998 and May 26, 2000, newly identified characteristic wastes mixed with D004–D011 wastes, or mixed with newly identified characteristic mineral processing wastes, soil, or debris may be disposed in a landfill or surface impoundment if unit is in compliance with 268.5(h)(2)	268.34(c)					
requirements of 268.34(a) & (b) do not apply if:	268.34(d) intro					
wastes meet applicable treatment standards specified in part 268, subpart D	268.34(d)(1)					
persons have been granted an exemption from prohibition pursuant to a petition under 268.6, with respect to wastes & units covered	268.34(d)(2)					
wastes meet applicable alternate treatment standards pursuant to a petition under 268.44; or	268.34(d)(3)					
persons have been granted an exemption to the effective date of a prohibition pursuant to 268.5, with respect to wastes	268.34(d)(4)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	covered by extension						
	to determine whether a hazardous waste exceeds treatment standards in 268.40, test the waste extract or entire waste, or use knowledge of the waste; if waste contains constituents in excess of applicable UTS levels of 268.48, waste is prohibited from land disposal and all requirements of 268 apply, except as specified	268.34(e)					
	SUBPART D - TREATMENT STANDARDS						
	APPLICABILITY OF TREATMENT STANDARDS						
	replace "(D001–D003, and D012–D043)" with "(D001–D043)"; insert "and are not managed in a wastewater treatment system...injection well," after "Hazardous Wastes,"; replace "'Table UTS,'" with "Table Universal Treatment Standards,"	268.40(e)	7045.1390	IBR			
	add new paragraph; prohibited D004–D011 mixed radioactive wastes & mixed radioactive listed wastes containing metals, previously treated & put into storage, do not have to be retreated prior to land disposal	268.40(h)					
ii	replace existing table with the table found at 63 FR 28643-28738 (May 26, 1998)	268.40/Table "Treatment Standards for Hazardous Wastes"					
	UNIVERSAL TREATMENT STANDARDS						

Note: The revised numerical Universal Treatment Standards (UTS) for metal constituents Barium, Lead, Selenium, Beryllium, Nickel, Thallium, and Vanadium are less stringent (†) than existing standards and are optional for State adoption. The revised UTS for Cadmium, Chromium, Silver, Antimony and Zinc are more stringent. The UTS for Mercury is printed in the rule because of the ongoing discussion regarding changing

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
the standards; however, at this time the UTS for Mercury remains unchanged.						
iii replace existing table with the table found at 63 FR 28739-28750 (May 26, 1998)	268.48(a)/Table UTS	7045.1390	IBR			

[i] CL 157 (62 FR 26022, May 12, 1997) removed and reserved § 268.34. The July 1, 1997 CFR contains the section, with a note indicating the removal effective August 11, 1997. The May 26, 1998 rule (63 FR 28556) instructions indicate that §268.34 is being revised, but the entire section is new since the section was reserved at the time the rule was promulgated.

[ii] The CAS # for U408 which is listed on 63 FR 2838 should be “118-79-6” instead of “111-79-6” as printed.

[iii] Note also, that there is no change to the 2,4,6-tribromophenol entry in the UTS Table in 268.48, although that table has been revised to reflect the new UTS for metal constituents.

RCRA REVISION CHECKLIST 167 B

Land Disposal Restrictions Phase IV –
Hazardous Soils Treatment Standards and Exclusions
63 FR 28556-28753
May 26, 1998
(RCRA Cluster VIII, HSWA provisions)

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	SUBPART A - GENERAL						
	DEFINITIONS APPLICABLE IN THIS PART						
†	add new paragraph; definition of soil	268.2(k)	7045.1390	Incorporated by reference (IBR)			
	TESTING, TRACKING, AND RECORDKEEPING REQUIREMENTS FOR GENERATORS, TREATERS, AND DISPOSAL FACILITIES						
†	delete “Determine if the waste ...as follows:”; delete “a” after “generator of”; replace "§268.40 or §268.45" with "§268.40, §268.45, or §268.49";after “before they can be land disposed” insert “and some soils are contaminated by such hazardous wastes”;after “These wastes” insert “, and soils contaminated with such wastes,”;after “they are managing a waste” insert “or soil contaminated with a waste,”	268.7(a)(1)	7045.1390	IBR			
†	insert “or contaminated soil” after “If the waste”	268.7(a)(2)					
†	add new paragraph; for	268.7(a)(2)(i)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	contaminated soil certification statement should be included, signed by an authorized representative; certification statement						
†	add and reserve new paragraph	268.7(a)(2)(ii)					
†	insert “or contaminated soil” after “If the waste” in the first sentence	268.7(a)(3) intro					
i,†	completely revise; for contaminated soil, with initial shipment of wastes generator must send notice & place copy in file; notice to include information in 268.7(a)(4) table	268.7(a)(3)(ii)					
†	insert “or contaminated soil” after “certain wastes” and after “hazardous wastes”	268.7(a)(4)					
†,ii,iii	redesignate entry 8 as 9; add new 8 as indicated at 63 FR 28640	268.7(a)(4)/table					
†	insert “or contaminated soil” after “prohibited waste”	268.7(a)(5)					
†	insert “or contaminated soil” after “that the waste”	268.7(a)(6)					
†	insert “or contaminated soil” after “For wastes”; delete “as concentrations”; delete the comma after “chapter)”	268.7(b)(1)					
†	insert “or contaminated soil” after “For wastes”	268.7(b)(2)					
†	insert “or contaminated soil” after “shipment of waste”	268.7(b)(3)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
†,3 redesignate entry 5 as 6; add new 5 as indicated at 63 FR 28640	268.7(b)(3)(ii)/Table					
† add new sentence & new certification statement after certification statement; a certification is also necessary for contaminated soil; certification statement	268.7(b)(4) intro					
† add new paragraph; generators & treaters who receive a determination that contaminated soil subject to 268.49(a) no longer contains a listed hazardous waste and determine that contaminated soil no longer exhibits a characteristic of hazardous waste must:	268.7(e) intro					
† add new subparagraph; prepare a one-time only documentation of determinations including supporting information and,	268.7(e)(1)					
† add new subparagraph; maintain that information in the facility files & other records for a minimum 3 years	268.7(e)(2)					
SUBPART D - TREATMENT STANDARDS						
VARIANCE FROM A TREATMENT STANDARD						
† redesignate 268.44(h)(3) as 268.44(h)(5); add new 268.44(h)(3); for contaminated soil only, treatment would result in hazardous constituent concentrations below that	268.44(h)(3) intro	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
necessary to minimize threats to human health and environment; treatment variances must:						
† at a minimum, impose alternative land disposal restriction treatment standards that, using a reasonable maximum exposure scenario, meet the listed specifications	268.44(h)(3)(i) 268.44(h)(3)(i)(A) 268.44(h)(3)(i)(B)					
† not consider post-land-disposal controls	268.44(h)(3)(ii)					
† add new paragraph; for contaminated soil only, treatment would result in hazardous constituent concentrations below natural background concentrations at the site of land disposal	268.44(h)(4)					
† redesignate former 268.44(h)(3) as 268.44(h)(5)	268.44(h)(5)					
iv ALTERNATIVE LDR TREATMENT STANDARDS FOR CONTAMINATED SOIL						
† applicability; LDRs must be complied with prior to placing contaminated soil into a land disposal unit; chart describes whether compliance with LDRs is necessary prior to placing contaminated soil into a land disposal unit; add table as shown at 63 FR 28751(May 26, 1998)	268.49(a)	7045.1390	IBR			
† prior to land disposal, contaminated soil identified by 268.49(a) must be treated according to 268.49(c) or 268.48 UTS applicable to contaminating waste	268.49(b)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	and/or applicable characteristic; 268.49(c) treatment standards and the UTS may be modified through a variance approved under 268.44						
†	treatment standards for contaminated soils; prior to land disposal, contaminated soil identified by 268.49(a) as needing to comply with LDRs must be treated according to 268.49(c)(1)-(3) or 268.48 UTS	268.49(c) intro					
†	all soils; prior to land disposal, all constituents subject to treatment must be treated according to standards specified	268.49(c)(1) intro 268.49(c)(1)(A) 268.49(c)(1)(B) 268.49(c)(1)(C)					
†	soils that exhibit characteristic of ignitability, corrosivity or reactivity; in addition to treatment required by 268.49(c)(1), prior to land disposal soils that exhibit a characteristic must be treated to eliminate characteristic	268.49(c)(2)					
†	soils that contain nonanalyzable constituents; in addition to requirements of 268.49(c)(1)&(2), prior to land disposal specified treatment is required	268.49(c)(3) intro 268.49(c)(3)(A) 268.49(c)(3)(B)					

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
† constituents subject to treatment; when applying soil treatment standards in 268.49(c), constituents subject to treatment are any listed in 268.48, Table UTS that are reasonably expected to be present, with exceptions, and are present at greater than 10 times the UTS	268.49(d)					
† management of treatment residuals; treatment residuals from treating contaminated soil identified by 268.49(a) must be managed as follows:	268.49(e) intro					
† soil residuals are subject to treatment standards of 268.49	268.49(e)(1)					
† non-soil residuals are subject to the standards specified	268.49(e)(2) intro 268.49(e)(2)(A) 268.49(e)(2)(B)					

[i] Note there is a typographical error at §268.7(a)(3)(ii) in the rule. The reference to "information in “268.7(a)(3) of the Generator” should be “information in column “268.7(a)(3)” of the Generator”.

[ii] There is a typographical error in the Table at 268.7(a)(4). At the #8 entry “complies with' “ should be “complies with]”

[iii] Note that the Tables at 268.7(a)(4) and (b)(3)(ii) are also addressed by Revision Checklist 167 C. That checklist revised entries 1 and 3 in the Table at 268.7(a)(4) and entries 1 and 2 in the Table at 268.7(b)(3)(ii).

[iv] The entire section 268.49 was added by 63 FR 28556, May 26, 1998.

RCRA REVISION CHECKLIST 167 C

Land Disposal Restrictions Phase IV – Corrections
63 FR 28556-28753
May 26, 1998
as amended at 63 FR 31266, June 8, 1998
(RCRA Cluster VIII, HSWA provisions)

Note: On August 10, 1998 (63 FR 42580), a rule was promulgated to clarify the correct adoption sequence of the May 4, 1998 rule (63 FR 24596, CL 165), the May 26, 1998 rule (63 FR 28556, CL 167), and the June 29, 1998 (63 FR 35147) technical amendment to the May 4, 1998 rule, as they relate to the organobromine production waste entries at 40 CFR 268.40 and 268.48. Subsequently, on April 9, 1999, the U.S. Court of Appeals vacated the listing of these organobromine production wastes and in turn, the May 4, 1998; June 29, 1998; and August 10, 1998 rules have been withdrawn. If a State chooses to follow this vacatur, it should remove the vacated wastes in the tables at 40 CFR 268.40 and 268.48, as indicated in footnotes 3 and 4. If the vacatur is not followed by a State, then the vacated wastes should remain as shown in the May 26, 1998 rule in tables 40 CFR 268.40 and 268.48.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	SUBPART A - GENERAL						
	TREATMENT SURFACE IMPOUNDMENT EXEMPTION						
	replace colon after “at least annually” with a semicolon; delete second sentence beginning with “However, residues which are”	268.4(a)(2)(ii)	7045.1390	Incorporated by reference (IBR)			
	insert period after “for subsequent management” and delete remainder of sentence	268.4(a)(2)(iii)					
	TESTING, TRACKING, AND RECORDKEEPING REQUIREMENTS FOR GENERATORS, TREATERS, AND DISPOSAL FACILITIES						
†★,i	for entry 1, insert “Numbers” after “Waste”, replace “Manifest numbers” with “Manifest Number of first shipment”; for entry 3, replace parenthetical phrase with “in characteristic wastes” and delete “_” under	268.7(a)(4)/table		IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	268.7(a)(3) column						
†★	replace “restricted” with “prohibited”; after first occurrence of “or solid waste or” replace “exempt” with “is exempted”; delete comma after first occurrence of “Subtitle C regulation” and after “261.4(a)(2)”; insert “that” after “261.4(a)(2) or”; insert “, or are managed in an underground injection well regulated by the SDWA” after “CWA-equivalent,”; replace “stating” with “describing”; insert “on-site” after “facility’s”; change “file” to “files”	268.7(a)(7)					
†★,1	for entry 1, insert “Numbers” after “Waste”, replace “Manifest numbers” with “Manifest Number of first shipment” remove “_” from §268.7(b) column; for entry 2, replace parenthetical phrase with “in characteristic wastes”	268.7(b)(3)(ii)/Table					
†★	add new paragraph; for characteristic wastes subject to 268.40 that are reasonably expected to contain 268.2(i) hazardous constituents which are treated on-site and then sent off-site, the certification must state; certification statement	268.7(b)(4)(iv)					
†★	add new paragraph; for characteristic wastes containing underlying hazardous constituents as	268.7(b)(4)(v)					

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	defined in 268.2(i) that are treated on-site to hazardous constituent levels in 268.48, the certification must state; certification statement						
†★	replace “treatment or storage” with “treatment, storage, or disposal”; insert comma after second occurrence of “storage”	268.7(b)(5)					
†★,ii	replace both references to “(b)(4)” with “(b)(3)”; replace reference to “(b)(5)” with “(b)(4)”	268.7(b)(6)					
	SUBPART D - TREATMENT STANDARDS						
	APPLICABILITY OF TREATMENT STANDARDS						
iii	replace “(D001–D003, and D012–D043)” with “(D001–D043)”; insert “and are not managed in a wastewater treatment system...injection well,” after “Hazardous Wastes,”; replace “‘Table UTS,’” with “Table Universal Treatment Standards,”	268.40(e)		IBR			
3,iv	replace existing table with the table found at 63 FR 28643-28738 (May 26, 1998)	268.40/table “Treatment Standards for Hazardous Wastes”					
	TREATMENT STANDARDS EXPRESSED AS SPECIFIED TECHNOLOGIES						
	remove “paragraphs (a)(1) and (a)(2) of this section and in”; replace “in paragraphs (a)(1) and (a)(2) and Table 1 of this section” with “in the table entitled “Technology... Standards” in this section”	268.42(a)		IBR			

Comment: This Entry is also in CL 167 A

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
v	remove	268.42(a)(1) – (a)(3)					
	TREATMENT STANDARDS FOR HAZARDOUS DEBRIS						
	replace reference to "261.3(e)(2)" with "261.3(f)(2)"	268.45(a) intro		IBR			
	insert "treatment" after "meet the"; replace "under §268.43" with "in 'Treatment Standards for Hazardous Wastes' at §268.40"	268.45(d)(3)					
	replace "technology-based standards for ... under §268.42" with "technology specified in the treatment standard for D001: Ignitable Liquids"	268.45(d)(4)					
	UNIVERSAL TREATMENT STANDARDS						
3,vi	replace existing table with the table found at 63 FR 28739-28750 (May 26, 1998)	268.48(a)/table UTS		IBR			
	APPENDIX VII TO PART 268						
	remove entries for waste code F033; revise second entry for F032, second entry for F034, first entry for K088, entries for D003–D011; add two entries for F035	Appendix VII, Table 1		IBR			
	revise entry number 9 and add entries 12 and 13	Appendix VII, Table 2					
	APPENDIX VIII TO PART 268						
	revise title; add in alphanumeric order the entry for "NA"	Appendix VIII		IBR			

†★ These changes are conditionally optional. If the State has adopted the optional revisions to the recordkeeping and paperwork requirements in Revision Checklist 157, then the State is required to adopt the changes to 268.7 in this

checklist with the exception of adding the entries for contaminated soils in the Tables at 268.7(a)(4) and 268.7(b)(3)(iii).

RCRA REVISION CHECKLIST 167 C: Land Disposal Restrictions
Phase IV--Corrections (cont'd)

[i] Note that the Tables at 268.7(a)(4) and (b)(3)(ii) are also addressed by Revision Checklist 167 B. That checklist redesignated entry 8 as 9 and added a new entry 8 in the Table at 268.7(a)(4), and it redesignated entry 5 as 6 and added a new 5 in the Table at 268.7(b)(3)(ii). These changes should not be adopted unless the State adopts the other changes made by Revision Checklist 167 B.

[ii] The internal reference at 268.7(b)(6) has incorrectly been changed from "266.20(b)" to "268.20(b)". There is no 40 CFR 268.20; therefore, the original reference appears to have been correct and should be retained.

[iii] Revisions made at 268.40(e), and the replacement of the 268.40 and 268.48 tables, are included on both Revision Checklists 167A and 167C as revisions were made to these tables both because of changes due to the new LDR Phase IV restrictions and because of corrections needed to the existing tables.

[iv] If a State has chosen to follow the April 9, 1999 vacatur, it should not include entries for K140 and U408 when it revises/replaces its analog to the 40 CFR 268.40 "Treatment Standards for Hazardous Wastes" table. Wastes K140 and U408 were added by Revision Checklist 165 (63 FR 24596, May 4, 1998; 63 FR 35147, June 29, 1998).

[v] Revision Checklist 167C removed subparagraphs at 40 CFR 268.42(a)(1)-(a)(3). Beginning with the 1998 version, the CFR contains an error in that these paragraphs were not removed.

[vi] If a State has chosen to follow the April 9, 1999 vacatur, it should not include the entry for "2,4,6-Tribromophenol" when it revises/replaces its analog to the 40 CFR 268.48(a) "Universal Treatment Standards" table. This waste was added by Revision Checklist 165 (63 FR 24596, May 4, 1998; 63 FR 35147, June 29, 1998). Revision Checklist 165 was withdrawn by EPA because the listing of "2,4,6-Tribromophenol" was vacated on April 9, 1999 by the U.S. Court of Appeals for the District of Columbia in Great Lakes Chemical Corporation vs. EPA.

RCRA REVISION CHECKLIST 167 D - REVISED

Mineral Processing Secondary Materials Exclusion
63 FR 28556-28753
May 26, 1998

(RCRA Cluster VIII, non-HSWA provisions)

NOTE: The rule addressed by this checklist defines the circumstances under which secondary materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing are excluded from the definition of solid waste. Note, however, that the U.S. D.C. Circuit Court of Appeals vacated the portion of the rule that attempted to regulate as waste certain sludges and by-products exhibiting a characteristic of hazardous waste that are not listed in 40 CFR 261.31 or 261.32. As a result of the court decision and based on the wording of 40 CFR 261.4(a)(16), listed sludges and by-products are never excluded from the definition of solid waste; therefore, only reclaimed spent materials are covered by the conditional exclusion introduced by the rule. This checklist has been revised to reflect these changes. See the summary for this checklist for an explanation of the vacatur and how it impacts authorization of state programs.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART A - GENERAL						
	DEFINITION OF SOLID WASTE						
†,[1],[2]	insert "(except as provided under 40 CFR 261.4(a)(15))" at end of first sentence	261.2(c)(3)	MN Statutes, section 116.06, subdivision 11	X			
†,	revise Table 1 by inserting in third column heading "(except as provided in 261.4(a)(15) for mineral processing secondary materials)" following "Reclamation (§ 261.2(c)(3))"	261.2(c)(4)/Table	MN Statutes, section 116.06, subdivision 11	X			

[1] Note that there are typographical errors at 261.2(c)(3), 261.2(c)(4) [Table heading], 261.2(e)(1)(iii) and 261.4(a)(16)(iii). All make reference to "261.4(a)(15)", the Kraft Mill Steam Strippers exclusion, when they should be referring to "261.4(a)(16)" the exclusion for secondary materials generated by the primary mineral processing industry. Note that Revision Checklist 179 (64 FR 25408-25417; May 11, 1999) redesignated the provision as 261.4(a)(17).

[2] The rule addressed by Revision Checklist 167D included a change that added "(except as provided under 40 CFR 261.4(a)(15))" at the end of the second sentence in 261.2(c)(3). This revision was set aside by the U.S. D.C. Circuit Court of Appeals in Association of Battery Recyclers, Inc. v. EPA, 208 F.3d 1047 (D.C. Cir. 2000). In that decision, the Court held that the expansion of the definition of solid waste to include materials based on how they are stored prior to reclamation is not appropriate. This checklist was revised to reflect this court decision. A State that chooses to include the parenthetical to the second sentence should indicate that its analog is broader in scope as explained in the summary for this checklist.

†,,[3]	add sentence; where materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion at 261.4(a)(15) apply	261.2(e)(1)(iii)	MN Statutes, section 116.06, subdivision 11	X			

[3] The preamble to the May 26, 1998 (CL 167D) rule indicates that language is being added to the existing provision at 261.2(e)(1)(iii). The instructions indicate that the paragraph is being revised. It is not EPA's intention to remove the existing language and replace it with the May 26, 1998 provision. EPA intends to issue a technical correction which clarifies this provision. Until that amendment is available, it is recommended that the new sentence be added at the end of the existing provision.

	EXCLUSIONS						
†	add new paragraph; secondary materials generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered, provided that:	261.4(a)~~(16)~~(17) intro	7045.0120, 1, X	X			
†	add new subparagraph; secondary material is legitimately recycled to recover minerals, acids, cyanide, water or other values	261.4(a)~~(16)~~(17)(i)	7045.0120, 1, X, (1)	X			
†	add new subparagraph; secondary material is not accumulated speculatively	261.4(a)~~(16)~~(17)(ii)	7045.0120, 1, X, (2)	X			
†,	add new subparagraph; except as provided in 261.4(a)(15)(iv), the secondary material is stored in tanks, containers, or buildings meeting the specified minimum integrity standards; if tanks or containers contain particulate subject to wind dispersal, owner/operator must operate units in a manner which controls fugitive dust; units must be designed, constructed and operated to prevent significant releases to the environment of these materials	261.4(a)~~(16)~~(17)(iii)	7045.0120, 1, X, (3)	X			

†	add new subparagraph; Regional Administrator or State Director may make a site-specific determination that only solid mineral processing secondary materials may be placed on pads, rather than in tanks, containers, or buildings; solid mineral processing secondary materials do not contain free liquid; pads must be designed, constructed & operated to prevent significant releases and provide same degree of containment afforded by the non-RCRA tanks, containers & buildings eligible for exclusion	261.4(a)~~(16)~~(17)(iv)	7045.0120, 1, X, (4)	X			
†	add new subparagraph; environmental considerations for pads	261.4(a)~~(16)~~(17)(iv)(A)	7045.0120, 1, X, (4), (a)	X			
†	add new subparagraph; minimum standards for pads	261.4(a)~~(16)~~(17)(iv)(B)	7045.0120, 1, X, (4), (b)	X			
†	add new subparagraph; notice and comment opportunity requirements before decision	261.4(a)~~(16)~~(17)(iv)(C)	7045.0120, 1, X, (4), (c)	X			

†	add new paragraph; owner/operator provides notice to Regional Administrator or State Director identifying specified information; notification must be updated when type of materials recycled or location changes	261.4(a)~~(16)~~(17)(v)	7045.0120, 1, X, (5)	X			
†	add new paragraph; for purposes of 261.4(b)(7), mineral processing secondary materials must be the result of mineral processing & may not contain listed hazardous wastes; listed & characteristic hazardous wastes generated by non-mineral processing industries are not eligible for exclusion	261.4(a)~~(16)~~(17)(vi)	7045.0120, 1, X, (6)	X			

RCRA REVISION CHECKLIST 167 E

Bevill Exclusion Revisions and Clarifications
63 FR 28556-28753
May 26, 1998
(RCRA Cluster VIII, non-HSWA provisions)

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART A - GENERAL						
	DEFINITION OF HAZARDOUS WASTE						
	following “identified in subpart C”, replace “except that” with “of this part. However,”; following “under subpart C”, replace “of this part” with “is a hazardous waste”; in second sentence, insert a comma following “had not occurred”	261.3(a)(2)(i)	7045.0102, 2, H, (1)-(2)	No change needed X			
	remains unchanged even though included in this rule	261.3(a)(2)(iii)	7045.0102, 2, ~~I~~A	Added X			
	EXCLUSIONS						
†	revise 261.4(b)(7) as 261.4(b)(7), (b)(7)(i), & (b)(7)(ii); new 261.4(b)(7) is now unchanged first sentence of old 261.4(b)(7)	261.4(b)(7) intro	7045.0120, 1, I	X			
†	new 261.4(b)(7)(i) is second sentence of old 261.4(b)(7) with the following revisions: delete comma following “§261.4(b)(7)”; replace colon following “activities” with a semicolon; use lower case	261.4(b)(7)(i)	7045.0120, 1, I	X			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	with "crushing"						
†	new 261.4(b)(7)(ii) is third sentence of old 261.4(b)(7) with the following revisions: replace "For the purpose" with "For the purposes"; insert "as generated" after "the following wastes"	261.4(b)(7)(ii)	7045.0120, 1, I	X			
†	redesignate old 261.4(b)(7)(i) - (xx) as 261.4(b)(7)(ii)(A) - (T)	261.4(b)(7)(ii)(A) - (T)	7045.0120, 1, I, (1)-(20)	X			
†	add new paragraph; a residue derived from co-processing mineral processing secondary materials with normal beneficiation raw materials remains excluded under 261.4(b) if owner/operator meets specified conditions	261.4(b)(7)(iii)	7045.0120, 1, I	X			
		261.4(b)(7)(iii)(A)	7045.0120, 1, I	X			
		261.4(b)(7)(iii)(B)	7045.0120, 1, I, last paragraph	X			

RCRA REVISION CHECKLIST 167 F

Exclusion of Recycled Wood Preserving Wastewaters
63 FR 28556-28753
May 26, 1998
(RCRA Cluster VIII, non-HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART A - GENERAL						
EXCLUSIONS						
† add new paragraph; prior to reuse, wood preserving wastewaters and spent wood preserving solutions described in 261.4(a)(9)(i)&(ii), so long as they meet all specified conditions	261.4(a)(9)(iii)	7045.0120, 1, T	X			
	261.4(a)(9)(iii)(A)	7045.0120, 1, T	X			
	261.4(a)(9)(iii)(B)	7045.0120, 1, T	X			
	261.4(a)(9)(iii)(C)	7045.0120, 1, T	X			
	261.4(a)(9)(iii)(D)	7045.0120, 1, T	X			
	261.4(a)(9)(iii)(E)	7045.0120, 1, T	X			

RCRA REVISION CHECKLIST 170

Land Disposal Restrictions Phase IV -- Zinc Micronutrient Fertilizers, Amendment
63 FR 46332-46334
August 31, 1998
(RCRA Cluster IX, HSWA)

Note: This August 31, 1998 (63 FR 46332) notice stays the land disposal treatment standards for metal-bearing hazardous wastes which exhibit the characteristic of toxicity as it applies to zinc micronutrient fertilizers. Zinc micronutrient fertilizers are now subject to the applicable treatment standards in 268.41 contained in the July 1, 1990 edition of the CFR. The stay remains in effect until further regulatory action is taken by the Agency. If and when further action is taken, EPA will publish a notice in the Federal Register (a notice of Proposed Rulemaking is expected in 1999). A checklist is necessary because the code is affected. Because this amendment raises the level to which certain constituents must be treated and is, therefore, less stringent than previous standards, States are not required to adopt this checklist. As such, this checklist has been designated as optional.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	SUBPART D - TREATMENT STANDARDS						
	APPLICABILITY OF TREATMENT STANDARDS						
i,†	add new subparagraph; zinc-containing fertilizers produced for general public use and produced from or containing recycled characteristic hazardous wastes (D004-D011) are subject to 268.41 treatment standards in the July 1, 1990 edition of the CFR	268.40(i) (first entry)	7045.1390	IBR			

i Note that paragraph 268.40(i) was added by 63 FR 46332-46334(August 31, 1998, Revision Checklist 170) and a second paragraph 268.40(i) was added 63 FR 47410-47418 (September 4, 1998, Revision Checklist 171).

RCRA REVISION CHECKLIST 171

Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards
for Listed Hazardous Wastes from Carbamate Production
63 FR 47410-47418
September 4, 1998
(RCRA Cluster IX, HSWA)

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	SUBPART D - TREATMENT STANDARDS						
	APPLICABILITY OF TREATMENT STANDARDS						
	replace "August 26, 1997 and August 26, 1998" with **"**August 26, 1996 and March 4, 1999"	268.40(g)	7045.1390	IBR			
i	add new paragraph; effective September 4, 1998, treatment standards for certain "P" and "U" wastes specified in 261.33 may be satisfied by either meeting constituent concentrations in "Treatment Standards for Hazardous Wastes" table, or by treating the waste by technologies specified	second entry 268.40(i)		IBR			
ii,iii	revise "Treatment Standards for Hazardous Wastes" table and footnotes to table as shown at 63 FR 47416-47417	268.40/Table		IBR			
	UNIVERSAL TREATMENT STANDARDS						
iv	remove entries for the following: A2213; Bendiocarb phenol; Diethylene glycol, dicarbamate; Dimetilan;	268.48(a)/Table		IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Formparanate; Isolan; o-Phenylenediamine; and Tirpate; remove footnote “6” in column one, after the following: Aldicarb sulfone; Barban; Bendiocarb; Benomyl; Butylate; Carbaryl; Carbenzadim; Carbofuran; Carbofuran phenol; Carbosulfan; m-Cumenyl methylcarbamate; Dithiocarbamates (total); EPTC; Formetanate hydrochloride; Methiocarb; Methomyl; Metolcarb; Mexacarbate; Molinate; Oxamyl; Pebulate; o-Phenylenediamine; Physostigmine; Physostigmine salicylate; Promecarb; Propham; Propoxur; Prosulfocarb; Thiodicarb; Thiophanate-methyl; Triallate; Triethylamine; and Vernolate; and by removing footnote 6 itself						

---

i Paragraph 268.40(i) was added by 63 FR 46332-46334(August 31, 1998, Revision Checklist 170) and a second paragraph 268.40(i) was added 63 FR 47410-47418 (September 4, 1998, Revision Checklist 171). While the instructions for the 64 FR 25408 rule (May 11, 1999, Revision Checklist 179) indicate that the first paragraph should be redesignated as 268.40(j), the revisions made by this rule to 268.40(i) are made to the language introduced by the first paragraph; therefore, it is assumed that the second paragraph 268.40(i) should be redesignated as 268.40(j), and the first paragraph remain 268.40(i).

ii Note that on pages 47416-47417 of the September 4, 1998 rule, "mg/l" has been erroneously expressed as "mg/L" throughout the table "Treatment Standards for Hazardous Wastes" and throughout the footnotes to this table. Milligrams per liter is correctly abbreviated as "mg/l".

iii Footnote 11 to the table "Treatment Standards for Hazardous Wastes" was inadvertently revised to "mg/L TCLP". The correct version of footnote 11 is found in the May 26, 1998 FR notice (63 FR 28738).

iv This rule, 63 FR 47410-47418 (September 4, 1998, Revision Checklist 171), incorrectly removes footnote 6 from the 268.48(a)/Table. The footnote has been reinserted by Revision Checklist 179 (May 11, 1999, 64 FR 25408).

RCRA REVISION CHECKLIST 172

Land Disposal Restrictions Phase IV -- Extension of Compliance
Date for Characteristic Slags
63 FR 48124-48127
September 9, 1998
(RCRA Cluster IX, HSWA)

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	SUBPART D - TREATMENT STANDARDS						
	WASTE SPECIFIC PROHIBITIONS–SECOND THIRD WASTES						
†	redesignate old 268.34(b)-(e) as 268.34(c)-(f); add new 268.34(b) setting November 26, 1998 as the effective date when slags from secondary lead smelting which exhibit the Toxicity Characteristic due to one or more metals, are prohibited from land disposal	268.34(b)-(f)	7045.1390	IBR			

RCRA REVISION CHECKLIST 173

Land Disposal Restrictions; Treatment Standards for
Spent Potliners from Primary Aluminum
Reduction (K088); Final Rule
63 FR 51254-51267
September 24, 1998
(RCRA Cluster IX, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 - LAND DISPOSAL RESTRICTIONS						
SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
WASTE SPECIFIC PROHIBITIONS-SPENT ALUMINUM POTLINERS; REACTIVE; AND CARBAMATE WASTES						
replace “October 8, 1997” with “September 21, 1998”; replace “this waste” with “these wastes”	268.39(c)	7045.1390	Incorporated by reference (IBR)			
SUBPART D - TREATMENT STANDARDS						
APPLICABILITY OF TREATMENT STANDARDS						
in the entry for K088, correct “Acenaphthene” to “Acenaphthalene”; correct “Benz(a)anthracene” to “Benzo(a)anthracene”; in nonwastewaters column for Arsenic, replace “5.0 mg/l TCLP” with “26.1 mg/kg”; remove “Fluoride” and its corresponding data	268.40/Table		IBR			

RCRA REVISION CHECKLIST 177

Organic Air Emission Standards: Clarification and Technical Amendments
64 FR 3382
January 21, 1999
(RCRA Cluster IX, HSWA provisions)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 262 - STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE						
SUBPART B - THE MANIFEST						
ACCUMULATION TIME						
insert “the applicable requirements of” after “complies with”; change “subpart” to “subparts”; insert “, AA, BB, and CC” after “subparts I”	262.34(a)(1)(i)	7045.0292, 1, B, (1)	X			
insert “the applicable requirements of” after “complies with”; change “subpart” to “subparts”; insert “, AA, BB, and CC” after “subparts J”; remove comma after “part 265”	262.34(a)(1)(ii)	7045.0292, 1, B, (1)	X			
PART 264 - STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART AA - AIR EMISSION STANDARDS FOR PROCESS VENTS						
DEFINITIONS						
revise “Equipment”; insert “or other connector” after “flange”	264.1031	7045.0547	Incorporated by reference (IBR)			
revise “Open-ended valve or line”; replace “process fluid” with “hazardous waste”	264.1031	7045.0547	IBR			
add “sampling connection	264.1031	7045.0547	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
system" definition in alphabetic order						
SUBPART CC - AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS						
APPLICABILITY						
replace "generated" with "placed in the unit"; replace "the result" with "a result"; add comma after "3004(v)"; replace comma with semicolon after "3008(h)" and after "authorities"	264.1080(b)(5)	7045.0549	IBR			
WASTE DETERMINATION PROCEDURES						
add new paragraph; average VO concentration of waste stream shall be determined before first time material in hazardous waste stream is placed in unit exempted under 264.1082(c)(1) from using air emission controls, thereafter concentration shall be determined for each averaging period that hazardous waste is managed in unit; and	264.1083(a)(1)(i)	7045.0549	IBR			
add new paragraph; perform new determination when changes to generating source are likely to cause concentration to increase to level equal to or greater than limit specified in 264.1082	264.1083(a)(1)(ii)	7045.0549	IBR			
add new paragraph; average VO concentration of waste stream shall be determined before first time material in treated	264.1083(b)(1)(i)	7045.0549	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	waste stream is placed in exempt unit, thereafter update determination information at least once every 12 months; and						
	add new paragraph; perform new determination when process generating or treating waste stream changes are likely to cause concentration to increase such that 264.1082(c)(2) treatment conditions are not achieved	264.1083(b)(1)(ii)	7045.0549	IBR			
	STANDARDS: TANKS						
i	replace “in the event...unsafe condition” with “under either of the following conditions as specified in paragraph (h)(3)(i) or (h)(3)(ii) of this section”	264.1084(h)(3) intro	7045.0549	IBR			
	add new paragraph; when opening safety device is required to avoid unsafe condition	264.1084(h)(3)(i)	7045.0549	IBR			
	add new paragraph; when purging of inerts from tank is required and purge stream is routed to closed-vent system and control device designed & operated according to 264.1087	264.1084(h)(3)(ii)	7045.0549	IBR			
	STANDARDS: CONTAINERS						
	add new paragraph; transfer of hazardous waste in or out of container using Container Level 3 controls shall be conducted to minimize	264.1086(e)(6)	7045.0549	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
exposure to atmosphere; examples of acceptable container loading procedures						
PART 265 - INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES						
SUBPART CC - AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, AND CONTAINERS						
APPLICABILITY						
replace “generated” with “placed in the unit”; replace “the result” with “a result”; removed “RCRA” from after “under the”; insert “RCRA sections” before “3004(u)”; add comma after “3004(v)”; replace comma with semicolon after “3008(h)” and after “authorities”	265.1080(b)(5)	7045.0649	IBR			
WASTE DETERMINATION PROCEDURES						
add new paragraph; average VO concentration of waste stream shall be determined before first time material in hazardous waste stream is placed in unit exempted under 265.1083(c)(1) from using air emission controls, thereafter concentration shall be determined for each averaging period hazardous waste is managed in unit; and	265.1084(a)(1)(i)	7045.0649	IBR			
add new paragraph; perform new determination when changes to generating source are likely to cause concentration to increase to level equal to or greater	265.1084(a)(1)(ii)	7045.0649	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
than limit specified in 265.1083(c)(1)						
after first sentence, insert new sentence "All of the samples for a given waste determination shall be collected within a one-hour period."	265.1084(a)(3)(ii)(B)	7045.0649	IBR			
add new paragraph; sufficient information to document waste quantity and operating conditions represented by samples	265.1084(a)(3)(ii)(D)	7045.0649	IBR			
revise paragraph; analysis	265.1084(a)(3)(iii)	7045.0649	IBR			
add new paragraph; average VO concentration of waste stream shall be determined before first time material in treated waste stream is placed in exempt unit, thereafter update determination information at least once every 12 months; and	265.1084(b)(1)(i)	7045.0649	IBR			
add new paragraph; perform new determination when process generating or treating waste stream changes are likely to cause concentration to increase such that treatment conditions are not achieved	265.1084(b)(1)(ii)	7045.0649	IBR			
after first sentence, insert new sentence "All of the samples for a given waste determination shall be collected within a one-hour period."; remove "source or"; insert "or treating" after	265.1084(b)(3)(ii)(B)	7045.0649	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	"generating"						
	add new paragraph; sufficient information to document waste quantity and operating conditions represented by the samples	265.1084(b)(3)(ii)(D)	7045.0649	IBR			
	revise paragraph; analysis	265.1084(b)(3)(iii)	7045.0649	IBR			
	STANDARDS: TANKS						
1	replace "in the event...unsafe condition" with "under either of the following conditions as specified in paragraph (h)(3)(i) or (h)(3)(ii) of this section"	265.1085(h)(3)	7045.0649	IBR			
ii	add new paragraph; when opening safety device is required to avoid unsafe condition	265.1085(h)(3)(i)	7045.0649	IBR			
	add new paragraph; when purging of inerts from tank is required and purge stream is routed to closed-vent system and control device designed & operated according to 265.1088	265.1085(h)(3)(ii)	7045.0649	IBR			
	STANDARDS: CONTAINERS						
	add new paragraph; transfer of hazardous waste in or out of container using Container Level 3 controls shall be conducted to minimize exposure to atmosphere; examples of acceptable container loading procedures	265.1087(e)(6)	7045.0649	IBR			

---

i There is a typographical error in the revised paragraphs: “under either or the following conditions” should be “under either <u>of</u> the following conditions”.

ii States should be sure to add a new paragraph at 265.1085(h)(3)(i), and not replace 265.1085(i), which currently follows 265.1085(h)(3).

RCRA REVISION CHECKLIST 179

Land Disposal Restrictions Phase IV -- Technical Corrections
and Clarifications to Treatment Standards
64 FR 25408-25417
May 11, 1999
(RCRA Cluster IX, HSWA/non-HSWA provisions)

Note that the revisions to 262.34(d)(4), 268.2(h), 268.2(k), 268.7(a)(4)/table, 268.7(b)(3)(ii)/Table, 268.7(b)(4)(iv), 268.9(d)(2) intro, 268.9(d)(2)(i), 268.40(i), 268.40(j), 268.40/Table, 268.48(a)/Table, 268.49(c)(3) intro, 268.49(c)(3)(A)&(B) were made pursuant to HSWA. The revisions to 261.2(c)(3), 261.2(c)(4)/Table, 261.2(e)(1)(iii), first paragraph 261.4(a)(16), 261.4(a)(17) introductory paragraph, 261.4(a)(17)(v), and 261.4(b)(7)(iii)&(iii)(A) were made relative to non-HSWA authority. Those provisions designated as HSWA are identified by a " ♦" (diamond symbol) in this checklist.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART A - GENERAL						
	DEFINITION OF SOLID WASTE						
i	replace both references to "40 CFR 261.4(a)(15)" to "40 CFR 261.4(a)(17)"	261.2(c)(3)	Minnesota Statutes, section 116.06, subdivision 11	X			
1	in heading of column 3 of Table 1 replace "261.4(a)(15)" with "261.4(a)(17)"	261.2(c)(4)/Table	Minnesota Statutes, section 116.06, subdivision 11	X			
ii	reinsert language at beginning of paragraph: "Returned to the original process....no placement on land; in the existing sentence replace reference to "§ 261.4(a)(15)" with "§ 261.4(a)(17)"	261.2(e)(1)(iii)	Minnesota Statutes, section 116.06, subdivision 11	X			
	EXCLUSIONS						
iii,iv	redesignate first paragraph 261.4(a)(16) as 261.4(a)(17)	first paragraph 261.4(a)(16)	7045.0120, 1, X	X			
3	insert "or by beneficiation" after "by mineral processing"	261.4(a)(17) intro	7045.0120, 1, X CL 199.3 supercedes	X			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
3	insert “non” before “land-based units”	261.4(a)(17)(v)	7045.0120, 1, X, (5) CL 199.3 supercedes	X			
	insert “or with normal mineral processing raw materials” after “beneficiation raw materials”	261.4(b)(7)(iii)	7045.0120, 1, I	X			
	insert “or normal mineral processing raw materials after “beneficiation raw materials”	261.4(b)(7)(iii)(A)	7045.0120, 1, I	X			
	PART 262 - STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE						
	SUBPART C - PRE-TRANSPORT REQUIREMENTS						
	ACCUMULATION TIME						
♦,†★	replace reference “40 CFR 268.7(a)(4)” with “40 CFR 268.7(a)(5)”	262.34(d)(4)	7045.0292, 5, G	X			
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	SUBPART A - GENERAL						
	DEFINITIONS APPLICABLE IN THIS PART						
♦	at end of paragraph add “Any deliberate mixing of prohibited hazardous waste with debris that changes its treatment classification (i.e., from waste to hazardous debris) is not allowed under the dilution prohibition in § 268.3.”	268.2(h)	7045.1390	Incorporated by reference (IBR)			
♦,†★	add “Natural Resources” before “Conservation Service”; at end of paragraph add “Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (i.e., from waste to contaminated	268.2(k)		IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	soil) is not allowed under the dilution prohibition in Sec. 268.3."						
	TESTING, TRACKING , AND RECORDKEEPING REQUIREMENTS FOR GENERATORS, TREATERS, AND DISPOSAL FACILITIES						
♦,†★ v	in the "Generator Paperwork Requirements Table" revise entry 1. by adding a " _" in columns 1, 2 and 4; revise entry 3. by adding a " _" in column 2; and revise entry 8. by adding a "_" in column 2	268.7(a)(4)/Table		IBR			
♦	in the "Treatment Facility Paperwork Requirements Table" revise entry 1. by placing a " _" in the column titled § 268.7(b)	268.7(b)(3)(ii)\Table		IBR			
♦,†★	remove "required" from before "method of treatment"; insert ", or § 268.49, and," after "method of treatment)"; remove "are reasonably expected to" before "contain underlying"; insert "if these wastes" before "are treated on-site"; insert "or 268.49" after "40 CFR 268.40"; remove "universal" from before "treatment standards."	268.7(b)(4)(iv)		IBR			
	SPECIAL RULES REGARDING WASTES THAT EXHIBIT A CHARACTERISTIC						
♦,†★	replace reference to "§268.7(b)(5)" with "§268.7(b)(4)"	268.9(d)(2) intro		IBR			
♦,†★	replace "but does not treat" with "but does not meet standards applicable to"; replace reference to "§ 268.7(b)(5)(iv)" with	268.9(d)(2)(i)		IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	268.7(b)(4)(iv)"						
	SUBPART D - TREATMENT STANDARDS						
	APPLICABLIITY OF TREATMENT STANDARDS						
♦,vi	revise first 268.40(i); replace "Zinc-containing fertilizers" with "Zinc micronutrient fertilizers"	first 268.40(i)		IBR			
♦,6	redesignate second 268.40(i) as 268.40(j)	second 268.40(i)		IBR			
♦,6	redesignated from second 268.40(i)	268.40(j)		IBR			
♦,vii	revise the entries for K088, K156, K159, P194, U404 and U408, and footnotes 8 and 11 to read as follows:	268.40/Table		IBR			

Comment: Table: Treatment Standards for Hazardous Wastes

TREATMENT STANDARDS FOR HAZARDOUS WASTES
[Note: NA means not applicable]

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or Technology Code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code
K088	Spent potliners from primary aluminum reduction.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene	205-99-2	0.11	6.8
		Benzo(k)fluoranthene	207-08-9	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3,-c,d)pyrene	193-39-5	0.0055	3.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	26.1 mg/l TCLP
		Barium	7440-39-3	1.2	21 mg/l TCLP
		Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES
[Note: NA means not applicable]

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common Name	CAS[2] No.	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
		Silver	7440-22-4	0.43	0..14 mg/l TCLP
		Cyanide (Total)[7]	57-12-5	1.2	590
		Cyanide (Amenable)[7]	57-12-5	0.86	30
		Fluoride	16984-48-8	35	NA
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. [10]	Acetonitrile	75-05-8	5.6	18
		Acetophenone	96-86-2	0.010	9.7
		Aniline	62-53-3	0.81	14
		Benomyl	17804-35-2	0.056	1.4
		Benzene	71-43-2	0.14	10
		Carbaryl	63-25-2	0.006	0.14
		Carbenzadim	10605-21-7	0.056	1.4
		Carbofuran	1563-66-2	0.006	0.14
		Carbosulfan	55285-14-8	0.028	1.4
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Methomyl	16752-77-5	0.028	0.14
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyridine	110-86-1	0.014	16
		Toluene	108-88-3	0.080	10
		Triethylamine	121-44-8	0.081	1.5
*	*	*	*	*	*
K159	Organics from the treatment of thiocarbamate wastes. [10]	Benzene	71-43-2	0.14	10
		Butylate	2008-41-5	0.042	1.4
		EPTC (Eptam)	759-94-4	0.042	1.4
		Molinate	2212-67-1	0.042	1.4
		Pebulate	1114-71-2	0.042	1.4
		Vernolate	1929-77-7	0.042	1.4
*	*	*	*	*	*
P194	Oxamyl	Oxamyl	23135-22-0	0.056	0.28
*	*	*	*	*	*
U404	Triethylamine	Triethylamine	121-44-8	0.081	1.5
*	*	*	*	*	*

TREATMENT STANDARDS FOR HAZARDOUS WASTES
[Note: NA means not applicable]

Waste Code	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent: Common Name	Regulated Hazardous Constituent: CAS[2] No.	Wastewaters: Concentration in mg/l[3]; or Technology Code[4]	Nonwastewaters: Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code
U408	2,4,6-Tribomophenol	2,4,6-Tribomophenol	118-79-6	0.035	7.4
*	*	*	*	*	*

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in § 268.42 Table 1--Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in § 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * * * *

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

* * * * * * *

[8] These wastes, when rendered nonhazardous and then subsequently managed in CWA, or CWA-equivalent systems are not subject to treatment standards. (See § 268.1(c) (3) and (4)).

* * * * * * *

[10] The treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST at §268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1 of this part, for wastewaters.

[11] For these wastes, the definition of CMBST is limited to: (1) combustion units operating under 40 CFR 266, (2) combustion units permitted under 40 CFR Part 264, Subpart O, or (3) combustion units operating under 40 CFR 265, Subpart O, which have obtained a determination of equivalent treatment under 268.42(b).

RCRA REVISION CHECKLIST 179: Land Disposal Restrictions Phase IV -- Technical Corrections and Clarifications to Treatment Standards (cont'd)

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	UNIVERSAL TREATMENT STANDARDS						
♦,viii	add footnote number 6 in column one, under the heading Regulated Constituents/Common Name, after the following chemical names: "Aldicarb sulfone", "Barban," "Bendiocarb," "Benomyl," "Butylate," "Carbaryl," "Carbenzadim," "Carbofuran," "Carbofuran- phenol," "Carbosulfan," "m-Cumenyl-methylcarbamate," "Dithiocarbamates (total)," "EPTC," "Formetanate hydrochloride," "Methiocarb," "Methomyl," "Metolcarb," "Mexacarbate," "Molinate," "Oxamyl," "Pebulate,""Physostigmine," "Physostigmine salicylate," "Promecarb," "Propham," "Propoxur," "Prosulfocarb," "Thiodicarb," "Thiophanate-methyl," "Triallate," "Triethylamine," and "Vernolate;"; add footnote 6 "6. Between August 26, 1998 and March 4, 1999, these constituents are not "underlying hazardous constituents" as defined in Sec. 268.2(i) of this part."	268.48(a)/Table		IBR			
	ALTERNATIVE LDR TREATMENT STANDARDS FOR CONTAMINATED SOIL						

RCRA REVISION CHECKLIST 179: Land Disposal Restrictions Phase IV -- Technical Corrections and Clarifications to Treatment Standards (cont'd)

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
♦,†★	no revision made	268.49(c)(3) intro		IBR			
♦,†★	replace "also contains analyzable constituents," with "contains only analyzable and nonanalyzable organic constituents,"; replace "treatment of those analyzable constituents" with "treatment of the analyzable organic constituents"	268.49(c)(3)(A)		IBR			
♦,†★	replace "method specified" with "method(s) specified"	268.49(c)(3)(B)		IBR			

†★ These changes are conditionally optional. If the State has adopted the optional revisions to the recordkeeping and paperwork requirements in Revision Checklist 157 and 167 C, then the State is required to adopt the changes to 262.34(d)(4), 268.7(a)(4)/Table (entries 1 and 3), 268.7(b)(3)(ii)/Table, 268.9(d)(2) intro, and 268.9(d)(2)(i) in this checklist. Also, if the State has adopted the optional treatment standards for contaminated soils in Revision Checklists 167 B, then the State is required to adopt the changes to 268.2(k), 268.7(a)(4)/Table (entry 8), 268.7(b)(4)(iv), and 268.49 in this checklist.

---

i The provisions at 261.2 that are amended by this checklist were introduced by Revision Checklist 167 D. Note that EPA has withdrawn Revision Checklist 167 D to conform with a vacatur by the U.S. D.C. Circuit Court of Appeals. States should refer to EPA's guidance on the summary for Revision Checklists 167A-E for information on how to deal with the vacatur.

ii The May 26, 1998 (CL 167D) rule inadvertently removed the provision language at § 261.2(e)(1)(iii) and replaced it with the additional language which was intended to be added at the end of the paragraph. The original language has been reinserted by Revision Checklist 179 at the beginning of the paragraph, and the May 26, 1998 (CL 167D) addition (now the last sentence of the provision) has been revised to indicate the correct internal reference. Note, however, that EPA has withdrawn Revision Checklist 167 D to conform with a vacatur by the U.S. D.C. Circuit Court of Appeals as explained in endnote 1.

iii Paragraph 261.4(a)(16) was added by 63 FR 28556 (May 26, 1998, Revision Checklist 167 D). A second paragraph 261.4(a)(16) was added in error by the 63 FR 33782 (June 19, 1998, Revision Checklist 168) rule. The first paragraph 261.4(a)(16) was redesignated by the May 11, 1999 (64 FR 25408, Revision Checklist 179) rule as

261.4(a)(17). Note, however, that EPA has withdrawn Revision Checklist 167 D to conform with a vacatur by the U.S. D.C. Circuit Court of Appeals as explained in endnote 1.

iv A typographical error exists at the redesignated § 261.4(a)(17)(iii). The internal reference "paragraph (a)(15)(iv)" should be "paragraph (a)(17)(iv)". Note, however, that EPA has withdrawn Revision Checklist 167 D to conform with a vacatur by the U.S. D.C. Circuit Court of Appeals as explained in endnote 1.

v The changes to entry 8 in the 268.7(a)(4)/Table are only applicable to State's that adopted the optional requirements for contaminated soils in Revision Checklist 167 B. The other changes to this table should be made by States that have adopted the optional revisions to the recordkeeping and paperwork requirements in Revision Checklists 157 and 167C.

vi Paragraph 268.40(i) was added by 63 FR 46332-46334 (August 31, 1998, Revision Checklist 170) and a second paragraph 268.40(i) was added 63 FR 47410-47418 (September 4, 1998, Revision Checklist 171). The instructions for the 64 FR 25408 rule (May 11, 1999, Revision Checklist 179) indicate that the first paragraph (i) is redesignated as 268.40(j) and that paragraph (i) is revised. The rule addressed by Revision Checklist 179 should have redesignated the second paragraph (i) as (j) and revised the first paragraph (i). The October 20, 1999 final rule (64 FR 56469; Revision Checklist 183) corrected this error by replacing paragraph (j) with the old second paragraph (i).

vii Revision Checklist 165 added U408 to the 268.40 table. Revision Checklist 165 has been withdrawn, and the U408 entry removed; therefore, only States retaining the Revision Checklist 165 provisions should made the Revision Checklist 179 revisions to the U408 entry. The May 11, 1999 rule (64 FR 25416, Revision Checklist 179, contains typographical errors at the K156 and K159 entries. These netires should not include footnote 10.

viii 63 FR 47410-47418 (September 4, 1998, Revision Checklist 171) incorrectly removed footnote 6 from 268.48(a)/table. The footnote has been reinserted by Revision Checklist 179 (May 11, 1999, 64 FR 25408).

RCRA REVISION CHECKLIST 183

Land Disposal Restrictions Phase IV -- Technical Corrections
64 FR 56469-56472
October 20, 1999
(RCRA Cluster X, HSWA/Non-HSWA)

Note that the revisions to 262.34(a)(4), 268.7(a)(3)(iii), 268.40(j), 268.40 Table, 268.49(c)(1)(A) and 268.49(c)(1)(B) were made pursuant to HSWA. The revisions to 261.32 were made relative to non-HSWA authority. Those provisions designated as HSWA are identified by a "♦" (diamond symbol) in this checklist.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 – IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART D – LISTS OF HAZARDOUS WASTES						
	HAZARDOUS WASTES FROM SPECIFIC SOURCES						
i,†	remove entries for K064, K065, K066, K090 and K091	261.32	7045.0135, 1a, C	Incorporated by reference (IBR)			
	PART 262 – STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE						
	SUBPART C – PRE-TRANSPORT REQUIREMENTS						
	ACCUMULATION TIME						
†★,♦	replace "268.7(a)(4)" with "268.7(a)(5)"	262.34(a)(4)	7045.0292, 1, G	X			
	PART 268 – LAND DISPOSAL RESTRICTIONS						
	SUBPART A – GENERAL						
	TESTING, TRACKING, AND RECORDKEEPING REQUIREMENTS FOR GENERATORS, TREATERS, AND DISPOSAL FACILITIES						
†★,♦	add new paragraph; if waste changes, generator must send new notice & certification to receiving facility, & place copy in files; generators excluded under 261.3(f) are not subject to these	268.7(a)(3)(iii)	7045.1390	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	requirements						
	SUBPART D - TREATMENT STANDARDS						
	APPLICABILITY OF TREATMENT STANDARDS						
♦	replace old 268.40(j) with new paragraph; effective September 4, 1998, treatment standards for certain "P" and "U" wastes specified in 261.33 may be satisfied by either meeting constituent concentrations in "Treatment Standards for Hazardous Wastes" table, or by treating the waste by technologies specified	268.40(j)		IBR			
ii,♦	revise K088 entry as shown at 64 FR 56471	268.40/Table		IBR			
	ALTERNATIVE LDR TREATMENT STANDARDS FOR CONTAMINATED SOIL						
†★,♦	add "except carbon disulfide, cyclohexanone, and methanol"after "non-metals"	268.49(c)(1)(A)		IBR			
†★,♦	add "and carbon disulfide, cyclohexanone, and methanol"after "metals"	268.49(c)(1)(B)		IBR			

†★ These changes are conditionally optional. If the State has adopted the optional revisions to the recordkeeping and paperwork requirements in Revision Checklist 157, then the State is required to adopt the change to 262.34(a)(4) in this checklist. Also, if the State has adopted the optional treatment standards for contaminated soils in Revision Checklists 167 B, then the State is required to adopt the changes to 268.7(a)(3) and 268.49(c)(1) in this checklist.

[i] The listings of K064, K065, K066, K090, and K091 were initially added to the Federal code by the September 12, 1988 final rule addressed by Revision Checklist 53 (53 FR 35412). However, the listings were remanded by the U.S. Court of Appeals for the D.C. Circuit in American Mining Congress v. EPA, 907 F.2d 1179 (D.C. Cir. 1990). As such, Revision Checklist 53 was modified to not include the addition of these listings. Therefore, States may never have added these listings to their regulations.

[ii] There are typographical errors in the K088 entry at 64 FR 56471. "Benz(a)anthracene" should be "Benzo(a)anthracene" and "Indeno(1,2,3,-c,d)pyrene" should be "Indeno(1,2,3-cd)pyrene". The second error was in the Federal code prior to this checklist.

RCRA REVISION CHECKLIST 185

Organobromine Production Wastes Vacatur
65 FR 14472-14475
March 17, 2000
(RCRA Cluster X, HSWA)

Notes: 1) The rule addressed by this checklist also makes changes to 40 CFR Part 148 (addressing Underground Injection Programs) and 40 CFR Part 302 (addressing Reportable Quantities under CERCLA). These changes are outside the RCRA Subtitle C program and are not addressed by this revision checklist.

2) The rule addressed by this checklist vacates the May 4, 1998 listing of K140 and U408 wastes (64 FR 24596; Revision Checklist 165) to conform with an order issued by the U.S. Court of Appeals for the D.C. Circuit in *Great Lakes Chemical Corporation v. EPA* (Docket No. 98-1312). States that have not adopted Revision Checklist 165, do not need to adopt Revision Checklist 185. For States that have adopted Revision Checklist 165, Revision Checklist 185 is optional. A State may decide to be broader in scope than the Federal program..

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART D - LISTS OF HAZARDOUS WASTES						
	HAZARDOUS WASTES FROM SPECIFIC SOURCES						
†	revise table by removing the K140 entry in the "Organic Chemicals" subgroup	261.32/table	7045.0135, 1a, C	Incorporated by reference (IBR)			
	DISCARDED COMMERCIAL CHEMICAL PRODUCTS, OFF-SPECIFICATION SPECIES, CONTAINER RESIDUES, AND SPILL RESIDUES THEREOF						
†	revise table by removing the U408 (2,4,6-Tribromophenol) entry	261.33(f)/table	7045.0135, 1a, D	IBR			
	PART 261 - APPENDIX VII						
	BASIS FOR LISTING HAZARDOUS WASTE						
†	revise appendix by removing the K140 entry	261 Appendix VII	~~7045.0135, 1a, M~~ 7045.0150, 1, D	IBR			
	PART 261 - APPENDIX VIII						
	HAZARDOUS CONSTITUENTS						
†	revise appendix by	261 Appendix VIII	7045.0150, 1, E	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	removing the 2,4,6-Tribromophenol entry		~~7045.0135, 1, N~~				
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	SUBPART C - PROHIBITIONS ON LAND DISPOSAL						
	WASTE-SPECIFIC PROHIBITIONS-ORGANOBROMINE WASTES						
†	remove and reserve	268.33	7045.1390	IBR			
	SUBPART D - TREATMENT STANDARDS						
	APPLICABILITY OF TREATMENT STANDARDS						
†	revise table by removing the K140 and U408 entries	268.40/table	7045.1390	IBR			
	UNIVERSAL TREATMENT STANDARDS						
†	revise table by removing the 2,4,6-Tribromophenol entry	268.48(a)/table	7045.1390	IBR			

RCRA REVISION CHECKLIST 187

Petroleum Refining Process Wastes – Clarification
64 FR 36365-36367
June 8, 2000
(RCRA Cluster X, HSWA provisions)

Note: The rule addressed by this checklist makes changes to 40 CFR Part 148 addressing Hazardous Waste Injection Restrictions. These changes are outside the RCRA Subtitle C program and are not addressed by this revision checklist.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 - IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART D - LISTS OF HAZARDOUS WASTES						
	HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES						
†★	revise the entry for F037 by replacing in the second sentence "flow, sludge" with "flow. Sludge"	261.31(a)/table	7045.0135, 1a, B				
	PART 268 - LAND DISPOSAL RESTRICTIONS						
	APPENDIX VII TO PART 268						
	LDR EFFECTIVE DATES OF SURFACE DISPOSED PROHIBITED HAZARDOUS WASTES						
i	unchanged	268 Appendix VII	7045.1390	Incorporated by reference (IBR)			

†★ This change is conditionally optional. If the State has adopted the optional revised description of waste F037 in Revision Checklist 169, then the State is required to adopt the change to F037 in 261.31(a)/table in this checklist.

[i] Note that in the preamble to the June 8, 2000 rule, it states that the Agency neglected to delete the reference to U408 in Appendix VII of 40 CFR Part 268 in the March 17, 2000 rule (65 FR 14472; Revision Checklist 185). However, there was no entry for U408 in that Appendix. The actual amendment for the rule incorrectly removes the entry for U048 from Appendix VII to 40 CFR Part 268. Therefore, States should not adopt any changes to this

Appendix. This error was corrected by Revision Checklist 192B (66 FR 27266, May 16, 2001).

RCRA REVISION CHECKLIST 189

Chlorinated Aliphatics Listing and LDRs for Newly Identified Wastes
65 FR 67068-67133
November 8, 2000
(RCRA Cluster XI, HSWA)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 – IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART D – LISTS OF HAZARDOUS WASTES						
HAZARDOUS WASTES FROM SPECIFIC SOURCES						
add following waste streams to subgroup "Organic chemicals" in alphanumeric order	261.32	7045.0135, 1a, C	Incorporated by reference (IBR)			

Industry and EPA hazardous waste No.	Hazardous Waste	Hazard code
* * * * * * * * * * * *		
Organic chemicals:		
* * * * * * * * * * * *		
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (*e.g.*, contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, *etc*.) that the terms of the exclusion were met.	(T)
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	(T)
* * * * * * * * * * * *		

APPENDIX VII TO PART 261

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
BASIS FOR LISTING HAZARDOUS WASTE						
i add to appendix in alphanumeric order, the following waste streams	261 Appendix VII	7045.0150, 1, D ~~7045.0135, 1, M~~	IBR			

Formatted: Underline

EPA hazardous waste No.	Hazardous constituents for which listed
* * * * * * * * * * * *	
K174	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD), 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF), 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,6,7,8,9-HpCDF), HxCDDs (All Hexachlorodibenzo-p-dioxins), HxCDFs (All Hexachlorodibenzofurans), PeCDDs (All Pentachlorodibenzo-p-dioxins), OCDD (1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin), OCDF (1,2,3,4,6,7,8,9-Octachlorodibenzofuran), PeCDFs (All Pentachlorodibenzofurans), TCDDs (All Tetrachlorodibenzo-p-dioxins), TCDFs (All Tetrachlorodibenzofurans).
K175	Mercury
* * * * * * * * * * * *	

APPENDIX VIII TO PART 261						
HAZARDOUS CONSTITUENTS						
add to appendix in alphabetical order, the following entries	261 Appendix VIII	~~7045.0135, 1, N~~ 7045.0150, 1, E	IBR			

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * * * * * * * * * * *			
Octachlorodibenzo-p-dioxin (OCDD).	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9	.....
Octachlorodibenzofuran (OCDF).	1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0	.....
* * * * * * * * * * * *			

PART 268 – LAND DISPOSAL RESTRICTIONS

SUBPART C – PROHIBITIONS ON LAND DISPOSAL

ii WASTE SPECIFIC PROHIBITIONS -- CHLORINATED ALIPHATIC WASTES						
add new paragraph; effective May 8, 2001, wastes K174 and K175, soil and debris contaminated with these	268.33(a)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal						
add new paragraph; requirements of 268.33(a) do not apply if:	268.33(b) intro	7045.1390	IBR			
wastes meet treatment standards specified in 268 subpart D;	268.33(b)(1)	7045.1390	IBR			
exemption from a prohibition pursuant to petition granted under 268.6, with respect to wastes and units covered by the petition;	268.33(b)(2)	7045.1390	IBR			
wastes meet treatment standards established pursuant to petition granted under 268.44;	268.33(b)(3)	7045.1390	IBR			
hazardous debris has met treatment standards in 268.40 or alternative treatment standards in 268.45; or	268.33(b)(4)	7045.1390	IBR			
extension to effective date of prohibition granted pursuant to 268.5, with respect to wastes covered by extension	268.33(b)(5)	7045.1390	IBR			
add new paragraph; to determine if identified hazardous waste exceeds 268.40 treatment standards, initial generator must test waste, or use knowledge of waste; if waste contains regulated	268.33(c)	7045.1390	IBR			

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
constituents in excess of 268 subpart D levels, waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified						
add new paragraph; disposal of K175 wastes complying with 268.40 treatment standards must also be macroencapsulated in accordance with 268.45 Table 1 unless waste is placed in:	268.33(d) intro	7045.1390	IBR			
Subtitle C monofill containing only applicable K175 wastes that meet 268.40 treatment standards; or	268.33(d)(1)	7045.1390	IBR			
dedicated Subtitle C landfill cell in which other co-disposed wastes are at pH≤6.0	268.33(d)(2)	7045.1390	IBR			
SUBPART D – TREATMENT STANDARDS						
APPLICABILITY OF TREATMENT STANDARDS						
iii add entries to F039 in alphabetic order, add in alphanumeric order new entries for K174 and K175, and add new footnote 12 as shown at 65 FR 67128-67131	268.40/Table	7045.1390	IBR			
UNIVERSAL TREATMENT STANDARDS						
iv add following to the subgroup *"Organic Constituents"* in alphabetical order	268.48(a)/Table	7045.1390	IBR			

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable

REGULATED CONSTITUENT	CAS[1] Number	Wastewater	Nonwastewater

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
Common Name			Standard Concentration in mg/l[2]		Standard Concentration in mg/kg[3] unless noted as "mg/l TCLP"	
* * * * * *	*	* *	* *	*		
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD).....		35822-46-9	0.000035		0.0025	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)		67562-39-4	0.000035		0.0025	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)		55673-89-7	0.000035		0.0025	
* * * * * *	*	* *	* *	*		
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)		3268-87-9	0.000063		0.005	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)		39001-02-0	0.000063		0.005	
* * * * * *	*	* *	* *	*		

[i] Note the following typographical errors in the November 8, 2000 rule, in the entry for K174 on page 67127:

- There should be a closing bracket following "Octachlorodibenzo-p-dioxin" in line 4 of the "Hazardous constituents for which listed" column;
- There should not be a hyphenation between "tetrachlorodi" and "benzo-p-dioxins" in line 5 of the "Hazardous constituents for which listed" column; and
- Both "tetrachlororodibenzo-p-dioxins" and "tetrachlorodibenzofurans" should be initially capitalized as with other constituents, in line 5 of the "Hazardous constituents for which listed" column.

[ii] This is a new section added by the 65 FR 67068 (November 8, 2000) rule. Originally, 268.33 dealt with "Waste Specific Prohibitions – First Third Wastes," but pursuant to 62 FR 25998-26040 (May 12, 1997; Revision Checklist 157), the section was removed and reserved effective August 11, 1997. Revision Checklist 165 (63 FR 24596; May 4, 1998) added a new section at 268.33 but this rule was vacated on April 9, 1999. The July 1, 2000 CFR reserved section 268.33.

[iii] Note that in addition to adding a new footnote 12 to the table, the November 8, 2000 rule (Revision Checklist 189) also republished footnotes 1-5 and 11. The only changes to these footnotes were revising upper case "Part" and "Subpart" to lower case "part" and "subpart" in footnotes 5 and 11.

[iv] Note that although the amendatory language states the footnotes are republished without change, "mg/l" is incorrectly revised to "mg/L" in footnote 2. Also note that lower case "part" and "subpart" were incorrectly revised to upper case "Part" and "Subpart" in footnote 3. States should not adopt these revisions.

RCRA REVISION CHECKLIST 190

Land Disposal Restrictions Phase IV -- Deferral for PCBs in Soil
65 FR 81373-81381
December 26, 2000
(RCRA Cluster XI, HSWA)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 – LAND DISPOSAL RESTRICTIONS						
SUBPART C – PROHIBITIONS ON LAND DISPOSAL						
† WASTE SPECIFIC PROHIBITIONS -- SOILS EXHIBITING THE TOXICITY CHARACTERISTIC FOR METALS AND CONTAINING PCBS						
add new paragraph; effective December 26, 2000, the following wastes are prohibited from land disposal: soil exhibiting the toxicity characteristic solely because of metals (D004-D011) and containing PCBs	268.32(a)	7045.1390	Incorporated by reference (IBR)			
requirements of 268.32(a) do not apply if:	268.32(b) intro	7045.1390	IBR			
wastes contain halogenated organic compounds in total concentration less than 1,000 mg/kg; and	268.32(b)(1)(i)	7045.1390	IBR			
wastes meet 268 subpart D treatment standards for D004-D011, as applicable; or	268.32(b)(1)(ii)	7045.1390	IBR			
wastes contain halogenated organic compounds in total concentration less than 1,000 mg/kg; and	268.32(b)(2)(i)	7045.1390	IBR			
wastes meet 268.49 alternative treatment standards for contaminated	268.32(b)(2)(ii)	7045.1390	IBR			

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS: EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	soil; or						
	persons have been granted an extension from prohibition pursuant to 268.6 with respect to wastes and units covered by petition; or	268.32(b)(3)	7045.1390	IBR			
	wastes meet alternative treatment standards pursuant to 268.44 petition	268.32(b)(4)	7045.1390	IBR			
	SUBPART D – TREATMENT STANDARDS						
	UNIVERSAL TREATMENT STANDARDS						
†	add reference to new footnote “8” to “Total PCBs (sum of all PCB isomers, or all Aroclors)” entry; add new footnote “8” as shown at 65 FR 81381 (December 26, 2000)	268.48(a)/Table UTS	7045.1390	IBR			
	ALTERNATIVE LDR TREATMENT STANDARDS FOR CONTAMINATED SOIL						
†,i	replace “40 CFR” with “§”; remove comma after “268.48"; replace “and” with a comma after “vanadium”; insert “that” after “zinc, and”; at end of paragraph insert new sentence: PCBs are not a constituent subject to treatment in soil which exhibits the toxicity characteristic solely because of metals	268.49(d)	7045.1390	IBR			
	APPENDIX III TO PART 268						
†,ii	add new appendix: “List of Halogenated Organic Compounds Regulated Under § 268.32"	Appendix III	7045.1390	IBR			

† Optional.

[i] There is a typographical error in the December 26, 2000 rule (65 FR 81373; Revision Checklist 190). "PCBs are not constituent subject to treatment" should be "PCBs are not a constituent subject to treatment".

[ii] The amendatory language in the December 26, 2000 rule (65 FR 81373; Revision Checklist 190) erroneously states "Appendix III to Part 268 is added to subpart C". Appendix III should instead be added to the section reserved for it at the end of Part 268.

RCRA REVISION CHECKLIST 192 A

Mixture and Derived-From Rules Revisions
66 FR 27266-27297
May 16, 2001
(RCRA Cluster XI, HSWA/Non-HSWA)

Name of State:

State Statutory Authority:

Title of Regulations: _____ Effective Date:

Date Checklist Completed:

Notes: The revisions to 40 CFR 261.3(g) and 261.3(h)(1)-(3) are promulgated pursuant to HSWA. The HSWA revisions are considered less stringent than the existing Federal regulations and therefore, are immediately effective only in those States not authorized for the base RCRA program. The revisions to 40 CFR 261.3(a)(2)(iii) and (iv), and 261.3(c)(2)(i) are promulgated pursuant to non-HSWA authorities and do not go into effect in an authorized State until the State adopts and receives authorization for the revisions. HSWA provisions are identified by a "✠" (diamond symbol) in this checklist.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 – IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART A – GENERAL						
	DEFINITION OF HAZARDOUS WASTE						
	remove and reserve	261.3(a)(2)(iii)	7045.0102, 2, B deleted and "Reserved"	X			
†	replace "§§" with "40 CFR"; replace "of this chapter" with ", paragraph (g) of this section, or paragraph (h) of this section"; replace ending colon with semicolon	261.3(a)(2)(iv)	7045.0102, 2, G	X			
†,[1]	insert ", (g) or (h)" after "(c)(2)(ii)"	261.3(c)(2)(i)	7045.0214, 3, A	X			

[1] There is a typographical error in the May 16, 2001 rule (66 FR 27266; May 16, 2001). States should not remove the comma following "ash". The phrase should continue to read "...spill residue, ash, emission control dust, ...".

⌘	add new subparagraph; listed hazardous waste solely because it exhibits one or more characteristic, is not a hazardous waste, if characteristics are no longer exhibited	261.3(g)(1)	7045.0102, 2, A	X			
⌘	261.3(g)(1) exclusion also pertains to:	261.3(g)(2)	7045.0102, 2, I, (2)	X			
⌘	wastes excluded	261.3(g)(2)(i)	7045.0102, 2, I, (2), (a)	X			
		261.3(g)(2)(ii)	7045.0102, 2, I, (2), (b)	X			
⌘	wastes excluded are subject to 268, even if no longer exhibit characteristic at point of land disposal	261.3(g)(3)	7045.0102, 2, I, (3)	X			
†,⌘	add new subparagraph; hazardous waste containing radioactive waste is no longer a hazardous waste	261.3(h)(1)	7045.0120, 2, G	X			
†,⌘	exemption also pertains to:	261.3(h)(2)	7045.0120, 2, G	X			
†,⌘	wastes excluded	261.3(h)(2)(i)	7045.0120, 2, G, (1)	X			
		261.3(h)(2)(ii)	7045.0120, 2, G, (2)	X			
†,⌘	waste exempted must meet storage and transportation criteria; waste that fails is regulated as hazardous	261.3(h)(3)	7045.0120, 2, G	X			

† Optional.

RCRA REVISION CHECKLIST 192 B

Land Disposal Restrictions Correction
66 FR 27266-27297
May 16, 2001
(RCRA Cluster XI, HSWA)

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 268 – LAND DISPOSAL RESTRICTIONS						
APPENDIX VII TO PART 268						
LDR EFFECTIVE DATES OF SURFACE DISPOSED PROHIBITED HAZARDOUS WASTES						
revise Table 1 by adding an entry for U048 as shown at 66 FR 27297	Appendix VII, Table 1	7045.1390	Incorporated by reference (IBR)			

.

RCRA REVISION CHECKLIST 194

Mixture and Derived-From Rules Revision II
66 FR 50332-50334
October 3, 2001
(RCRA Cluster XII, HSWA/Non-HSWA)

Name of State:

State Statutory Authority:

Title of Regulations: _____ Effective Date:

Date Checklist Completed:

Notes: The addition of 40 CFR 261.3(g)(4) is promulgated pursuant to HSWA. The HSWA revision is considered less stringent than the existing Federal regulations and, therefore, is immediately effective only in those States not authorized for the base RCRA program. HSWA provisions are identified by a "⌘" (diamond symbol) in this checklist.

FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
			EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
PART 261 – IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
SUBPART A – GENERAL						
DEFINITION OF HAZARDOUS WASTE						

[1]Note that in the on-line version of the 2001 CFR, 40 CFR 261.3(a)(2)(iv) intro does not include the revisions from the May 16, 2001 rule but it does include subparagraphs (A)-(G).,†	unchanged even though included in this rule	261.3(a)(2)(iv)	7045.0102, 2, F	X			

[1] The October 3, 2001 rule contains potentially confusing information. In the preamble (p. 50332), it states that EPA inadvertently deleted subparagraphs A-G of 40 CFR 261.3(a)(2)(iv) in the May 16, 2001 rule (Revision Checklist 192 A) and is, therefore, reinserting the deleted subparagraphs. Additionally, on page 50333, the amendatory language states that 40 CFR 261.3 is amended by revising paragraph (a)(2)(iv). However, the May 16, 2001 rule does not contain instructions to remove 40 CFR 261.3(a)(2)(iv)(A)-(G). In comparison to the May 16, 2001 rule, the October 3, 2001 rule merely reprints 40 CFR 261.3(a)(2)(iv) intro and subparagraphs (a)(2)(iv)(A)-(G) unchanged.

		261.3(a)(2)(iv)(A)	7045.0102, 2, F, (1)	X			
		261.3(a)(2)(iv)(B)	7045.0102, 2, F, (2)	X			
		261.3(a)(2)(iv)(C)	7045.0102, 2, F, (3)	X			
		261.3(a)(2)(iv)(D)	7045.0102, 2, F, (4)	X			
		261.3(a)(2)(iv)(E)	7045.0102, 2, F, (5)	X			
		261.3(a)(2)(iv)(F)	7045.0102, 2, F, (6)	X			
		261.3(a)(2)(iv)(G)	7045.0102, 2, F, (7)	X			
†,	add new subparagraph; any mixture of a solid waste excluded under 261.4(b)(7) & a hazardous waste listed in 261 subpart D solely because it exhibits a characteristic, is not a hazardous waste if it no longer exhibits a characteristic for which it was listed	261.3(g)(4)	7045.0102, 2, I, (4)	X			

† Optional

RCRA REVISION CHECKLIST 199
Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste67 FR 11251-11254
March 13, 2002
(RCRA Cluster XII, Non-HSWA)

Name of State:

State Statutory Authority:

Title of Regulations: _____ Effective Date:

Date Checklist Completed:

Conditionally optional provisions are identified by a "††" (double dagger symbol) in this checklist.

	FEDERAL REQUIREMENTS	FEDERAL RCRA CITATION	ANALOGOUS STATE CITATION	STATE ANALOG IS:			
				EQUIV-ALENT	LESS STRIN-GENT	MORE STRIN-GENT	BROADER IN SCOPE
	PART 261 – IDENTIFICATION AND LISTING OF HAZARDOUS WASTE						
	SUBPART A – GENERAL						
	DEFINITION OF SOLID WASTE						
††,[1]	remove "(except as provided under 40 CFR 261.4(a)(17))" at end of second sentence	261.2(c)(3)	Minnesota Statutes, 116.06, 11	X			
	EXCLUSIONS						
††	replace "Secondary materials (i.e., sludges, by-products, and spent materials as defined in § 261.1)" with "Spent materials (as defined in § 261.1)"	261.4(a)(17)	7045.0120, 1, X	X			
††	replace "secondary" with "spent"	261.4(a)(17)(i)	7045.0120, 1, X, (1)	X			
††	replace "secondary" with "spent"	261.4(a)(17)(ii)	7045.0120, 1, X, (2)	X			
††,[2]	replace "(a)(15)(iv)" with "(a)(17)(iv)"; replace first occurrence of "secondary material" with "spent material"	261.4(a)(17)(iii)	7045.0120, 1, X, (3)	X			

[1] States that have adopted the revised version of Revision Checklist 167 D (63 FR 28556; May 26, 1998) (revised January 2002), should make the following changes to 40 CFR 261.2(c)(3) instead:

Insert new second sentence: "Materials noted with a "–" in column 3 of Table 1 are not solid wastes when reclaimed."

††,[3]	in first sentence, replace "secondary material" with "spent material"; in second sentence, replace "secondary materials" with "spent materials"	261.4(a)(17)(iv)	7045.0120, 1, X, (4)	X			
††,[4]	unchanged even though included in this rule	261.4(a)(17)(iv) (A)	7045.0120, 1, X, (4), (a)	X			
††	revise "secondary material" to "spent material"	261.4(a)(17)(iv) (B)	7045.0120, 1, X, (4), (b)	X			
	unchanged even though included in this rule	261.4(a)(17)(iv) (C)	7045.0120, 1, X, (4), (c)	X			
††	replace "provides a notice" with "provides notice"; replace ", identifying" with "providing"; remove "non" prior to "land-based"	261.4(a)(17)(v)	7045.0120, 1, X, (5)	X			
††,[5]	replace "§ 261.4(b)(7)" with "paragraph (a)(7) of this section"; replace "secondary materials" with "spent materials"	261.4(a)(17)(vi)	7045.0120, 1, X, (6)	X			
	SUBPART C - CHARACTERISTICS OF HAZARDOUS WASTE						
	TOXICITY CHARACTERISTIC						

[2] There is an error in the March 13, 2002 rule (67 FR 11251; Revision Checklist 199). The second occurrence of "secondary material" should have also been revised to "spent material". States should make this revision.

[3] There are typographical errors in the March 13, 2002 rule (67 FR 11251; Revision Checklist 199). In the first sentence, the rule incorrectly revises "on pads, rather than in tanks, containers, or buildings." to "on pads rather than tanks containers, or buildings." States should not make these changes. Additionally, in the third sentence, the rule should have also revised "secondary material" to "spent material". States should make this change.

[4] There is an error in the March 13, 2002 rule (67 FR 11251; Revision Checklist 199). In the second sentence, "secondary material" should have been revised to "spent material". States should make this revision.

[5] There is an error in the March 13, 2002 rule (67 FR 11251; Revision Checklist 199). The rule incorrectly revises the internal reference to "paragraph (a)(7) of this section". The correct revised internal reference should read "paragraph (b)(7) of this section".

insert “(except manufactured gas plant waste)” after “A solid waste”	261.24(a)	7045.0131, 7	X			

DIALOG(R)File 180:Federal Register

Land Disposal Restrictions for Electric Arc Furnace Dust (K061)
Volume: 56 Issue: 160 Page: 41164
CITATION NUMBER: 56 FR 41164
Date: MONDAY, AUGUST 19, 1991

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR 261, 268, 271
NUMBERS: FRL-3973-8; RIN 2050-AD20
DATES: Effective: 19910808
CONTACT INFORMATION: RCRA Hotline, 800-424-9346,, 703-9209810,; or; Waste Treatment Branch, 703-308-8434,; or; Laura Lopez, 703-308-8457,; or; Bob Kayser, 202-382-4770
ACTION: Final rule
INTERNAL DATA: (FR Doc. 91-19347 Filed 8-16-91; 8:45 am)
Word Count: 13491

SUMMARY: The Environmental Protection Agency (EPA) is today finalizing treatment standards under the land disposal restrictions (LDR) program for a subcategory of the hazardous waste K061 (electric arc furnace dust) treatability group, namely nonwastewaters that contain equal to or greater than 15% total zinc (i.e., high zinc subcategory), determined at the point of initial generation. These treatment standards are based on the performance of high temperature metals recovery (HTMR) processes; specifically, the standards are based on analysis of slags from these processes. The Agency is also finalizing a generic exclusion from the derived-from rule for HTMR nonwastewater slag residues generated from processing K061, provided that these slag residues meet designated concentration levels, are disposed of in subtitle D units, and exhibit no characteristics of hazardous waste. Furthermore, today's rule finalizes a conditional exclusion from classification as a solid waste for K061 HTMR splash condenser dross residue.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 268, and 271

(FRL-3973-8)
RIN 2050-AD20

Land Disposal Restrictions for Electric Arc Furnace Dust (K061)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is today finalizing treatment standards under the land disposal restrictions (LDR) program for a subcategory of the hazardous waste K061 (electric arc furnace dust) treatability group, namely nonwastewaters that contain equal to or greater than 15% total zinc (i.e., high zinc subcategory), determined at the point

of initial generation. These treatment standards are based on the performance of high temperature metals recovery (HTMR) processes; specifically, the standards are based on analysis of slags from these processes. The Agency is also finalizing a generic exclusion from the derived-from rule for HTMR nonwastewater slag residues generated from processing K061, provided that these slag residues meet designated concentration levels, are disposed of in subtitle D units, and exhibit no characteristics of hazardous waste.

Furthermore, today's rule finalizes a conditional exclusion from classification as a solid waste for K061 HTMR splash condenser dross residue.

EFFECTIVE DATE: This final rule is effective on August 8, 1991.

ADDRESSES: The official record for this rulemaking is identified as docket F 91-K61P-FFFF, and is located in the EPA RCRA Docket, room 2427, 401 M Street SW., Washington, DC 20460. The docket is open from 9 a.m. to 4 p.m., Monday through Friday, except on federal holidays. An appointment must be made to examine the docket by calling (202) 475-9327. Up to 100 pages of a regulatory document may be copied at no cost; beyond 100 pages the cost is 15 cents per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424-9346 (toll free), (703) 920-9810 locally. For information on the final rule, contact the Waste Treatment Branch, Office of Solid Waste (OS-322W), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (703) 308-8434. For information on the BDAT treatment standard, contact Laura Lopez, Office of Solid Waste (OS-322W), U.S. Environmental Protection Agency, 401 M Street SW., Washington DC 20460, (703) 308-8457. For information on the generic exclusion, contact Bob Kayser, Office of Solid Waste (OS-333), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (202) 382-4770.

SUPPLEMENTARY INFORMATION:

Outline

I. Background

A. Summary of the Hazardous and Solid Waste Amendments of 1984 and the Land Disposal Restrictions Framework

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, generally prohibit the land disposal of untreated hazardous wastes. HSWA

requires the Agency to set "* * * levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized" (RCRA section 3004(m)(1)). Wastes that meet the treatment standards established by EPA may be land disposed. For the purposes of the restrictions, HSWA defines land disposal to include any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave (RCRA section 3004(k)).

The land disposal restrictions are effective when promulgated, unless the Administrator grants a national capacity variance from the otherwise applicable statutory prohibition date and establishes a different date (not to exceed two years) based on "* * * the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available" (RCRA section 3004(h)(2)). The Administrator may also grant a case-by-case extension of the effective date for up to one year, renewable once for up to one additional year, when an applicant successfully makes certain demonstrations (RCRA section 3004(h)(3)). (See 55 FR 22526 for a more detailed discussion on national capacity variances and case-by-case extensions.)

In addition to prohibiting the land disposal of hazardous wastes, Congress prohibited storage of any waste which is prohibited from land disposal unless "* * * such storage is solely for the purpose of the accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal" (RCRA section 3004(j)).

B. Final Rule

Today's rule revises and finalizes treatment standards for K061 nonwastewaters in the high zinc subcategory (i.e., containing equal to or greater than 15% total zinc, determined at the point of initial generation).

K061 wastes are defined in 40 CFR 261.32 as "Emission control dust/sludge from the primary production of steel in electric furnaces." Concentration-based treatment standards for K061 high zinc nonwastewaters are based on the analysis of nonwastewater slag residues from HTMR processes. (Although these residues have been commonly referred to as "slag," there is some question whether all of the HTMR processes technically generate slags. Slag is generally considered a residue from a thermal process in which metals have been in a molten mixture. Since this does not necessarily occur in all HTMR processes, the nonwastewater residues from some of these processes technically would not be slags. In addition, HTMR processes generate residues other than slag. Section II.C.6. below discusses the regulatory status of certain non-slag HTMR residues.)

Today's rule also finalizes a generic exclusion for K061 nonwastewater residues if: (1) They are generated from the HTMR process; (2) they meet the generic exclusion levels for all constituents; (3) they are disposed of in a Subtitle D unit; and (4) they exhibit no hazardous waste characteristics.

Furthermore, today's rule finalizes an exclusion from classification as a solid waste under 40 CFR 261.4(a), for certain materials that are partially but not fully reclaimed. This variance applies to HTMR splash condenser dross residue provided it is shipped in drums (if processed off-site) and provided that it is not land disposed at any point before recovery occurs.

II. Detailed Discussion of Final Rule

A. History of K061 Treatment Standards

EPA first promulgated treatment standards for nonwastewater forms of K061 in the First Third final rule on August 8, 1988 (53 FR 31162-31164). The Agency established two subcategories for nonwastewater forms of K061: The low zinc subcategory (less than 15% total zinc) and the high zinc subcategory (equal to or greater than 15% total zinc). EPA determined that zinc could be recovered on a routine basis from K061 wastes containing equal to or greater than 15% total zinc utilizing HTMR. Although HTMR technologies can recover zinc from some K061 containing less than 15% total zinc, EPA determined that the 15% level represented a reasonable cutoff for distinguishing between the two subcategories for K061 wastes. The treatment standard for the low zinc subcategory was based on the performance of stabilization. For the high zinc subcategory, the final standard was expressed as "no land disposal" based on the determination that HTMR represents BDAT (53 FR 31221). Due to a shortage in HTMR capacity, an interim numerical standard based on the performance of stabilization was established until August 1990.

In the proposed Third Third rule (54 FR 48456-48457), the Agency requested comments on extending the existing interim standard of stabilization for another year. Because of the capacity storage, the Agency decided to extend the interim standard for one additional year.

The Agency also proposed in the Third Third to amend the existing treatment standard for the high zinc subcategory K061 wastes to be resmelting in a high temperature metal recovery furnace. However, EPA decided not to amend the existing standard in the final rule, as the metals recovery standard was under review by a panel of the District of Columbia Circuit Court of Appeals (55 FR 22599). In a June 26, 1990 decision, the court remanded the issue to EPA for further consideration (API v. EPA, 906 F.2d 726 (D.C. Cir. 1990)).

Although EPA determined in the First Third rulemaking that HTMR was BDAT for treating high zinc K061 hazardous wastes, the Agency concluded that it probably lacked the authority to establish any treatment standards under the K061 waste code for the residues resulting from the metals reclamation process. In particular, the Agency indicated that a jurisdictional bar could exist on regulating K061 dust as a "solid waste" within the meaning of RCRA Subtitle C once it entered a reclamation furnace where it functioned as, and was similar to, ordinary raw materials customarily processed in the industrial furnace. Therefore, residues derived from the reclamation process would not be derived from treating a hazardous waste. For purposes of the land disposal restrictions program, therefore, the residues would not be covered by the prohibition for K061 waste. The treatment standard of "no land disposal" reflected EPA's belief that slag residues from HTMR no longer carried the K061 waste code, so that no K061 waste was being disposed.

In its June 1990 decision, the court found it equally plausible that the K061 remained discarded throughout the waste treatment process and that residues from the process could still be classified as K061 (906 F.2d at 740- 741). According to the court, the delivery of K061 waste to a metals reclamation facility is part of a mandatory waste treatment plan specified by EPA, and EPA can still consider it a solid waste under RCRA. Id. Therefore, the court held that EPA must reconsider its basis for declining to establish a treatment standard for K061 residues and remanded EPA's determination that HTMR slag residues are not covered by the K061 prohibition. In doing so, the court created a situation where a hard hammer (an absolute prohibition on waste disposal except in a no migration unit) could apply to these residues.
This is because the existing interim treatment standard, based on the performance of stabilization technology, will lapse on August 8, 1991.

In this proceeding, the Agency is acting primarily to keep this absolute

prohibition from occurring. We are not making any definitive determination on some of the broader issues raised by the court's opinion regarding which materials are and are not solid wastes when destined for recycling. In our view, the court's remand reinstituted existing Agency rules without any jurisdictional override imposed by the indigenous principle. Under these rules, K061 destined for metals reclamation is a solid waste. 40 CFR 261.2(c)(3). Non-product residues from the metals reclamation process remain hazardous wastes under the K061 waste code by virtue of the derived-from rule in 40 CFR 261.3(c)(2). The court noted the legal validity of these rules in the course of its opinion. 906 F.2d at 740-42.

Many commentors urged the Agency to find that K061 waste reclaimed by HTMR process is not a solid waste, either through interpretation of current rules, or by reference to the initial opinion of the DC Circuit on recycling (AMC I, 824 F.2d 1177 (DC Cir. 1987)). They also maintained that by deferring comment on the issue, the Agency was in fact deciding that these materials must be solid wastes.

EPA disagrees. We repeat that we are allowing the Court's opinion and mandate to operate, at least for the time being. The status quo created by the Court's mandate and the existing regulations thus continues in effect. We repeat that this means that K061 waste destined for reclamation via HTMR is a solid waste under existing rules because it is a listed waste being reclaimed (40 CFR 261.2(c)) and because at present there is no indigenous principle operating to cut off application of the derived-from rule. 906 F.2d at 740- 41.

Nevertheless, the Agency is presently engaged in a comprehensive reevaluation of its rules on recycling, and may ultimately articulate new principles which bear on the issue of the status of K061 and the slag and other residues resulting from the HTMR process. Before that reevaluation is completed, however, EPA is acting pursuant to the current regulatory regime as described above.

The Agency notes in response to comment that it is reexamining its approach in making waste/non-waste determinations. The Agency is considering linking decisions on status as solid waste with environmental consequences of recycling activities. The API and AMC II (907 F.2d 1179 (DC Cir. 1990)) opinions invite a pragmatic, environmentally-based approach with their focus on whether a particular material destined for recycling is part of a waste disposal problem. Thus, the Agency would anticipate in future rulemakings on these issues that it would propose to examine not only that recycling is occurring but also the way these materials are managed before, during, and after recycling.

To the extent it is deemed necessary for EPA to address the policy implications of preserving the regulatory status quo (i.e., continuing to regulate K061 going to HTMR as a solid and hazardous waste and applying the derived-from rule to non-product residues), the Agency notes that this result is consistent with RCRA's cradle-to-grave mandate in that there will be strict supervision of toxic constituents from K061 throughout all phases of its management, including partitioning into non-product residues of the HTMR process. The fact that the residue output of the HTMR process can be used in a manner constituting disposal shows that the continued management of residues is potentially part of the waste disposal problem (906 F.2d at 740), and thus that assertion of jurisdiction is warranted to further RCRA's traditional safety objectives. The Agency notes further, however, that it may be possible to advance these objectives, as well as RCRA's resource conservation and recovery purposes, by means other than full-scale regulatory controls. The Agency's disposition of the status of the splash condenser dross residue (see section II.C.6 below) illustrates how accommodation of both of these goals can be possible. Thus, we reiterate that today's action is not intended to forestall further Agency rulemaking dealing with questions of solid waste status and developing a regulatory

scheme that may further both of the dual statutory purposes.

B. Development of Concentration-Based Treatment Standards Based on Recovery for K061 High Zinc

1. Summary of Treatment Performance Data

For the First Third rule in August, 1988, EPA had two sets of TCLP (referring to the Toxicity Characteristic Leaching Procedure according to Sec. 261.24) data on the nonwastewater residues resulting from two different HTMR processes that were recovering zinc from K061 wastes in the high zinc subcategory. One of these HTMR processes consists of a series of Waelz kilns (a Waelz kiln is a type of rotary kiln), while the other was the SKF plasma arc furnace. At that time, however, EPA chose not to establish concentration- based treatment standards.

In September, 1990, additional TCLP data on residues from the recovery of zinc from K061 wastes in the high zinc subcategory (low in nickel and chromium) were submitted to the Agency by Horsehead Resource Development Company (HRD). This system uses a series of Waelz kilns, generating a crude zinc oxide and an iron-rich residue (referred to as "slag" in some FR notices, and in the API opinion) from the first kiln. The crude zinc oxide is typically sent to a second kiln for further separation after which it is normally suitable for smelting, while the iron-rich residue has been typically used as road aggregate. Based on the TCLP data for the iron-rich residue and the two sets of TCLP data submitted for the First Third rule, the Agency developed concentration-based treatment standards for 14 metals that were presented in the proposal.

During and after the close of the public comment period, the Agency received additional treatment performance data for other HMTR processes for K061 wastes. Treatment performance data representing properly designed and operated systems were received, in particular, from International Mills Service (IMS) and International Metals Reclamation Company, Incorporated (Inmetco).

Data submitted by IMS demonstrate recovery of zinc, lead, and cadmium from K061 high zinc wastes utilizing a plasma furnace with an Imperial Smelting Process (ISP) zinc splash condenser. The splash condenser can produce prime western grade zinc (i.e., 98 percent zinc, less than 1.4 percent lead and 0.5 percent cadmium) and metallic lead as products (i.e., materials put to direct use without smelting. IMS submitted a total of 16 TCLP results for 14 metals from the slag residual generated in the primary furnace.

Inmetco submitted three sets of TCLP results for the slag residual generated during the recovery of nickel, chromium, and iron from K061 high zinc subcategory. Inmetco's HTMR system consists of a rotary hearth furnace with a wet scrubber followed by an electric furnace with a baghouse. Zinc-rich materials containing lead and cadmium are also recovered as baghouse dusts and scrubber sludges and sent (as K061 hazardous waste) for further recovery of zinc.

Other data submitted on residues from HTMR processes were determined by EPA to be insufficient to represent full scale operations or were determined not to be representative of a properly operated system. Data and rationale for these determinations are provided in the background document for this rulemaking.

In a July 2, 1991 letter to all commenters on the proposed rule, EPA provided notice of additional data from HRD (collected during the First Third), and data submitted during the comment period by IMS and Inmetco. EPA also noticed for comment revised treatment standards derived from data

used to develop the proposed standards and these new data.

2. Response to Major Comments on BDAT

EPA's responses to all comments are found in the Response to Comment Background Document. The following discussion summarizes the Agency's responses to the major comments on the development of BDAT treatment standards.

a. Use of HTMR Data from Recovery of Metals from Low Zinc K061. Commenters remarked that zinc is recovered from wastes containing less than 15 percent zinc; therefore, EPA should establish standards based on HTMR for all K061 wastes regardless of the zinc content. At the very least, commenters said that the Agency should use data that indicate the treatment performance of HTMR for wastes containing less than 15 percent zinc in the treatment standard calculation for K061 wastes in the high zinc subcategory. Commenters emphasized that it is common practice, especially for commercial recovery facilities, to blend these subcategories to achieve appropriate feed compositions for recovery (some of which are only slightly below the 15 percent cutoff); hence, commenters argued that EPA must consider recovery performance for low zinc wastes since the high zinc standards would be most stringent and take precedence over the K061 low zinc standards based on stabilization. The high zinc/low zinc dilemma also affects facilities utilizing site-specific HTMR units since the zinc content of K061 can vary depending on the grade of steel produced (i.e., most facilities produce many different types depending on demand) and the amount of galvanized steel scrap fed to the electric furnace (i.e., zinc concentration in K061 increases as the amount of galvanized steel scrap feed increases).

The Agency agrees with the commenters and has used data demonstrating the HTMR performance of K061 wastes containing a mixture of high and low zinc subcategories but having an overall zinc content less than 15 percent to develop final treatment standards. The treatment standards adopted today, however, only apply to the high zinc subcategory. Commenters may be correct that the continued subcategorization of K061 (i.e., into high zinc and low zinc subcategories) is unwarranted given that HTMR treatment (and probably other forms of treatment as well) are equally effective for each subcategory.
Given the short time frame of this rulemaking, the Agency is not prepared to make a final decision on the issue at this time but may initiate further rulemaking in the near future. The Agency notes in addition, however, that mixtures of high and low zinc K061. This is because EPA regards this standard as more stringent than the low zinc K061 standard (the high zinc standard applies to more constituents), and because the HTMR process is the BDAT technology due to its resource recovery and waste minimization potential (plus effective metal immobilization). The Agency is adding language to 40 CFR 268.41(b) to clarify that mixtures of low and high zinc K061 are subject to the high zinc treatment standard.

b. Use of Stabilization Data. Several commenters submitted data for stabilization of K061 wastes. The data did not, however, include concentration data for zinc, nickel, or chromium in the untreated K061 wastes, leachate analyses for all 14 metals in the stabilized residual, design and operating conditions, binder-to-waste ratios, water-to-waste ratios and/or waste-to-waste ratios. In the First Third final rule, EPA determined that HTMR represented BDAT for K061 wastes. These additional data did not cause the Agency to change it's decision. However, stabilization technologies may be used to achieve the treatment standards in today's rule (provided the standards are achieved through bona fide treatment rather than impermissible dilution).

c. Regulation of 14 Metals. Based on the new data discussed above, EPA is, today, promulgating treatment standards for all 14 of the metals that were proposed for regulation in K061 nonwastewaters in the high zinc subcategory.

Except for vanadium, numerical standards for metals in TCLP leachates have been established. (As discussed below, the treatment standard for vanadium is promulgated as "reserved".)

In general, the Agency has decided to regulate all 14 metals for several reasons. First, information suggests that all 14 metals have a reasonably high potential for being present in any given K061 waste due to the nature of the steel manufacturing process from which the K061 is generated. Data on the composition of K061 indicate that these 14 metals are present at varying concentrations in K061 wastes from different generating facilities. This appears to be related to the types of scrap materials smelted in the electric furnace, the metals added to make certain types of steel alloys, and/or the grade of steel produced. Additional information on the potential for K061 wastes to contain all 14 metals is provided in the BDAT background document for today's rule.

Second, since all 14 metals have the potential to be present in K061, they all, consequently, have the potential to be in the HTMR residues depending upon where the metals partition in the recovery process. Improper operation of the HTMR process could result in shifts in partitioning of certain metals to products (e.g., metal alloys), intermediates requiring further smelting, slag, or other nonwastewater residues. HTMR processes are highly dependent, at least in part, upon parameters such as the operating temperature of the heat zones, composition of metals and other elements in the feed, zone residence times, flow rates, oxidation/reduction conditions, and mixing. (See also the BDAT background document for an explanation of how the 14 metals typically partition in an HTMR unit and the principles behind the partitioning.) There is also an inherent metallurgical interdependency between certain metals, based on their atomic structure. Such factors have led the Agency to the conclusion that all metal-bearing materials placed into the HTMR processes could affect the ultimate composition and leachability of metals from HTMR nonwastewater residues. The Agency believes, therefore, that regulation of all of the metals will provide a means of ensuring that the HTMR processes, when used to treat K061 wastes, are well-designed and well- operated (i.e., truly BDAT) with due consideration of all feed materials.

Third, since all 14 metals are potentially present in the treatment residues and are either hazardous to human health or the environment, EPA has developed treatment standards that will ensure the control of the leachability of all 14 metals. (See also the discussion of the regulation of zinc and vanadium, below.)

In general, commenters did not provide technical support or evidence to dispute that the fourteen metals should not be regulated. Rather, the commenters raised four major areas of concern regarding the regulation of all 14 metals: (1) Only the four previous regulated metals should be regulated because not all 14 metals are present and that EPA regulated only four as interim standards; (2) the four metals currently regulated in K061 wastes will control the leachability of the other metals; (3) HTMR does not treat all 14 metals; and (4) regulation of 14 metals will create an unnecessary analytical cost burden. The Agency disagrees with the commenters for the following reasons:

i. Previous Regulation of Four Metals.--The Agency is not restricting the treatment standards to just the four previously regulated metals for the following reasons: (1) Waste characterization data for untreated K061 wastes indicates the presence of all 14 metals in various concentrations; (2) additional information on how K061 wastes are generated indicate that all 14 metals also have a reasonably high potential for being present in any given untreated K061 waste; (3) the previous standards for the four metals were based on preliminary stabilization data rather than data from HTMR (which was determined to be BDAT); and (4) the previous standards for

high zinc K061 wastes were only interim.

While the agency had previously promulgated a treatment standard of "No Land Disposal" based on the use of HTMR, interim standards based on stabilization were established until HTMR capacity could come on-line. These standards regulated only four metals in K061 wastes based on the available treatment data and were considered interim until the Agency could better examine performance data from HTMR units. At the time of the establishment of these interim standards, the Agency was unaware of the wide variety in metals composition K061 wastes and did not, at that time, establish stabilization standards for all 14 metals.

ii. Control of Leachability.--Based on the principles of the pyrometallurgical processes and the potential presence of all 14 metals in HTMR residues, the agency does not believe regulation of only the four previously regulated metals will control the leachability of all 14 metals from these residues. Different metals partition to different HTMR residues (or products) at different concentrations depending on the design and operating conditions of the HTMR process. (There are, however, some chemical and physical properties of the metals that allow prediction and control of partitioning.) As a result, regulation of all 14 metals is necessary in order to account for the variability in potential differences in partitioning. In addition, data does not support that the leachability of any one particular metal (or group of metals) can be used to monitor the leachability of all of the other metals.

In fact, differences in the treatability of metals have also been demonstrated by conventional stabilization processes. Arsenic, selenium, barium, mercury, and hexavalent chromium have been demonstrated, for example, to be particularly difficult to stabilize using simple cementitious reagents.

In addition, many wastes require special recipes of stabilization reagents in order to achieve optimum stabilization. (HTMR does, however, appear to be less sensitive than stabilization to variations in concentrations and less dependent on the chemical composition of the wastes.)

iii. HTMR as Treatment for Other Metals--HTMR provides treatment of all 14 metals through a combination of thermal recovery of metals (into products) and thermo-chemical stabilization (of residues). Treatment of the 14 metals is directly related to partitioning of the metals (based on the melting and boiling points of the metals and their compounds) as the waste is exposed to the high temperatures of the primary furnace. In general, HTMR provides treatment of the low-boiling point metals present in K061 by volatilization and subsequent recovery, while high-boiling point metals are thermo-chemically stabilized in HTMR residues such as slags. This thermo-chemical stabilization of the non-volatile metals occurs due to the high temperatures present, the relatively efficient mixing conditions, the oxidation-reduction conditions in the primary furnace, and the presence of other inorganic constituents that act, in effect, as stabilization reagents. In fact, many of the same conventional cementitious stabilization reagents such as calcium, silica, and alumina are also used as additives in some HTMR processes to achieve desirable HTMR operating conditions as well as to enhance desirable slag properties.

In confirmation, since most of the leachability data for all 14 metals from HTMR residues show very low, non-detectable levels in TCLP leachates, the Agency concludes that the HTMR process does indeed treat all of the toxic metals.

iv. Potential Analytical Burden of 14 Metals--Several commenters said that the Agency should regulate only those metals for which K061 is listed, because requiring analysis of the additional metals will be burdensome. EPA disagrees. First, eight of the metals are included in the determination that the material is not TC toxic (i.e., D004-D011) prior to disposal. In

addition, five more are currently regulated to verify that the waste can be delisted. Moreover, it is the initial sample preparation that generally impacts the cost of metals analysis, rather than the instrumental analysis. In fact, most metals are analyzed using the same analytical instrument and the analysis for all 14 metals is performed simultaneously. As such, the addition of the other metals is not considered unduly burdensome.

d. Regulation of Zinc and Vanadium. Some commenters particularly stressed that zinc and vanadium should not be regulated. The Agency proposed to regulate zinc as an indicator of proper HTMR performance (i.e., indicating effective treatment). The Agency continues to believe that zinc is a good indicator of how effectively the system is recovering zinc. Poor zinc recovery seems to be related to poor maintenance of proper operating temperatures which can lead to less recovered material. This, in turn, will lead to more metals in the slag causing greater slag volumes and the potential for more metals to leach into the environment. This is significant because part of the reason EPA has selected HTMR as the BDAT technology is its resource recovery and volume reduction potential. The treatment standard for zinc helps ensure that these expected environmental benefits of using HTMR will occur. Improper removal of zinc can be, likewise, related to immobilization of hazardous constituents that is not optimum. For example, the Agency has data demonstrating that when zinc is concentrated and leaches at higher levels in the slag, other constituents, such as lead, are also concentrated and leach at higher levels.

In addition, zinc has been shown to be an aquatic toxin. Since surface runoff of treated K061 wastes could potentially enter waterways, the Agency is concerned that improper recovery of zinc could lead to unacceptable zinc leachate levels entering aquatic ecosystems. Disposal of such a waste might still be unprotective of human health and the environment under the second prong of the land disposal prohibition test, notwithstanding that Appendix VIII hazardous constituents are immobilized. See NRDC v. EPA, 907 F.2d 1146, 1171-72 (DC Cir. 1990) (dissenting opinion). EPA is also considering adding zinc to 40 CFR part 261 Appendix VIII, but is not doing so at this time. (It is also currently regulated under section 304 of the Clean Water Act as an aquatic toxin.)
Hence, EPA is finalizing a treatment standard for zinc as a means of ensuring that HTMR is operated optimally and thus achieves the statutory goals of immobilization of hazardous constituents, resource recovery and waste minimization.

With respect to vanadium, the Agency continues to believe that it is important to monitor vanadium concentrations in the TCLP leachate of K061 HTMR residues because there purportedly exist generators of K061 wastes containing high vanadium concentrations and certain vanadium compounds appear to be toxic. (Two vanadium compounds are specifically listed in Appendix VIII.) The Agency calculated a numerical standard for vanadium in K061 wastes based on a limited amount of detection limit data for vanadium; however, the Agency is promulgating the standard for vanadium as "reserved" for the following reasons: (1) Vanadium, when present in K061 wastes, will partition in an HTMR unit to the slag residues (thus, eventual regulation is appropriate); (2) the form of the vanadium as it leaches from the slags or other HTMR residues is unknown; however, it is expected to be toxic (again, eventual regulation is appropriate); (3) EPA currently has no leachate data for K061 wastes containing high levels of vanadium, but such wastes probably exist (thus, EPA's current data may not be representative of those wastes); (4) several commenters indicated that vanadium leaches at levels higher than those proposed by the Agency, but submitted no data to demonstrate this phenomena; and (5) commenters also indicated potential problems in detecting vanadium at the levels proposed. As a result of all of the above, the Agency has chosen to reserve the standard for vanadium until sufficient data and information become available. EPA also plans to resolve the issue of vanadium as a hazardous constituent in a later

proceeding.

EPA notes further, however, that it is including a standard for vanadium as part of the generic exclusion from the derived-from rule for treated K061 dusts. See section II.C below. Since vanadium is a constituent of K061 that can make the waste hazardous, the Agency believes it appropriate (particularly because there is a verified health-based level for vanadium) to include this constituent within the exclusion. See RCRA section 3001(f). The Agency's present inability to establish a reliable treatment standard for this constituent in all treated K061 wastes is likewise no bar to including vanadium within the exclusion.

3. Development of Final Concentration-based Standards

a. Data Used as the Basis of the Standards. EPA has determined that it is appropriate to develop treatment standards for K061 based on the performance of all properly designed and operated HTMR processes that have been demonstrated to recover metals from high zinc K061 wastes or mixtures containing high zinc K061 wastes. Data that meet these requirements include: (1) Three TCLP leachate analyses for all 14 metals and nine TCLP leachate analyses for the eight TC metals in the slag (i.e., IRM) generated by the HRD Waelz kiln process; (2) 16 TCLP leachate analyses for all 14 metals in the slag generated by the IMS plasma furnace process; (3) one TCLP leachate analysis for 10 metals in the slag generated by the SKF plasma furnace process; and (4) three TCLP leachate analyses for all 14 metals in the slag generated by the Inmetco electric furnace process.

b. Calculation of the Standards. These HTMR processes typically result in nonwastewater residues (e.g., slags) that leach relatively low levels (and in most cases nondetectable levels) of metals in a TCLP leachate. Commenters were concerned with the potential detection limit problems based on analytical equipment variability and TCLP digestion problems for the slag matrix. In addition, several commenters mentioned concerns about process variabilities due to different system configurations and feed variabilities caused by on-site recovery systems with sole-source feeds versus commercial recovery systems that blend many different K061 wastes.

The Agency has decided to develop treatment standards that reflect the performance of all of the various well-operated HTMR technologies. This results in limits higher than those proposed. However, given that all of these technologies are capable of achieving substantial immobilization of hazardous constituents (though not identical levels of performance), EPA believes this result is appropriate. EPA notes further that certain apparent differences in performance result from different reported detection limits.

Thus, for many of the metals, all of the reported data shows non-detectable levels of metals in the HTMR slag, but different limits of detection due to different slag matrices (or perhaps due to differing levels of performance by analytic laboratories). In these cases, EPA used the highest analytic detection limits in order to accommodate performance of as many of the well- operated HTMR technologies as possible. (EPA believes that is appropriate for this rulemaking, but would not necessarily adopt the same approach for other treatment standards, since it might not always reflect best treatment performance.)

As a result, the final standards have been calculated using the following BDAT methodology. First, treatment standards were determined for each process individually. Then, the four sets of standards were compared to each other.

Based on this comparison, the Agency selected the highest standard for each metal from each of the five processes to allow for process variability and detection limit difficulties. This approach derives limits achievable by all of the major HTMR technologies (and probably achievable by

stabilization as well) since, properly operated, these technologies all appear capable of substantially reducing the mobility of metals in HTMR slags.

By establishing standards that are not based on a single optimized type of HTMR technology, the Agency recognizes that metal mobility in K061 residues may not be minimized to the maximum extent. However, EPA believes that the treatment standards developed today are appropriate. First, as noted above, these standards represent significant reduction in metal mobility. See section 3004(m) and 55 FR 6640, 641 n. 1 ("minimize" standard in section 3004(m) does not require the elimination of every conceivable threat posed by disposal of a hazardous waste). Second, a more stringent standard, based on a particular HTMR technology, would be a type of technology-forcing standard that Congress did not appear to have in mind in promulgating section 3004(m).
130 Cong. Rec. S 9178 (daily ed. July 25, 1984) (statement of Sen. Chafee); 56 FR at 12354. Third, the Agency notes that today's action is similar to standards developed for other wastes codes (notably the K048-K052 wastes) where the Agency based treatment standards on treatment technologies may not achieve complete destruction or removal, but nevertheless achieve substantial reductions of toxins. 55 FR at 22596.

EPA notes that some of the treatment standards have increased slightly over the existing interim standards based upon performance of stabilization. Thus, the standards for both lead and cadmium are slightly higher in today's rule.
The Agency does not regard the small difference (hundredths of parts per million) as of significance, particularly because the actual reported HTMR values in most cases are non-detectable in any event. In addition, the value for nickel based on HTMR performance is considerably higher (over an order of magnitude) than the existing interim standard. However, the standard based on stabilization was transferred from another waste (because the only K061 wastes for which EPA had data contained levels of nickel too low to be treated (see K061 Background Document for the First Third rulemaking)), whereas the standard in today's rule reflects treatment of a high nickel K061 waste. EPA thus believes that the higher nickel level adopted today more accurately reflects treatment performance. In addition, EPA would probably have to create a further subcategory (high nickel/chromium K061) to accommodate treatment of high nickel/chromium wastes, which would result in a further and unnecessary complication of the rules, in the Agency's view.
Thus, EPA does not believe that the higher nickel standards (or slightly higher lead and cadmium standards) promulgated today calls into question whether HTMR is the appropriate technology on which to base treatment standards.

To create an incentive for use of the more optimized HTMR technologies, however, the Agency is going forward with the proposed generic exclusion from the derived-from rule for residues meeting health-based standards (which for most of the metals are lower than the treatment standards). Based on the treatability data provided the Agency, slag residues from many of the newer processes should achieve these levels. The older processes, if properly operated (or possibly modified) also may be able to achieve these levels.

c. Standards for K061 High Zinc Nonwastewaters. The specific treatment standards are as follows:

BDAT Treatment Standards for K061
(Nonwastewaters--High Zinc Subcategory)
Maximum for any single composite sample, Regulated TCLP (mg/ constituent l)
Antimony 2.1 Arsenic 0.055 Barium 7.6 Beryllium 0.014 Cadmium 0.19

Chromium (Total) 0.33 Lead 0.37 Mercury 0.009 Nickel 5.0 Selenium 0.16 Silver 0.30 Thallium 0.078 Vanadium (/1/) Zinc 5.3
/1/ Reserved.

d. Decision not to Adopt the Proposed High Chromium/High Zinc Subcategory. In the proposal, EPA developed concentration-based treatment standards for K061 nonwastewaters in the high zinc subcategory based on HTMR as BDAT; however, EPA proposed to establish different treatment standards for these wastes based on their chromium/nickel content. While most of the high zinc subcategory K061 wastes are generated from the manufacturing of carbon steel and contain low concentrations of chromium and nickel, certain K061 wastes generated from stainless and specialty steel manufacturing, besides having a high zinc content, may also contain recoverable levels of chromium and nickel (i.e., containing equal to or greater than 1.5% total nickel and chromium in combination). These wastes can be used to produce a remelt alloy containing nickel, chromium, and iron that can be used as a feedstock for stainless steel production.

In the proposal, the Agency stated that the HTMR process for recovering chromium/nickel from these K061 wastes may achieve a different level of treatment performance than the HTMR processes that are based primarily on the recovery of zinc from K061. EPA believed this was due to the differences in metal concentrations of the feed materials (in particular, with respect to zinc, nickel, and chromium) and the inherent differences in design and operation of the respective HTMR processes. Consequently, EPA proposed to divide the K061 high zinc subcategory into those wastes containing less than or equal to 1.5% nickel/chromium combination and those wastes containing greater than 1.5% nickel/chromium combination.

For the high zinc K061 wastes containing greater than 1.5% nickel/chromium combination, the Agency proposed to reserve the standards for nickel and chromium based on the assumption that the treatment performance would be different for these wastes and the lack of data demonstrating actual performance. The decision to divide high zinc K061 based on the chromium/nickel content has been reevaluated and the Agency has determined, based on data submitted during the comment period, that the chromium/nickel HTMR recovery process achieves a similar level of performance as the HTMR processes designed and operated to recover only volatile metals such as zinc, lead, and cadmium. In addition, as discussed earlier, EPA has adopted a nickel standard reflecting treatment performance of a high nickel/chromium waste by HTMR. For these reasons, the Agency does not believe it necessary to promulgate a further regulatory subcategory for K061, nor to reserve treatment standards for nickel and chromium. Thus, the final rule establishes standards for chromium and nickel applicable to residues from the treating of all high zinc K061 nonwastewaters.

4. Use of Other Technologies

The Agency received several comments indicating that other non-HTMR recovery processes exist that can be used to recover metals from K061 nonwastewaters in both the low zinc and high zinc subcategories. These processes use a series of primarily hydrometallurgical technologies, including chemical precipitation, ion exchange, and electrowinning. These non-HTMR recovery processes, along with stabilization processes, are not precluded from use by today's rule, provided the residues comply with the concentration-based standards prior to land disposal (assuming that land disposal occurs) and provided that these levels have not been achieved through the use of impermissible dilution.

C. Generic Exclusion of HTMR Nonwastewater Residues

1. Conditions for Exclusion

Residues from HTMR of K061 wastes in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, and rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in 40 CFR 260.10(6), (7), and (12)) are excluded from the hazardous waste regulations when disposed of in a Subtitle D unit, provided the residues meet the generic exclusion levels for all constituents, and provided the residues do not exhibit one or more of the hazardous waste characteristics. The reasons for specifying HTMR for the exclusion are provided in the section below called "Applicability to Other Types of Treated K061." In addition, the residues will be subject to the testing and tracking requirements described below.

The generic exclusion finalized today is the same action that was proposed; however, it was referred to as a "generic delisting" in the proposed rule. Today's action is more accurately termed a generic exclusion from the derived-from rule under Sec. 261.3(c)(2). The term "delisting" is commonly used to describe the rulemaking process established under 40 CFR 260.20 and 260.22 to amend part 261 on a waste-specific basis (by facility). The decision to generically exclude nonwastewater HTMR K061 residues was based on the fact that the treatment process is well-defined and thus does not require an in-depth evaluation of each facility's process. The Agency is determining that the "derived-from" rule's presumption of hazardousness no longer should apply to HTMR K061 residues with toxic metals treated to specified levels.

The Agency has made this determination after considering the factors in RCRA section 3001(f) and after satisfying the underlying philosophy of the delisting provisions.

The generic exclusion levels include all of the toxic metals that might reasonably be expected to be present in the nonwastewater residues from processing K061 wastes by HTMR. (This is consistent with RCRA section 3001(f) requiring EPA to evaluate whether constituents in addition to those for which a waste is listed could make a waste hazardous.) The Agency has evaluated the treatment standard levels using its vertical and horizontal spread (VHS) landfill model, which predicts the potential for groundwater contamination from wastes that are landfilled. See 50 FR 7882, 50 FR 48896, and the RCRA public docket for this notice for a detailed description of the VHS model and its parameters. Using the maximum contaminant levels (MCLs) or action levels and a waste volume of greater than 8,000 cubic yards per facility (a worst case estimate for purposes of the VHS model), EPA determined the following "generic" concentration levels which it considers safe to human health and the environment.

Concentration Levels of K061 HTMR Residuals From VHS Modeling
(Nonwastewaters)
Maximum for any single composite sample, TCLP (mg/ Constituent l)
Antimony 0.063 Arsenic 0.32 Barium 6.3 Beryllium 0.0063 Cadmium 0.032 Chromium (total) 0.63 Lead 0.095 Mercury 0.013 Nickel 0.63 Selenium 0.32 Silver 0.32 Thallium 0.013 Vanadium 1.26

EPA notes that the BDAT standards and VHS-based levels are not identical, since each set was calculated for a different purpose: The BDAT standards are technology-based levels, while the VHS results derive from health-based modeling. In order to be eligible for the generic exclusion, the residues must meet the following concentration levels:

Generic Exclusion Levels of K061 HTMR Residues
(Nonwastewaters)
Maximum for any single composite sample, TCLP (mg/ Constituent l)
Antimony 0.063 Arsenic 0.055 Barium 6.3 Beryllium 0.0063 Cadmium 0.032 Chromium (total) 0.33 Lead 0.095 Mercury 0.009 Nickel 0.63 Selenium 0.16

Silver 0.30 Thallium 0.013 Vanadium 1.26

For five of these constituents (arsenic, chromium, mercury, selenium, and silver), the technology-based treatment standards are slightly lower than the exclusion levels based on VHS modeling. EPA does not regard these values as significantly different, however (the difference ranges from .003 ppm (mercury) to .3 ppm (chromium)). Given that the Agency is excluding these wastes generically, rather than after a more individualized examination as part of a facility-specific delisting, EPA believes that it is prudent to use the slightly lower value for this exclusion. We note that today's action is consistent with the Agency's position in the Third Third rule, where it maintained that land disposal prohibitions can apply to wastes that are hazardous when they are generated, even if they are not hazardous when disposed of (see 55 FR 22652-22653). However, EPA is not invoking that principle to justify its decision here, given that the exclusion is generic and the values practically equivalent in any case.

We thus do not view the final rule as presenting the issue raised in comments of exclusion levels being based on technology-based levels. As just discussed, the final exclusion levels are either generated directly from a health-based model, or are so close to those levels as to be warranted for a generic exclusion.

EPA received numerous comments related to the general proposal of establishing generic waste exclusions. One commenter recommended that the Agency establish generic exclusion levels for all listed hazardous wastes, not just the nonwastewater HTMR K061 residues. The Agency notes that it has modified the definition of solid and hazardous wastes in the past, and, in particular, has modified the "derived-from" rule of 40 CFR 261.3. During the development of the BDAT standards for nonwastewater HTMR K061 residues, the Agency recognized that these wastes do not always contain significant levels of leachable inorganic constituents. As a result, the Agency decided to couple the generic exclusion concept with the part 268 provisions. The Agency may investigate other candidate waste types and modify the "derived-from" rule in the future, on a waste-specific basis, for wastes which warrant exclusion.

Another issue involved the decision to use Toxicity Characteristic Leaching Procedure (TCLP) rather than Extraction Procedure (EP) leach test values for the exclusion. One commenter questioned whether EPA was contemplating revisiting the existing exclusions, not only for K061 but for other metal- bearing wastes, to require TCLP testing to ensure regulatory and environmental consistency. The Agency is currently considering revisiting facility-specific exclusions where petitioners are required to test waste prior to disposal as nonhazardous. In addition, the Agency notes that it currently requires that petitioners provide TCLP data in lieu of EP toxicity testing when submitting new petitions. However, any decision to require TCLP testing for existing exclusions based on EP data will be addressed in a separate Federal Register notice.

One commenter urged EPA to abolish the concept of a generic exclusion under 40 CFR 261.3 for nonwastewater HTMR K061 waste as EPA did not evaluate all of the factors involved in its own delisting protocols as part of the considerations for the exclusion. The commenter believed that EPA should separate the actions related to a generic exclusion from this land disposal restrictions rule. As discussed previously, today's action is not a "delisting," as the procedural requirements for delisting apply to persons seeking exclusion of a waste at a particular generating facility. However, in response to the commenter's concern about the Agency's assessment of the potential hazard of these wastes, the Agency believes that it has sufficiently assessed those hazards using the VHS landfill model.

Furthermore, the Agency is establishing exclusion levels for all

constituents that might make the waste hazardous. The Agency also believes that it has sufficient data demonstrating that nonwastewater HTMR K061 residues are not hazardous if they meet the specified conditions.

The Agency received comments stating that the VHS model greatly exaggerates potential ground water contamination. One commenter felt that the assumptions used in the model are all conservative and that, although some of the assumptions may not represent absolute worst-case conditions when considered individually, in total the model represents an extreme worst case. As a result, the commenter believed that exclusion levels calculated through the application of the VHS model's minimum dilution factor will be unduly conservative. Another commenter believed that delisting the K061 residue using solely the VHS model does not fully acknowledge the persistence and bioaccumulation potential of toxic metals (from the K061 residue) in the environment.

The Agency disagrees with these commenters. As modified, the generic exclusion requires facilities managing nonhazardous HTMR residues to dispose of the material in a Subtitle D disposal unit. As such, the Agency believes that it is appropriate to estimate the transport of contaminants using a ground water model that evaluates disposal conditions that could be encountered in a Subtitle D disposal setting, such as the VHS model. In applying the model, the Agency makes a variety of assumptions to account for a reasonable worst-case disposal scenario. The VHS model assumes that the waste is disposed in an unlined landfill (a normal Subtitle D situation). The model mathematically simulates the migration of toxicant-bearing leachate from the waste into the uppermost aquifer, and the subsequent dilution of the toxicants due to dispersion within the aquifer. The Agency uses this model to predict the maximum concentration of the diluted toxicants at a hypothetical receptor well (or compliance point) located 500 feet from the disposal site.
These are all situations that could arise in Subtitle D disposal settings.
The VHS model was developed to be conservative, and because it is used as an evaluation tool to identify wastes to be excluded from regulation as hazardous, the Agency believes that its use is justified here.

Six commenters believed that the dilution and attenuation factor (DAF) employed by the Agency is inappropriately conservative. For the reasons just stated, the Agency believes a DAF of 6.3 is justified and necessary to ensure that wastes meet the Agency's levels of concern prior to being disposed of as nonhazardous.

The Agency notes that the generic exclusion levels for lead were lowered to reflect the new action level of 0.015 mg/l contained in an Office of Drinking Water regulation (56 FR 26460) which was promulgated after the proposed K061 rule. Several commenters believe that it is inappropriate to base the maximum allowable exclusion level on the new action level for lead, instead of the MCL. The commenters noted that the recent lead rule did not immediately revoke the existing MCL, and allows the MCL to remain effective until November 9, 1992. Furthermore, they argue that the lead action level of 0.015 mg/l is not an enforceable, health-based standard, citing EPA's preamble language to the rule that states that the action level is not equivalent to an MCL. Commenters also noted that past delisting evaluations have used existing MCLs as the bases for delisting decisions, and that the current MCL of 0.05 mg/l should be used in today's rulemaking.

The commenters are correct in stating that delisting evaluations have used -MCLs to derive acceptable delisting levels. However, in the absence of formal MCLs, the Agency has also used other appropriate health-based levels to establish delisting levels. In the absence of a new MCL for lead, the Agency believes that prudence requires that the exclusion level be established using the more conservative action level of 0.015 mg/l. EPA

established the new treatment standard for lead instead of a MCL because, as EPA concluded in the preamble to the final rule there is no apparent threshold for various health effects associated with lead. Given that the Agency's goal is to minimize lead exposure among sensitive populations, however, the treatment standard with an action level was established. While the action level is not a formal MCL, EPA stated in the preamble to the lead rule that the level of 0.015 mg/l is "associated with substantial public health protection." (See 56 FR 26477.)

While the commenters are also correct in stating that the existing lead MCL of 0.05 mg/l will remain in effect until November 9, 1992, the Agency believes the use of this level in setting the exclusion level would be inappropriate. The effective date for the action level and accompanying treatment standard for lead were delayed in order to allow public drinking water systems sufficient time to comply with this new rule. The Agency does not believe that to establish exclusion levels using an old MCL that will soon be superseded by a more stringent standard is sufficiently protective of public health.

2. Product Uses of Residues From K061 Treatment

The generic exclusion of K061 residues in this rule applies only to residues which are disposed of in Subtitle D units (i.e., landfills or piles). As EPA noted at proposal, the majority of these slags are not landfilled, but rather are used in a manner constituting disposal as road base material, or (less often) as an anti-skid material (56 FR 15024). EPA solicited comment on methods to evaluate exposures from road base and anti-skid uses. Several commenters believed that the reliance on the VHS model for analyzing HTMR residues is inappropriate and unprotective when the material is used as an anti-skid or road bed material, since not all potential exposure pathways are evaluated. On the other hand, one commenter believed that the use of the VHS model greatly exaggerates the degree of ground water contamination that could result from use of HTMR residues as a road base material.

Although EPA received comments concerning possible risks from road uses (in particular, inhalation due to improper handling during transportation, and exposure to lead accumulation in dust and surface soils), no data, methods, or models were submitted. The Agency has decided that its regulatory tools for evaluating road base and anti-skid uses are too uncertain for the Agency to make a final decision at this time--particularly given the very short time-frame of this rulemaking--as to whether residue used as road base or anti-skid material should be excluded. The VHS model evaluates possible risks posed by landfill disposal. It may also be suitable for evaluating residue used as a road base material, since this situation may be viewed as similar to (or more protective than) a capped landfill. The Agency has not had time to make a full technical assessment of this point. The VHS model alone may not be fully suitable for evaluating the safety of slag used as an anti-skid material, because this apparently uncontrolled use may present exposure pathways (i.e., airborne inhalation and surface runoff) that the model does not consider. Thus, the exclusion levels apply only for those modes of management that EPA currently feels confident in evaluating with the VHS model, namely disposal in a land disposal unit.

This case differs from other delistings in that EPA has never before evaluated a situation where the waste would be used in a manner constituting disposal, raising the concern that the VHS (or other groundwater model) no longer simulates a worst-case scenario. (EPA notes in addition that it has considered air blown dust exposure pathways in other delistings, but views the situation presented in today's action as different. Previous situations involved possible exposures from air-born losses in transit whereas today's action potentially involves continual

deposit of waste over a wide expanse of road systems.) Thus, EPA does not view today's action as calling into question determinations made in earlier, site-specific delistings.

Under current regulations, if a hazardous waste is used in a manner constituting disposal, it is exempt from further regulation, provided it undergoes a chemical reaction so as to be inseparable by physical means, and provided it meets the land disposal restrictions treatment standards for each hazardous constituent that it contains (40 CFR 266.20). Thus, under today's rule, such practices as use of the HTMR residue as road base or anti-skid material are not immediately prohibited (provided the residue meets the treatment standard). EPA intends shortly to propose amendments to 40 CFR 266.20 that may, if ultimately finalized, require further controls on all hazardous waste-derived products used in a manner constituting disposal, including a demonstration by the producer of such materials that the materials are used legitimately and safely. EPA intends to further evaluate the uses of K061 HTMR residue as part of that proceeding.

3. Tracking Requirements

The generic exclusion for K061 HTMR residues that meet the exclusion levels (in part 261) and treatment standards (in part 268), and that do not exhibit any hazardous characteristics, is limited, as already discussed, to such waste that is disposed of in Subtitle D units. Because K061 HTMR residues are hazardous at the point of initial generation, EPA believes that tracking and certification are needed to ensure proper handling. A modified tracking system for the waste, like that promulgated in the Third Third rule for characteristic wastes that have met the treatment standards and exhibit no hazardous characteristics (55 FR 22662-22664), will apply. Under this tracking system, a notification and certification must be sent to the appropriate EPA Regional Administrator or State authorized to implement the part 268 requirements for each shipment sent to a Subtitle D unit.

4. Testing Requirements

The land disposal restriction program imposes site-specific testing requirements in order to verify that regulatory requirements have been satisfied. The Agency proposed that, for the purpose of determining eligibility for the generic exclusion, testing of residues from HTMR of K061 be required at a frequency specified in the waste analysis plans of treatment facilities. The Agency solicited comment on whether more detailed testing requirements are necessary. Some commenters argued that quarterly testing of composite samples of nonwastewater residues resulting from HTMR processing of K061 should be sufficient to demonstrate compliance with the exclusion criteria; other commenters indicated that a more frequent and detailed testing regime than occurs under waste analysis plans was necessary. Various commenters recommended monthly, weekly, or daily testing.

The Agency has decided to require that treatment facilities which wish to meet the exclusion requirements must test treated wastes at a frequency specified in their waste analysis plan in order to determine whether they have met the exclusion levels. See 40 CFR 268.7(b) and 55 FR 22669. In the case where treatment is performed at the generator's site is a way not requiring a permit, testing is required at a frequency specified in the self- implementing waste analysis plan required by 40 CFR 268.7(a)(4). However, at a minimum, a facility's waste analysis plan (or a generator's self- implementing waste analysis plan) must specify that composite samples of the K061 HTMR slag residues be collected and analyzed quarterly and/or when the process or operation changes (see 40 CFR 264.13(a)(3) and

265.13(a)(3)). The Agency believes that it is appropriate to allow the frequency of testing beyond the quarterly minimum to be determined in the waste analysis plan, taking into account facility-specific factors such as waste types, waste variability, quantity, batch size, and type of treatment unit. The Agency believes that permit writers will consider these factors when establishing testing conditions in the waste analysis plans.

5. Applicability to Other Types of Treated K061

The exclusion discussed above applies only to those nonwastewater residues generated by HTMR processes, and not to others such as hydrometallurgical processes or stabilization. The Agency has insufficient data to fully evaluate the residues from hydrometallurgical processes; however, the limited available information indicates a high leachability. Moreover, given the Agency's current paucity of information, EPA has no idea what an appropriate testing regime for residues from hydrometallurgical processes would be, even assuming that these residues could meet the exclusion levels. EPA thus believes it unwarranted to make residues from hydrometallurgical recovery processes eligible for this generic exclusion at this time.

There are several reasons for not excluding stabilized residues generically. The HTMR residues demonstrate consistent leaching behavior whereas stabilized matrices are quite variable. The chemical bonding that occurs in the high temperature and oxidation/reduction conditions within the HTMR units is inherently different than the bonding that forms the basis of cementitious and pozzolanic stabilization. In addition, the kinetics of the reaction forming the bonds in these HTMR processes are superior to the kinetics of bond formation in cementitious reactions. (Cement is not typically considered set until at a minimum of 72 hours and often not considered fully cured until after 28 days.) Stabilization has also been documented as a process that is highly matrix-dependent and prone to chemical interferences. (Data in support of this conclusion is located in the background documents to the First, Second, and Third Third rules.) Most commercial stabilization facilities have to develop special mixes for each waste type by selecting additives that will enhance curing time and/or product integrity (often measured by comprehensive strength).

Another reason for not allowing stabilized residues to be generically excluded is the possibility of impermissible dilution, which must be considered on a case-by-case basis with stabilization, but not with HTMR. Hence, facility-specific delistings are preferred for stabilized wastes so that the Agency can evaluate waste-to-binder and waste-to-waste ratios and make a determination about treatment versus dilution. Finally, the Agency believes that HTMR is a preferred technique for managing the K061 waste over stabilization technologies, in light of its resource recovery potential, and in light of the differences in volumes of treated wastes. Stabilization generally increases volumes, while HTMR generally decreases volume. Thus, the Agency does not believe it warranted to develop a somewhat technically sketchy generic exclusion for stabilization.

EPA notes that it is not precluding the use of stabilization by today's rule, and that facility-specific delisting remains an option for stabilized K061 wastes. However, due to the inherent differences between HTMR and stabilization stated above and the fact that insufficient data currently exists to propose a generic exclusion for stabilized K061 wastes, the Agency has determined that the generic exclusion levels are not applicable to stabilized K061 residues. The Agency believes that more individualized consideration of stabilization is warranted before residues from the process are delisted.

6. Regulatory Status of Certain K061 Nonwastewater Residues From HTMR

A number of commenters raised the issue of the regulatory status of nonwastewater residues from HTMR processes. Commenters suggested that the Agency approach the issue as an interpretation of the existing federal rules regarding recycling. We have responded to this point above. Other commenters questioned the regulatory status of other side streams, and urged that one side stream in particular, a dross from the splash condenser in an HTMR process which is sent off-site for zinc recovery or re-processed on-site in the HTMR process, not be classified as a solid waste.

Under the federal regulations, hazardous wastes destined for reclamation remain classified as solid and hazardous wastes until reclamation is completed. Reclamation is normally incomplete until the end-product of the process is fully recovered. 50 FR at 633, 634, 655. The line the Agency has traditionally drawn between partially and fully reclaimed material when thermal metal recovery is involved is that secondary materials remain wastes until smelting is completed. Id. at 634 (recovered metals only needing to be refined (the processing step following smelting) are products, not wastes).
This interpretation is consistent with RCRA's cradle-to-grave mandate by retaining authority until a usable metal is recovered. Cf. API v. EPA, 906 F.2d at 741.

The rules also provide for a variance from solid waste classification for materials that have been partially but not fully reclaimed. 40 CFR 261.30(c).
Criteria for granting a variance include the degree of processing that the material has undergone and the degree of further processing required, the value of the material after it has been reclaimed, the degree to which the initially-reclaimed material is like an analogous raw material, the extent to which an end market for the material is guaranteed, and (perhaps most importantly), the extent to which the initially-reclaimed material is handled to minimize loss. 40 CFR 260.31(c).

Applying these rules to the dross from HTMR splash condensers, EPA has decided to amend its rules by excluding from Subtitle C jurisdiction the splash condenser dross residue (hereafter referred to as SCDR) generated by certain HTMR processes. This material is specifically generated as the non-product skimming from the splash condenser, along with recovered zinc and lead meeting Western grade zinc metal specifications (i.e., 98% pure metals), which are products under the rules (see Sec. 261.3(c)(2) final sentence). The dross is presently a solid waste because it is partially but not fully reclaimed (i.e., it still requires smelting or other recovery before a usable metal is extracted), and thus would remain a K061 waste unless it is excluded from the rules. See 40 CFR 261.2(a)(1) and 56 FR at 7144. Based on public comment and corroborating information contained in the record for today's rule, the SCDR is collected directly from the splash condenser and drummed.
It is then stored for short periods (not exceeding two weeks) and sold to a thermal zinc processing facility where it is used as a source of zinc, or reused on-site in the HTMR process, or reprocessed by HTMR on-site. (The SCDR normally contains 50-60% zinc.) At the thermal processing facility (where SCDR is shipped off-site), the drums are stored indoors in a secure manner (on concrete flooring, and with controls against airborne migration). The material is then processed for recovery by crushing, and, in combination with other feedstocks, grinding, and by thermal recovery of zinc.

The SCDR stream is small in volume. In addition, most of the toxic metals that originate in the K061 do not partition to the SCDR: Approximately 90% partition to zinc and lead products or to baghouse dusts. Those toxic metals remaining in the SCDR have reduced mobility from the original K061.

The SCDR does not exhibit a characteristic of hazardous waste. SCDR is also changed in physical form from the original K061. It is no longer a dust, but rather is a solidified matrix.

The Agency evaluated the material against the criteria for determining whether a waste that is partially but not fully reclaimed should still be classified as a solid waste (40 CFR 260.31(c)). Although these criteria were established for a variance determination, EPA believes that they are relevant in determining whether this material should be considered to be "discarded" within the meaning of Sec. 261.2(a)(1). The Agency has received adequate information in this case to exclude the material by rule. In particular, the Agency finds that the SCDR results from substantial processing (as shown by the volume reduction, partitioning of toxic metals to other outputs of the process, change in physical form, and reduction in mobility of toxic metals) (see Sec. 260.31(c)(1)); that the material is sold for value (or reprocessed on-site to recover high concentrations of zinc) (see Sec. 260.31(c)(2)); that the material contains zinc concentrations comparable to those of other non- waste secondary sources of zinc (and more zinc than natural ores) (see Sec.
260.31(c)(3)); that an end market for the material appears assured (see Sec.
260.31(c)(4)); and that it is handled safely up to the point of final reclamation (see Sec. 260.31(c)(5)).

Based on these factors, the Agency has decided to exclude the SCDR from RCRA jurisdiction when it is utilized as a source of zinc in zinc recovery operations, provided it is shipped in drums (if it is sent off-site) and that there is no land disposal of the material before it is recycled. Thus, for example, the material remains a solid waste if it is stored in piles on the land. In such a case, it would be "part of the waste disposal problem," and hence discarded. American Mining Congress v. EPA, 907 F.2d at 1186. In addition, in order for this exclusion to be implementable and to serve as a check against mishandling, EPA is interpreting current rules to require that the HTMR facility maintain a one-time notice in its operating record or other files stating that the SCDR is generated, then excluded, and what its disposition is. See Sec. 268.7(a)(6), 56 FR 3878.

D. Capacity Discussion

In the proposed rule to establish treatment standards under the land disposal restrictions for high zinc K061 wastes, EPA determined that sufficient capacity exists to treat these wastes and requested comments on its capacity analysis. EPA notes that the inquiry is in some ways academic, given that the time for granting national capacity variances for K061 ended in August 1990. See RCRA section 3004(h)(2). Nevertheless, the information on capacity should be useful to the regulated community and has a bearing on whether portions of today's rule are adopted pursuant to HSWA; therefore, we are presenting it here. It also has some bearing on whether there is any need to perpetuate the existing standards based on stabilization.

Commenters to the proposed rule focused on HTMR capacity. The Agency received comments suggesting that there may not be sufficient HTMR capacity to treat the volumes of high zinc K061 that are generated. Other commenters submitted information to EPA suggesting that other treatment technologies in addition to HTMR (stabilization and extractive metallurgy) can meet the treatment standards for high zinc K061. While the Agency has determined that HTMR is BDAT for high zinc K061, today's rule does not preclude the use of other treatment technologies that can meet the treatment standards established for this waste. For today's rule, the Agency has confirmed the generation volume of high zinc K061 and the available treatment capacity for these wastes.

1. Waste Generation

In the proposed rule, EPA estimated that approximately 500,000 tons of high zinc K061 are generated annually. EPA contacted Horsehead Resource Development Company (HRD) and the American Iron and Steel Institute (AISI) to obtain estimates of the annual generation of high zinc K061. HRD is the primary commercial facility that is currently recovering zinc from K061 wastes in HTMR units. HRD's most recent estimate is that the national generation of high zinc K061 will be approximately 415,000 tons in 1991.
AISI, a trade association representing a substantial portion of the generators of all K061 wastes, provides a different estimate of K061 generation. Based on steel production in 1989, AISI estimates that approximately 285,000 tons of high zinc K061 were generated in 1989, which is consistent with data from the TSDR Survey. In this capacity analysis, EPA is using the higher and more recent estimate of 415,000 tons of annual generation of high zinc K061.

2. Current Management Practices

The Agency has received data indicating that most high zinc K061 (about 90 percent) that is treated currently goes through HTMR. The volume of high zinc K061 being stabilized and subsequently land disposed is thus quite low. The Agency believes that this may be due to the existing incentives to recycle high zinc K061. Stabilization and landfilling costs are high, and some states have provided tax incentives not to land dispose of hazardous wastes. Thus, the generators of high zinc K061 that are treating their wastes are doing so primarily by recycling their wastes through HTMR.

3. Available Capacity

In the proposed rule, EPA estimated that the total available HTMR capacity (both commercial and non-commercial) was 553,000 tons per year. The Agency received comments indicating that some of this capacity may not be available and that a substantial portion of HTMR capacity is used to treat low zinc K061. The Agency has confirmed that approximately 550,000 tons of HTMR capacity are currently available to recover zinc through HTMR. However, the bulk of this capacity comes from older processes that may not be capable of achieving the better levels of performance characteristic of more recent HTMR.

Michigan Disposal, Inc. submitted a comment to EPA claiming that chemical fixation and stabilization techniques can meet the K061 treatment standards.
Michigan Disposal's current stabilization capacity for high zinc K061 is approximately 100,000 tons per year. In addition to HTMR and stabilization, extractive metallurgy technologies are available to recover zinc from K061 wastes. Encycle submitted a comment to the Agency showing that their metal recovery process can successfully recover zinc from K061 wastes. Encycle's current extractive metallurgy treatment capacity is approximately 30,000 tons per year. No commenter submitted data to challenge the claim that technologies other than HTMR can meet the treatment standards for high zinc K061.

4. Capacity Implications

Based on the information presented above, sufficient HTMR capacity exists to handle the 1991 demand for zinc recovery from K061 wastes, and excess stabilization and extractive metallurgy capacity is also available.

Therefore, the Agency has determined that there is sufficient capacity to handle the volumes of high zinc K061 requiring treatment. However, if substantial portions of HTMR capacity become unavailable, the situation would differ. This point is relevant in determining whether the exclusions in today's rule are promulgated pursuant to HSWA authority.

III. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State.

The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in authorized States in the interim.

B. Effect on State Authorizations

Today's final rule for treatment standards is finalized pursuant to section 3004(d) through (k) and (m) of RCRA. Therefore, it will be added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and take effect in all States, regardless of their authorization status. As noted above, EPA will implement today's rule in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. Because the rule is finalized pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. The deadline by which the States must modify their programs to adopt today's rule is July 1, 1993. It should be noted that HSWA interim authorization will expire on January 1, 1993 (see 40 CFR 271.24(c)).

An issue arises as to whether the generic exclusion from the derived-from rule and the conditional exclusion from being a solid waste for splash condenser dross residue in the rule are adopted pursuant to HSWA. EPA views this entire rule, including the exclusions, as a HSWA regulation because it is a necessary part of the process of setting prohibitions and treatment standards for K061 wastes. The Agency has determined that the HTMR process is BDAT for K061 wastes. Comments have indicated persuasively that without relief from the derived-from rule and solid waste status a number of HTMR

processes will not be commercially viable. This is particularly true of the newer, optimized HTMR processes that are capable of generating residues below the generic exclusion levels. See, e.g., Comments of International Mill Service, Inc., pp. 49-57. The Agency believes it important to assure existence of the truly best available technology, namely the newer, optimized HTMR operations, to process K061 wastes. The generic exclusion from the derived-from rule and conditional exclusion from being a solid waste is a necessary step in assuring existence of this optimized capacity, and so is an integral part of the whole prohibition/treatment standard process.

Consequently, the Agency views these exclusions to be adopted pursuant to HSWA.

Section 40 CFR 271.21(e)(2) requires States that have final authorization to modify their programs to reflect Federal program changes and to submit the modification to EPA for approval. The deadline by which the State must modify its program to adopt this regulation will be determined by the promulgation of the final rule in accordance with 40 CFR 271.21(e). These deadlines can be extended in certain cases (see 40 CFR 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

Authorized States are only required to modify their programs when EPA promulgates Federal regulations that are more stringent or broader in scope than the existing Federal regulations. For those Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. This is a result of section 3009 of RCRA, which allows States to impose regulations in addition to those in the Federal program. EPA has determined that the generic exclusion and the conditional exclusion for splash condenser dross residue are less stringent or reduce the scope of the Federal program. Therefore, authorized States are not required to modify their programs to adopt regulations that are equivalent or substantially equivalent.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modification is approved. Of course, States with existing standards may continue to administer and enforce their standards as a matter of State law.

In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application.

However, the State must modify its program by the deadline set forth in 40 CFR 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

IV. Regulatory Impact

A. Executive Order 12291

Executive Order 12291 requires that the regulatory impact of potential

Agency actions be evaluated as part of the process of developing regulations.

In addition, Executive Order 12291 requires that regulatory agencies prepare a Regulatory Impact Analysis in connection with major rules (Section 3).

Major rules are defined in section 1(b) as those which are likely to result in an annual effect on the economy of $100 million or more, a major increase in costs or prices for consumers or individual industries, or significant adverse effects on competition, employment, investment, productivity, innovation, or international trade.

Today's rule establishes treatment standards for a waste originally regulated in the First Third land disposal restrictions rule (53 FR 31162). The Regulatory Impact Analysis (RIA) for the First Third rule costed the K061 high zinc wastes based on HTMR. The post-regulatory cost for a volume of K061 high zinc waste of approximately 172,000 tons was estimated to be $58 million per year (1987 dollars).

Today's rule establishes numerical treatment standards based on HTMR. Currently, due to construction of additional recovery process capacity, the Agency has determined that there is adequate HTMR capacity for K061 high zinc wastes. The Agency estimates that 415,000 tons of K061 high zinc are generated each year. Of this volume, the Agency estimates approximately 90% to be undergoing treatment by use of HTMR, with the remaining 10% going to stabilization.

Therefore, in the worst case assumption, only 10% of high zinc K061 would be affected by today's rule. If the 10% annual generation portion of high zinc K061 which is now being treated by stabilization was to be treated by HTMR, the incremental cost of this change is estimated to be $1 million per year. This alteration in management practices represents the most severe cost scenario which could be incurred as a result of this rule. However, generic exclusion of the residue from the HTMR process will spare the industry Subtitle C disposal costs; this savings has not been reflected in the annual incremental cost estimate provided above, and would make the cost lower than the $1 million estimated. Therefore, it is estimated that this rule will not impose a large cost upon industry, and is estimated to be a minor rule according to Executive Order 12291.

This rule was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291.

B. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., whenever an agency is required to issue a general notice of rulemaking for any final rule, it must prepare and make available for public comment a Regulatory Flexibility Analysis which describes the impact of the rule on small entities (i.e., small business, small organizations, and small government jurisdictions). The Administrator may certify, however, that the rule will not have a significant economic impact on a substantial number of small entities. Since the rule allows the regulated community to continue to use existing management practices, and in the worst case scenario only affects 10% of high zinc K061 waste, the Administrator certifies that this regulation will not have a significant economic impact on a substantial number of small entities, and therefore, does not require a Regulatory Flexibility Analysis.

C. Paperwork Reduction Act

The information collection requirements in this rule were promulgated in

previous land disposal restriction rulemakings and approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et. seq., and have been assigned OMB control number 2050-0085. No new information collection requirements are being promulgated today.

Send comments regarding any aspect of this collection of information to Chief, Information Policy Branch, PM-223Y, U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for EPA."

V. List of Subjects in 40 CFR Parts 261, 268, and 271

Administrative practice and procedure, Designated facility, Environmental protection, Hazardous materials, Hazardous materials transportation, Hazardous waste, Intergovernmental relations, Labeling, Packaging and containers, Penalties, Recycling, Reporting and recordkeeping requirements, Waste treatment and disposal.

Dated: August 8, 1991.

F. Henry Habicht,
Acting Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. In Sec. 261.3 paragraph (c)(2)(ii)(C) is added to read as follows:

Sec. 261.3 Definition of hazardous waste.

* * * * *

(c) * * *
(2) * * *
(ii) * * *
(C) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in 40 CFR 260.10 (6), (7), and (12)), that are disposed in subtitle D units, provided that these residues meet the generic exclusion levels identified below for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes.
The generic exclusion levels are:

Maximum for any single composite sample Constituent (mg/l)
Antimony 0.063 Arsenic 0.055 Barium 6.3 Beryllium 0.0063 Cadmium 0.032 Chromium (total) 0.33 Lead 0.095 Mercury 0.009 Nickel 0.63 Selenium 0.16

Silver 0.30 Thallium 0.013 Vanadium 1.26

For each shipment of K061 HTMR residues sent to a subtitle D unit that meets the generic exclusion levels for all constituents, and does not exhibit any characteristic, a notification and certification must be sent to the appropriate EPA Regional Administrator (or delegated representative) or State authorized to implement part 268 requirements. The notification must include the following information: (1) The name and address of the Subtitle D unit receiving the waste shipment; (2) the EPA hazardous waste number and treatability group at the initial point of generation; (3) the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

* * * * *

In Sec. 261.4 paragraph (a)(11) is added to read as follows:

Sec. 261.4 Exclusions.

(a) * * * *

(11) Nonwastewater splash condenser dross residue from the treatment of K061 in high temperature metals recovery units, provided it is shipped in drums (if shipped) and not land disposed before recovery.

* * * * *

PART 268--LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. In Sec. 268.41, Table CCWE is amended by revising the entry for K061 (High Zinc Subcategory--greater than or equal to 15% Total Zinc--Effective until August 7th 1991) and by revising paragraph (b) to read as follows:

Sec. 268.41 Treatment standards expressed as concentrations in waste extract.

(a) * * *

* * * * *

Table CCWE--Constitute Concentrations in Waste Extract

Regulated Commercial hazardous Waste code chemical name See also constituent

* * * * * * * K061, High Zinc, Electric Arc Table CCW in Antimony Subcategory Furnace Dust 268.43 Arsenic Barium Beryllium Cadmium Chromium (Total) Lead Mercury Nickel Selenium Silver Thallium Vanadium Zinc

(...Table continues...)

Wastewaters Nonwastewaters

Concentration Concentration Waste code (mg/L) Notes (mg/L) Notes

* * * * * * * K061, High Zinc, Subcategory NA 2.1 NA 0.055 NA 7.6 NA 0.014 NA 0.19 NA 0.33 NA 0.37 NA 0.009 NA 5 NA 0.16 NA 0.3 NA 0.078 NA Reserved NA 5.3

(b) When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern, except that mixtures of high and low zinc nonwastewater K061 are subject to the treatment standard for high zinc K061.

* * * * *

Sec. 268.42 (Amended)

3.-4. In Sec. 268.42, Table 2 is amended by removing the entry for K061.

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

1. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A--Requirements for Final Authorization

2. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of promulgation in the Federal Register, and by adding the date of publication and the Federal Register page numbers to the following entry in Table 2:

Sec. 271.1 Purpose and scope.

* * * * *

(j) * * *

Table 1.--Regulations Implementing the Hazardous and Solid Waste Amendments of 1984

Promulgation Federal Register date	Title of regulation	reference	Effective date
* * * * * * *	August 19, 1991	Land disposal restrictions & nonwastewaters & conditional exclusion for K061 HTMR splash condenser dross residue	(Insert Federal Register page numbers)	August 8, 1991. for K061
* * * * * * *			
* * * * *			

Table 2.--Self Implementing Provisions of the Hazardous and Solid Waste Amendments of 1984

Self-implementing provision	Federal Register reference	Effective date	RCRA citation
* * * * * * *	August 8, 1991	Prohibition on land disposal of K061 high zinc nonwastewaters	3004(g)(6)(A)	August 19, 1991. 56 FR (Federal Register page numbers).
* * * * * * *			
* * * * *			

(FR Doc. 91-19347 Filed 8-16-91; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 3004 3001 3008 3006 3013 7003 3009 1006 2002 3002 3107 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air

Pollution Control Act (Act of 10/20/65)
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-618 SEC. 201 -- Intelligence Authorization Act for Fiscal Year 1985

Vol. 57 No. 19 Wednesday, January 29, 1992 p 3462

RCRA Revision Checklist 100

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260, 264, 265, 270, and 271

[FRL-4028-2]

RIN 2050-AA76

Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units

Agency: Environmental Protection Agency.

Action: Notice of final rulemaking.

Summary: The Environmental Protection Agency (EPA) is today amending its current regulations under the Resource Conservation and Recovery Act (RCRA) concerning liner and leachate collection and removal systems for hazardous waste surface impoundments, landfills, and waste piles. EPA is also adding new regulations requiring owners and operators of hazardous waste surface impoundments, waste piles, and landfills to install and operate leak detection systems at such time as these units are added, laterally expanded, or replaced. EPA is promulgating most of these regulations in response to the requirements of the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA.

Effective Date: July 29, 1992.

Addresses: The public docket (docket reference code F-92-LLDF-FFFFF) for this rule is in room M2427, US EPA, 401 M Street SW., Washington, DC 20460, and is open from 9 am to 4 pm, Monday through Friday, excluding holidays. Call 202-260-9327 for an appointment to review docket materials. Up to 100 pages may be copied free of charge from any one regulatory docket. Additional copies are $0.15 per page.

For Further Information Contact: The RCRA/Superfund Hotline at 1-800-424-9346 (toll free), or 703-920-9810 in the Washington, DC area. For information on technical aspects of this rule, contact Ken Shuster, Office of Solid Waste (OS-340), U.S. Environmental Protection Agency, 401 M St SW., Washington, DC 20460, 202-260-2214.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260, 264, 265, 270, and 271

[FRL-4028-2]

RIN 2050-AA76

Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units

AGENCY: Environmental Protection Agency.

ACTION: Notice of final rulemaking.

SUMMARY: The Environmental Protection Agency (EPA) is today amending its current regulations under the Resource Conservation and Recovery Act (RCRA) concerning liner and leachate collection and removal systems for hazardous waste surface impoundments, landfills, and waste piles. EPA is also adding new regulations requiring owners and operators of hazardous waste surface impoundments, waste piles, and landfills to install and operate leak detection systems at such time as these units are added, laterally expanded, or replaced. EPA is promulgating most of these regulations in response to the requirements of the 1984 Hazardous and Solid Waste Amendments (HSWA) to RCRA.

EFFECTIVE DATE: July 29, 1992.

ADDRESSES: The public docket (docket reference code F-92-LLDF-FFFFF) for this rule is in room M2427, US EPA, 401 M Street SW., Washington, DC 20460, and is open from 9 am to 4 pm, Monday through Friday, excluding holidays. Call 202-260-9327 for an appointment to review docket materials. Up to 100 pages may be copied free of charge from any one regulatory docket. Additional copies are $0.15 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline at 1-800-424-9346 (toll free), or 703-920-9810 in the Washington, DC area. For information on technical aspects of this rule, contact Ken Shuster, Office of Solid Waste (OS-340), U.S. Environmental Protection Agency, 401 M St SW., Washington, DC 20460, 202-260-2214.

SUPPLEMENTARY INFORMATION: Copies of the following documents are available for purchase through the National Technical Information Services (NTIS), U.S. Department of Commerce, Springfield, VA 22161, phone 1-800-553-6847 or 703-487-4650: (1) U.S. EPA, "Compilation of Current Practices at Land Disposal Facilities", January 1992; (2) U.S. EPA, "Action Leakage Rates for Leak Detection Systems", January 1992.

Preamble Outline

I. Authority

These regulations are being promulgated under authority of sections 3004, 3005, 3006, and 3015 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6924, 6925, 6926, and 6936.

II. Background

On November 8, 1984, Congress enacted the Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), placing stringent new requirements on the land disposal of hazardous waste. Among other requirements, Congress amended section 3004 of RCRA and added section 3015 to impose specific design standards for land disposal units.

Section 3004(o)(1)(A) of RCRA, added by HSWA, requires each new landfill and surface impoundment, and each replacement and lateral expansion of a landfill and surface impoundment for which an application for a final permit determination is received after November 8, 1984, to install two or more liners (i.e., a double-liner system) and a leachate collection system above (for landfills) and between the liners. Section 3004(o)(5)(A) of RCRA requires EPA to promulgate regulations or issue technical guidance implementing the requirements of section 3004(o)(1)(A) by November 8, 1988. These HSWA requirements for double liner systems are intended to prevent the migration of hazardous constituents to ground water from land disposal units. Until the effective date of regulations promulgated under section 3004(o)(5)(A), Congress provided that an interim statutory double-liner standard in section 3004(o)(5)(B) could be used to meet the section 3004(o)(1)(A) double-liner system requirement.

Section 3004(o)(4) of RCRA requires EPA by May 8, 1987, to promulgate standards requiring new landfills, surface impoundments, waste piles, land treatment units, and underground hazardous waste tanks to use approved leak detection systems. The statute defines an "approved leak detection system" as a system or technology that EPA determines to be "capable of detecting leaks of hazardous constituents at the earliest practicable time." The term "new units" is defined as those units on which construction commences after the date of promulgation of the Agency's rule for leak detection systems. The impact of this language upon the applicability of this rule between today's promulgation and the effective date July 29, 1992 is discussed elsewhere in this preamble (See Section IV.A.).

Section 3015(a) of RCRA establishes standards for interim status waste piles. Any new waste pile, or replacement or lateral expansion of an existing waste pile at an interim status facility, must comply with requirements for liners and leachate collection systems or equivalent protection provided in regulations issued by EPA under section 3004 of RCRA before October 1, 1982, or revised under section 3004(o) of RCRA with respect to waste received beginning May 8, 1985.

Section 3015(b) of RCRA establishes standards for interim status surface impoundments and landfills. Any new unit, or replacement or lateral expansion of an existing unit at an interim status facility, is subject to the requirements promulgated under section 3004(o)(1) (relating to double-liners and leachate collection systems), with respect to waste received beginning on May 8, 1985.

The HSWA requirements described above either directly amended or directed the Agency to amend the existing RCRA liner standards for new hazardous waste landfills, surface impoundments, and waste piles issued by EPA on July 26, 1982 (47 FR 32262). On July 15, 1985, EPA issued a final rule (50 FR 28702) amending the existing liner standards by codifying the new liner standards of sections 3004(o)(1)(A), 3004(o)(5)(B), and 3015 (a) and (b) that

were to become effective immediately or shortly after the enactment of HSWA, as directed by the statute.

On March 28, 1986 (51 FR 10706), under section 3004(o)(5)(A) of RCRA, EPA proposed amendments to the statutory double-liner and leachate collection system standards for surface impoundments and landfills codified in EPA's regulations on July 15, 1985. The proposal set forth two types of designs for double-liner systems. One design consisted of a geomembrane (then referred to as a flexible membrane liner (FML)) as the top liner and a composite bottom liner consisting of a geomembrane underlain by compacted soil material to minimize flow through the geomembrane component should a breach occur, and having a hydraulic conductivity of no more than 1×10^{-7} cm/sec. The other proposed double-liner design consisted of a geomembrane top liner and a bottom liner constructed to prevent migration through the liner through the post-closure period and of at least 3 feet of compacted clay or other compacted soil material with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. On April 17, 1987, EPA published a notice (52 FR 12566) requesting additional comments on certain aspects of the March 28, 1986 proposal. Specifically, EPA requested comments on data that demonstrated the advantages of a composite bottom liner versus a compacted soil material bottom liner. EPA also noticed the availability of two draft technical guidance documents for the design, construction, and operation of single- and double-liner systems and leachate collection systems. EPA solicited comments from the general public on the draft technical guidance documents.

On July 14, 1986 (51 FR 25422), EPA promulgated leak detection system requirements for underground hazardous waste tanks. In promulgating these regulations, EPA partially fulfilled its mandate under section 3004(o)(4) of RCRA to establish leak detection system requirements.

On May 29, 1987 (52 FR 20218), EPA proposed a rule establishing leak detection system requirements to fully implement section 3004(o)(4) of RCRA. The proposal specified design standards for leak detection systems for new and replacement landfills, surface impoundments, land treatment units, and waste piles, and for lateral expansions of these units at both permitted and interim status facilities. The proposal also expanded the double-liner requirements to waste piles. The proposal also included a requirement for a construction quality assurance program to be implemented by owners and operators to ensure the proper construction, installation, and closure of these units. Finally, the proposal included a requirement to develop a response action plan specifying actions that would be taken in reaction to liquid flow into the leak detection system above action leakage rates proposed by the owner or operator and approved by the Regional Administrator.

Today's rule finalizes EPA's proposed actions of March 28, 1986 and May 29, 1987, and completes the Agency's statutory rulemaking responsibilities imposed by RCRA sections 3004(o)(4) and 3004(o)(5)(A). EPA has not included additional leak detection standards for permitted land treatment units in today's rule because, as explained later in today's notice, existing unsaturated zone monitoring requirements in §§ 264.278 and 265.278 for such units are sufficient to ensure the detection of leaks at the earliest practicable time.

III. Summary of Today's Rule

A. Summary of Rule

Today's rule modifies the existing double-liner and leachate collection and removal system requirements for new and replacement surface impoundments and landfills and for lateral expansions of these units, including those units at interim status facilities. New surface impoundment and landfill units for which construction commences after January 29, 1992, and replacement units reused after and lateral expansions of existing units for which construction commences after July 29, 1992 must have a double liner consisting of a top liner designed to prevent the migration of hazardous constituents into the liner during the active life and post-closure period (e.g., a geomembrane) and a composite bottom liner consisting of a geomembrane underlain by at least 3 feet of compacted soil material having a hydraulic conductivity of no more than 1×10^{-7} cm/sec. EPA is also extending the revised landfill double-liner and leachate collection and removal system requirements to new waste pile units for which construction commences after January 29, 1992, and replacement units reused after and lateral expansions of waste pile units for which construction commences after July 29, 1992.

Today's rule also requires a leak detection system for each new surface impoundment, waste pile, and landfill for which construction commences after January 29, 1992, and each replacement surface impoundment, waste pile, and landfill reused after, and each lateral expansion of these units for which construction commences after July 29, 1992. The leachate collection and removal system drainage layer immediately above the bottom composite liner at these units must be used as the leak detection system. The drainage layer functioning as the leak detection system must meet minimum design criteria and ensure that leaks are detected at the earliest practicable time. Specifically, the drainage layer bottom slope must be one percent or more. If granular material is used in the drainage layer, it must have a minimum hydraulic conductivity of 1×10^{-2} cm/sec for waste piles and landfills and 1×10^{-1} cm/sec for surface impoundments and a minimum thickness of 1 foot. If synthetic drainage material is used in the drainage layer, the drainage material must have a minimum hydraulic transmissivity of 3×10^{-5} m²/sec for waste piles and landfills and 3×10^{-4} m²/sec for surface impoundments. These transmissivities are equivalent to the above hydraulic conductivities and thickness specifications for granular drainage layers. EPA is requiring that each unit have a leak detection sump to collect and remove liquids, sized to prevent liquids from backing up into the drainage layer. In lieu of meeting these requirements, the owner or operator may receive a variance for an alternative leak detection system that functions in an equivalent manner.

EPA is establishing a site-specific action leakage rate that specifies a liquid flow rate detected in the leak detection system sump that warrants followup actions by the owner or operator. Owners and operators are required to develop a response action plan specifying monitoring, inspection, and corrective measures to be implemented if the action leakage rate is exceeded.

The Agency is requiring owners and operators of units affected by today's rule to develop a construction quality assurance (CQA) program for various components of surface impoundments, waste piles, and landfills. The program will be implemented through a construction quality assurance plan that the owner or operator prepares to ensure that the constructed unit meets or exceeds all design criteria, plans, and specifications.

Owners or operators of facilities applying for a permit for new surface impoundments, waste piles, and landfills must submit information on liners and leak detection system designs, the action leakage rate, the response action plan, and CQA plans as part of the permit application. For new and replacement surface impoundment, waste pile, and landfill units, and lateral

expansions of existing units at permitted facilities, owners and operators must submit this information as part of a permit modification request. For affected units at interim status facilities, the owner or operator must submit proposed action leakage rates, response action plans, and a certification that construction has been completed according to the design specifications in the CQA plan to the Agency in advance of the receipt of wastes. Liner and leak detection system designs and CQA plans need not be submitted to EPA, but must be maintained on site.

B. Achievement of EPA Program Goals

In developing today's rule, EPA paid careful attention to several principles that now guide its environmental programs: Pollution prevention, ground-water protection, cost-effective policies which provide protection of human health and the environment, flexibility in implementation, and fostering of an effective State-Federal partnership. Today's rule incorporates each of these principles.

The primary focus of today's rule is on pollution prevention and, more specifically, on ground-water protection. Effective liner and leak detection systems will minimize the potential for releases of hazardous constituents from hazardous waste land disposal units to underlying ground water. In this way, today's rule complements the Agency's waste minimization policies, which seek to reduce the quantities of waste produced, and the RCRA land disposal restrictions programs. Today's liner and leak detection standards contribute to pollution prevention by providing for the containment and isolation of hazardous waste after final disposal.

In today's rule, EPA has taken an important step in implementing its Ground-Water Principles, recently published in the Agency's "Protecting the Nation's Ground Water: EPA's Strategy for the 1990's (21Z-1020, July 1991). A central theme in EPA's ground-water policy, enunciated in the principles, is that prevention of ground-water contamination is often more cost effective and environmentally more desirable than remediation of ground-water after contamination. Experience in the RCRA and Superfund programs demonstrates that improperly designed landfills, surface impoundments, and waste piles can result in ground-water contamination. At the same time, remediation of contaminated ground-water has proved to be time-consuming, expensive, and in some cases technically infeasible. On the other hand, the release of hazardous constituents from landfills, surface impoundments, and waste piles can largely be eliminated through good design and construction.

Regarding costs, it should be noted that most of the standards incorporated into today's rule are already widely in use at hazardous waste facilities and are generally considered good engineering practices. Because HSWA required new landfills and surface impoundments, and lateral expansions and replacements of existing landfills and surface impoundments, for which an application for a permit is received after November 8, 1984, and those units in interim status receiving waste after May 8, 1985, to be designed with double-liner and leachate collection systems, most facilities already meet many of the design standards of today's rule. In addition, many facilities have designed units that are in compliance with today's final rule in anticipation of the promulgation of a final rule based on the March 28, 1986, and May 29, 1987 proposed rules. Thus, for a relatively small increase in cost (to those facilities that are not already meeting the standards of today's rule), the rule may save large corrective action costs. However, since all new units must comply with all the provisions of this rule and bear the corresponding costs, EPA has carefully chosen the minimum technical standards that adequately protect human health and the environment.

Although today's rule includes specific design standards, EPA has taken care to ensure that its requirements can be flexibly implemented. The presence of specific standards in the rules will simplify compliance by the regulated community, implementation by EPA and State permit writers, and enforcement by EPA and state officials. EPA, however, recognizes that national design standards may not be appropriate for every site and that technologies may improve. Therefore, today's rule allows EPA or an authorized State to approve alternative designs, as long as they achieve comparable or better levels of performance.

Similarly, today's rule requires construction quality assurance—a critical feature in land disposal unit construction—but it does so through general narrative performance standards. Thus, facility owners or operators can tailor the details of their construction quality assurance plans to the specifics of their facilities. These and similar provisions of today's rule ensure that the rule can be flexibly implemented, in a way that accommodates each regulated unit.

Finally, in today's rule EPA has paid special attention to eliminating the frequent strains resulting from the joint implementation of RCRA by EPA and the States. In proposals for this rule, EPA laid out a complicated State authorization process, which would require EPA to implement some parts of the rule for selected land disposal units and the States to implement other parts for the same units, over different timeframes. After radically simplifying the proposal, EPA is now promulgating most of the rule under HSWA, which avoids much of the confusion of joint implementation at individual units. In this way, today's rule is consistent with the Agency's attempt to simplify and rationalize Federal and State implementation of RCRA. Today's rule also requires fewer reports and mandatory Agency reviews than the proposal while still providing opportunity for Agency reviews.

IV. Detailed Discussion of the Final Rule

A. Scope of the Rule

The double liner and leak detection standards in today's final rule apply to new and replacement landfills, surface impoundments, and waste piles, and lateral expansions of these units. Today's rule applies, as it was proposed in May, 1987, to these units regardless of their permit status, including facilities that were issued permits prior to and after the enactment of HSWA and facilities that are still in interim status. In consideration of the explicit language of section 3004(o)(4) defining a new unit as a unit for which construction commences after the promulgation date of today's rule, the Agency maintains that the permit does not act as a shield with respect to the leak detection requirements under today's rule for new units. Because lateral expansions and replacement units are comparable in their environmental impact, the Agency has, as a policy matter, decided to similarly remove the permit as a shield for leak detection systems at replacement units and lateral expansions of existing units. EPA believes that the opportunity for constructing replacement units and lateral expansions of existing units to meet today's requirements is similar to that for new units. In addition, by requiring replacement units and lateral expansions at existing units to meet today's requirements, EPA is ensuring that these units meet the same minimum technological requirements and provide the same protection of human health and the environment. Therefore, the Agency is amending § 270.4 to require

owners or operators to apply for a permit modification to meet the standards of today's final rule. Owners and operators at permitted facilities may not begin construction of units subject to today's requirements, until the permitting Agency has approved the owner or operator's permit modification (see § 270.42).

Today's rule exempts certain replacements of permitted surface impoundment, waste pile, and landfill units from today's double-liner and leak detection system requirements. However, EPA has modified the scope of the exemption since the May 29, 1987 proposal. Sections 264.221(f), 264.251(f), 264.301(f), 265.221(c), 265.254(a), and 265.301(c) in today's rule exempt replacements of surface impoundments, waste piles, and landfills from the double-liner system and leak detection requirements if the replacements meet the following conditions: (1) The existing unit was constructed in compliance with the design standards for double-liner and leachate collection systems in sections 3004 (o)(1)(A)(i) and (o)(5) of RCRA; and (2) there is no reason to believe that the liner system is not functioning as designed. Of course, any replacement surface impoundment, waste pile, or landfill unit that otherwise qualified for a variance from the double-liner and leachate collection system requirements pursuant to sections 3004(o)(2), 3004(o)(3), or 3005(j) of RCRA remains exempt from today's double-liner and leak detection requirements.

In the May 29, 1987 proposed rule, EPA considered exempting replacements that were constructed in compliance with existing part 264 single-liner requirements for surface impoundments, waste piles, and landfills. EPA acknowledges that the arguments for this exemption in the proposed rule were erroneous and has decided not to exempt replacements of permitted single-lined surface impoundments, waste piles, and landfills in today's final rule, because owners or operators of these units have no early method of detecting whether the single liner is leaking. Owners or operators of such units would have to rely on ground-water monitoring to determine if the single liner was leaking. EPA agrees with the commenters that this is inconsistent with the statutory goal of leak detection at the earliest practicable time and of preventing leakage out of the unit.

The May 29, 1987 proposal indicated an effective date for most of the provisions, including the leak detection requirements, of six months after promulgation. The July 29, 1992 effective date of today's rule is consistent with that proposal and with section 3010(b) of RCRA. It is important to note that section 3004(o)(4)(B)(ii) defines "new units" as those units on which construction commences after date of promulgation (versus the effective date) of the Agency's rule for leak detection systems. Therefore, due to the clear language of the statute, construction of new landfills, new surface impoundments, and new waste piles is defined with respect to the promulgation date but today's final regulations become effective 6 months after promulgation. This interpretation is consistent with the Agency's definition of "new tank systems" discussed in the final hazardous waste tank requirements (51 FR 25446).

During the six month time period between promulgation and the effective date, owners and operators of new units have time to determine and then make any necessary adjustments to their designs, contract specifications, and other pre-construction plans so that the requirements of today's rule are satisfied by the effective date. This also allows adequate time, in the Agency's opinion, for preparation and submission to the Agency of documents and requests for approvals that are prerequisites to construction and operation. For permitted facilities, this includes permit modification requests. Similarly, any interim status facility that adds a new unit following the promulgation date is expected to comply with the requirements in today's rule to submit, along with their notification under §§ 265.221(b), 265.254(a), or 265.301(b), proposed action leakage rates and a response action plan, if the due date for that notification (i.e., at least 60 days prior to receipt of waste in the new unit) falls before the effective date.

Thus, the Agency anticipates that at the few facilities (both permitted and interim status) that plan to develop new units during this six month period, most of the effort will be the preparatory design and administrative work needed to comply by the effective date. If owners or operators at interim status facilities should commence construction of new units during this period, the construction would be subject to Agency review upon the effective date of today's requirements.

Replacement landfills, surface impoundment, or waste piles, or lateral expansions to those units are, in the absence of specific statutory direction, subject to this rule after July 29, 1992 (i.e., six months after promulgation as normally provided under section 3010(b) of RCRA).

It should be noted that EPA interprets the term "construction commences," as used in the "new unit" definition of section 3004(o)(4)(B)(ii) and in today's rule, according to its definition within the § 260.10 definitions of "existing hazardous waste management (HWM) facility" and "existing tank system." That is, a unit has commenced construction if (1) the owner or operator has obtained the Federal, State and local approvals or permits necessary to begin physical construction, and either (2)(i) a continuous on-site, physical construction program has begun; or (ii) the owner or operator has entered into a contractual obligation—which cannot be canceled or modified without substantial loss—for physical construction of the facility to be completed within a reasonable time. Therefore, any new unit that has commenced construction, according to this long-standing Agency definition of the term, prior to the promulgation date (i.e., today's **Federal Register** publication date) is outside the scope of today's rule. Similarly, any replacement unit that is reused (unlike new units and lateral expansions, construction is not a necessary step prior to reuse of a replacement unit) or lateral expansion on which construction commences prior to the effective date (i.e., six months after today's **Federal Register** publication date) of this rule is also beyond the scope of today's rule.

Today's rule includes a definition of "replacement unit" in § 260.10. EPA is today defining a replacement unit as a unit (1) from which all or substantially all of the waste is removed, and (2) that is subsequently reused after July 29, 1992 to treat, store, or dispose of hazardous waste. This definition, which is similar to the May 29, 1987, proposal, is consistent with the definition EPA has used in implementing the statutory liner requirements of section 3004(o)(5)(B) for replacement units.

In the 1987 proposal, EPA excluded from the definition of replacement units those units from which waste was removed and treated in preparation for closure and only the treated waste was replaced in the unit. EPA explained in the proposal that replacement units are units that remain in service for active waste management, not units that are permanently taken out of service through closure. EPA believed this approach not only reflected statutory intent, but also would encourage (or at least not discourage) environmentally beneficial activities during closure (e.g., waste treatment), because owners or

operators would not have to retrofit closing units from which waste was removed and replaced.

Today's definition of "replacement unit," like the proposal, exempts certain units undergoing closure. However, th exemption is slightly expanded in that today's definition of replacement unit would also exempt those closing units that receive compatible wastes from other closing units and/or corrective action areas at the facility, provided that such use of the closing unit is approved by EPA (or an authorized state) in the facility's closure plan or corrective action program. The Agency believes that the expanded exemption is a logical extension of the proposal since it is similarly necessary to encourage environmentally beneficial activities (e.g., treatment and consolidation of compatible wastes from on-site closing units into one unit, waste removal to inspect a liner, expeditious closure of other on-site units) that may not otherwise occur if the owner or operator had to retrofit the closing unit to meet today's liner and leak detection system requirements.

Thus, units and activities qualifying for exemption from the "replacement unit" definition are limited to the following conditions and safeguards: (1) The activity must be reviewed and approved by EPA or an authorized state as part of the closure plan or corrective action approval process, including a corrective action order; (2) only closing units that have notified EPA in accordance with § 264.113 or § 265.112 or notified an authorized State, may qualify; and (3) only compatible waste and debris that are from closing units or corrective action areas on-site may be deposited in these units. For a unit to qualify for this exemption, off-site waste, new waste generated on site, and waste from active units on site may not be disposed of in the unit.

The situations EPA envisions as qualifying for this exemption from the "replacement unit" definition include: (1) Waste is removed from a closing unit, treated (e.g., incinerated, dewatered, or solidified), and returned to the same unit; (2) waste is removed from a closing unit to inspect and/or repair the liner, and the waste is returned to the same unit; (3) scenario 1 or 2, plus waste from other closing units is disposed in the original unit; and (4) scenario 1 or 2, plus waste that is the result of corrective action at the same facility, is placed into the original unit.

Finally, EPA also proposed in the May 29, 1987, rule that the liner and leak detection system requirements apply to significant unused portions of existing units, where those portions did not have double liners and leachate collection systems meeting the minimum technological requirements. Today's rule has dropped this requirement. A number of commenters on the proposal pointed out the difficulty of defining "significant" unused portions of a unit, and EPA was unable to develop an unambiguous definition. Furthermore, after reviewing land disposal units constructed and permitted since 1984 (which is the universe most likely to have portions of units not yet covered by wastes), EPA noted that virtually all of these units were required in their permits to incorporate double liner and leak detection requirements into their respective designs. Therefore, EPA has concluded that it is no longer necessary to extend today's rule to significant unused portions of existing units. It should be noted, however, that lateral expansions of existing units remain subject to today's rule.

B. Standards for Liners and Leak Detection Systems

1. Technical Standards for Liner Systems

Today, EPA is promulgating regulations containing design standards for double liners in accordance with the requirements of section 3004(o)(1) and (o)(5)(A) of RCRA. These standards replace those contained in the interim statutory design provision of section 3004(o)(5)(B) of RCRA that were codified on July 15, 1985 (50 FR 28702).

Today's rule amends the double-liner requirements for surface impoundments and landfills in §§ 264.221(c), 264.301(c), 265.221(a), and 265.301(a). The major change from the existing rule is that the final rule requires owners or operators to install a composite bottom liner. Based on available data and public comments received by the Agency, the double liner system specified in today's rule, with the composite bottom liner, represents the best available technology with respect to: (1) Preventing hazardous constituent migration out of the unit during the active life and post-closure care period, (2) detecting leaks through the top liner at the earliest practicable time, and (3) maximizing the efficiency of the leachate collection and removal system.

Today's rule does not change the existing top liner performance standard for surface impoundment and landfill units. Owners or operators of affected units must still design the top liner to prevent the migration of hazardous constituents into the liner throughout the active life and post-closure period. EPA notes that for purposes of today's rule, the top liner is the liner directly above the leachate collection and removal system serving as the leak detection system (see Technical Standard for Leak Detection Systems in Section IV.B.2 of today's preamble).

The Agency, in the preambles to the July 26, 1982 rule (47 FR 32274) and the March 28, 1986 proposal (51 FR 10709), endorsed geomembranes as meeting the top liner performance standard. EPA was aware of a number of landfill unit designs that included a composite top liner consisting of a geomembrane upper component and a compacted soil or a soil/bentonite blanket lower component. Consequently, EPA raised several questions in the preamble to the May 29, 1987 proposal concerning the use of a composite liner as a top liner and the effect the compacted soil component would have on other components of the double liner system, principally the early detection of a leak through the upper geomembrane.

The Agency received several comments on this issue, all of which were in favor of allowing the use of a composite liner as a top liner. One comment on appropriate standards for a composite liner favored minimum thickness requirements for a compacted soil lower component. Most commenters, however, favored no restrictions on the use of top composite liners.

In response to these comments, EPA is not prohibiting the use of composite top liners in today's rule. A parenthetical reference to geomembranes has been included as an example to illustrate that the performance standard can be met through use of a geomembrane. EPA does not intend that this reference be interpreted to mean that the geomembrane is the only top liner design that will meet the performance standard. EPA does not want to discourage owners or operators from using top composite liners because such liners can provide additional environmental benefits by minimizing the flow rate through a leak in a geomembrane liner and potentially minimizing migration of hazardous constituents by attenuation. Although not specified in today's rule, EPA maintains that the soil component of the top liner, however, should generally not be more than three feet thick since a thickness of 2 to 3 feet adequately serves the purpose of minimizing the flow through the geomembrane component (a lesser thickness may be appropriate for soil/bentonite blankets). EPA finds that this depth balances the increased environmental protection afforded by top composite liners and the ability to detect leaks at the earliest

practicable time. The Agency does not intend, however, to imply that multiple liner systems (including multiple composite liners) or that thicker soil components of bottom liners (e.g., 4 or 5 feet) should be precluded.

EPA notes that such general performance standards provide flexibility which is essential since liner and leak detection system technologies have advanced significantly over the past several years and are continuing to do so. Some examples include the use of geonets, the use of geotextile fabric filters, and better seaming and construction quality assurance. Recent EPA studies show soil/bentonite blankets may be effective and reliable complements to top liners, resulting in a new type of composite top liner. As technologies improve, today's performance standards will allow different materials and designs to be used and specified in permits as site-specific considerations.

Today's rule amends the requirements for bottom liners at surface impoundment and landfill units to require owners and operators of units subject to today's rule to use a composite bottom liner instead of a compacted-soil bottom liner allowed by the interim statutory design. The composite bottom liner required by today's rule specifies that the upper component of the bottom-liner must consist of a geomembrane, and the lower component of the bottom-liner must consist of a minimum of 3 feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. The compacted soil component must be able to minimize hazardous constituent migration in the event of a breach in the geomembrane.

In the March 28, 1988 proposal, EPA offered two options for the bottom liner of the double-liner system. One option corresponded to a compacted soil liner with a maximum hydraulic conductivity of 1×10^{-7} cm/sec and sufficient thickness (minimum 3 feet) to prevent hazardous constituent migration through the liner during the active life and post-closure care period (51 FR 10710). The other proposed option was the composite liner specified in today's rule, consisting of a top component that would prevent hazardous constituent migration into the top component (a geomembrane) and a bottom compacted-soil component with a maximum hydraulic conductivity of 1×10^{-7} cm/sec and the preamble to the proposal recommended a minimum thickness of 3 feet (90 cm).

EPA received comments supporting both bottom liner options. Several commenters argued that the compacted soil bottom liner, coupled with the leachate collection and removal system between the top and bottom liners, would provide adequate protection of the environment. Some of these commenters also proposed the use of a composite top liner with a compacted soil bottom liner. Others supported the use of composite bottom liners as the design best able to enhance leachate detection, collection, and removal efficiency of the leachate collection and removal system between the liners. Several commenters favored the promulgation of performance standards in the rule and the specification of designs and materials in accompanying guidance documents.

After the proposal, EPA compiled information and data on performance of these two bottom liner systems with respect to maximizing leachate detection, collection, and removal, and preventing hazardous constituent migration out of the unit. The liners were evaluated based on leachate collection efficiency, leak detection capability, and leakage through the bottom liner. Results from computer simulations and engineering calculations showed that, on a comparative basis, the composite bottom liner will perform significantly better than the compacted soil liner with respect to the three criteria. The results were summarized in the April 17, 1987 Notice of Availability of Information (52 FR 12566–12575), with more detailed discussion of the calculations and analytical approach contained in the "Bottom Liner Performance in Double-Lined Landfills and Surface Impoundments" (EPA/530-SW-87-013). In the May 29, 1987 proposed rule on leak detection systems, the Agency indicated that it was likely to finalize a rule on double liners that would require a composite bottom liner as the generally applicable standard (52 FR 20251).

EPA also conducted a review of applications submitted for RCRA hazardous waste facility permits between November 8, 1984 and February 1987 to determine the type of bottom liner selected for installation at new landfills and surface impoundments. Of some 183 units for which permit applications were submitted as of February 1987, only seven units were to be constructed with compacted soil bottom liners. The vast majority of owners or operators selected the composite bottom liner rather than a compacted soil bottom-liner. More recent data available to EPA also confirms that the majority of owners and operators are using composite bottom-liners in their designs of hazardous waste surface impoundment and landfill units (Supporting Document #3 "Compilation of Current Practices of Land Disposal Facilities," 1992).

In summary, today's rule requires composite bottom liners, based on: (1) Available information that composite bottom-liners perform significantly better than compacted soil liners in terms of maximizing leachate detection, collection, and removal, and preventing hazardous constituent migration out of the unit; and (2) evaluation of current hazardous waste industry practices.

Consistent with existing requirements for single liners at surface impoundments and landfills, today's rule in §§ 264.221(c)(1)(ii), 264.301(c)(1)(ii), 265.221(a), and 265.301(a) requires that each liner that is included in the unit's design must be chemically resistant to the waste, placed on a structurally stable foundation, and large enough to cover all areas likely to be exposed to the waste.

Double liner systems must be constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external hydrogeologic forces), physical contact with the waste or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation. The liners must be placed upon materials capable of providing support to the liners and resistance to pressure gradients above and below the liners to prevent failure of the liners due to settlement, compression, or uplift. They must also be installed to cover all surrounding earth likely to be in contact with the waste or leachate.

2. Technical Standards for Leak Detection Systems

EPA is today establishing design standards for the leak detection systems for new landfills, surface impoundments, and waste piles, and replacements and lateral expansions of these units (§§ 264.221(c)(2), 264.251(c)(3), 264.301(c)(3), 265.221(a), 265.254(a), and 265.301(a)). These leak detection standards are designed to detect a leak through the top liner at the earliest of practicable time. Today's final rule also establishes the following design criteria for leak detection system drainage layers for affected landfills, surface impoundments, and waste piles: (1) A minimum bottom slope of 1 percent; (2) a minimum thickness of 1 foot and a minimum hydraulic conductivity of 1×10^{-2} cm/sec for granular materials used for the drainage layer for waste piles and landfills and 1×10^{-1} cm/sec

for granular materials used in surface impoundments; (3) a minimum hydraulic transmissivity of 3×10^{-5} m²/sec for synthetic materials used in drainage layers for waste piles and landfills and 3×10^{-4} m²/sec for synthetic drainage materials used in surface impoundments; and (4) sump design and operating requirements.

Location of leak detection systems. EPA proposed in the May 29, 1987 preamble (52 FR 20229) that the leachate collection and removal system adjacent to and below the top liner and above the bottom liner be designated as the leak detection system, but requested comments on the proper location of the leak detection system in a system with more than two liners. Commenters on this aspect of the rule stated that the leak detection system should be located immediately above the bottom liner. These comments claimed that specifying additional leachate collection and removal systems above the bottom liner as leak detection systems would create a regulatory disincentive for owners and operators to design systems with more than two liners by requiring these additional (intermediate) leachate collection and removal systems to meet the requirements for leak detection systems and to implement response actions in accordance with the unit's response action plan. As a result of these comments, EPA is today specifying that the leak detection system is the leachate collection and removal system drainage layer located immediately above the bottom composite liner. Under today's final rule, any additional leachate collection and removal systems located above the leak detection system are not required to meet the design and performance standards for leak detection systems.

Leak detection time. The design standards being promulgated today for leak detection systems will ensure that these systems meet the requirement in section 3004(o)(4) of RCRA for the detection of leaks of hazardous constituents at the "earliest practicable time". EPA has interpreted the term "earliest practicable time" to be the time lapse from the time a liquid has passed through a breach in the top liner to the time a technology-based leak detection system can detect the liquid, assuming saturated, steady-state flow. Without these simplifying assumptions, modelling flow rates in the leak detection system is difficult given the complexity and uncertainty of fluid flow under unsaturated conditions. After careful consideration of public comments on the proposal, EPA has decided not to specify 1 day (i.e., 24 hours) as the earliest practicable time for the detection of a leak through the top liner.

Commenters on the proposed 1-day leak detection time requirement argued that it was unnecessary and overly restrictive. Another commenter stated that the detection time could not be verified by field measurements. EPA agrees with the commenters that the proposed 1-day leak detection time requirement is unnecessary given that the Agency is promulgating minimum design specifications for leak detection systems. In addition, the Agency acknowledges that field measurement of leak detection times is a problem. EPA has determined that a leak detection system meeting today's design requirements will be capable of detecting leaks "at the earliest practicable time" consistent with the statutory mandate. Therefore, EPA is simplifying the rule by deleting the 1-day performance standard.

Leak detection sensitivity. EPA is also not finalizing the proposed leak detection sensitivity value of 1 gallon per acre per day (gpad) that was proposed. When developing a leak detection sensitivity performance standard for the May 29, 1987 proposed rule, EPA conducted comparative studies between the performance of composite bottom liners versus compacted soil bottom liners (Background Document "Bottom Liner Performance in Double-Lined Landfills and Surface Impoundments", 1987). These studies showed that composite bottom liners have a much more sensitive leak detection capability than do compacted soil-only bottom liners. For example, a compacted soil liner with a hydraulic conductivity of 1×10^{-7} cm/sec will allow some liquid migration into the liner; as a result, a simple, one-dimensional theoretical model predicts that a leak will not be detected until the flowrate through the top liner is approximately 80 gpad. In contrast, simple, one-dimensional theoretical models predict that the leak detection sensitivities of landfills and surface impoundments with composite bottom liners similar to those required in today's rule range from 0.001 to 0.1 gpad. Because EPA is today stipulating the use of a composite bottom liner, the Agency is confident that lower leak detection sensitivities will be achieved for all units affected by today's rule. Consequently, a separate requirement for leak detection sensitivity is no longer necessary and EPA has dropped this requirement from the final rule.

Slope. EPA is today finalizing a minimum slope requirement for the leak detection system. After further consideration of the slope requirement, the Agency has determined that a minimum 1 percent slope will provide adequate drainage at land disposal units at which proper construction quality assurance is used to minimize settlement (§§ 264.221(c)(2)(i), 264.251(c)(3)(i), 264.301(c)(3)(i), 265.221(a), 265.254(a), and 265.301(a)). The purpose of the requirement is to promote good drainage in the leak detection systems of units affected by today's rule. This slope requirement applies to all planar components of the leak detection system.

In the May 29, 1987 proposed rule, EPA proposed a 2-percent minimum slope but requested comments on whether the minimum bottom slope should be increased to a value between 2 and 4 percent. One commenter preferred that a 3-percent bottom slope be used to account for settlement in the final slope value. However, most commenters argued that the minimum should not be above 2 percent, expressing opposition to raising the minimum slope value above 2 percent. Many of these commenters pointed out that other improvements included in the proposed rules, such as construction quality assurance and an increased transmissivity value for synthetic drainage materials, would obviate the need for a slope greater than two percent. One commenter argued that slopes of less than 2 percent should be allowed for certain circumstances provided that the leak detection system meets other minimum design criteria and performance goals and the owner or operator can demonstrate that post-construction settlement/consolidation will be minimized or eliminated. The Agency agrees that with good CQA a lesser slope can be adequate.

Based on these comments, EPA carefully evaluated the minimum bottom slope requirement for today's rule. EPA recognizes that slope is one of several factors that will affect the performance of the leak detection system. For example, the hydraulic conductivity of materials used in the drainage system is important. In addition, the appropriate minimum slope required will also depend on the spacing of leachate collection laterals in the leak detection system; closer spacing will allow for a flatter slope. All of these design factors should be considered in selecting the appropriate slope for the system.

EPA agrees with commenters that today's rule sets in place improvements that affect the minimum slope that is needed to construct an effective leak detection system. First, the new

rapidly draining synthetic drainage materials promote more rapid drainage on flatter slopes.

Because of these improvements, EPA believes that minimum bottom slopes of less than 2 percent should be allowed where the owner or operator uses proper construction quality assurance to minimize settlement and resultant ponding of any leachate, as required by §§ 264.19 and 265.19 of today's rule. Such construction quality assurance should include surveying and other inspection techniques to measure the horizontal and vertical alignment of the bottom slope to minimize ponding and ensure leachate flow to the sump. Some owners or operators may elect to design leak detection systems using bottom slopes of greater than 1 percent. EPA emphasizes that the requirements promulgated today are minimum technical standards; owners and operators can always adopt more stringent designs at their discretion.

Thickness of granular drainage layer. Today's rule also requires that a granular drainage layer be a minimum of 12 inches in thickness for use in leak detection systems of new and replacement landfills, surface impoundments, and waste piles, and for lateral expansions of these units (§§ 264.221(c)(2)(ii), 264.251(c)(3)(ii), 264.301(c)(3)(ii), 265.221(a), 265.254(a), and 265.301(a)). EPA received no comments on this requirement in the May 29, 1987 proposed rule, and therefore is finalizing the 12-inch thickness requirement as proposed. The purpose of this minimum thickness is to decrease the chance that the underlying geomembrane will be damaged by equipment during placement of the drainage material. Current equipment used to install granular layers can only place drainage material to an accuracy of a few inches. The Agency is concerned that if granular drainage layers are designed to less than 12 inches, this equipment could damage layers, had a specified thickness of 12 inches.

Hydraulic conductivity of granular drainage materials. EPA proposed to require that granular materials used in leak detection systems have a minimum hydraulic conductivity of 1 cm/sec. The Agency contended that greater permeability afforded by granular materials having 1 cm/sec hydraulic conductivity was necessary to minimize capillary tensions present in leak detection system granular materials and to satisfy the proposed leak detection time performance standard of 1 day.

EPA requested and received comments on the proposed hydraulic conductivity requirement. Commenters opposed the 1 cm/sec requirement for several reasons. Several commenters stated that the requirement would force them to use rounded gravels or other granular materials meeting the hydraulic conductivity value. These commenters maintained that such materials were either not available or only available at significantly higher costs in many areas of the country. One commenter suggested that EPA should provide a variance to owners or operators in areas where suitable granular drainage materials having the proposed hydraulic conductivity are unavailable. Another commenter stated that the Agency should continue to require granular materials to have minimum hydraulic conductivities of 1×10^{-2} cm/sec as currently specified in EPA guidance. This commenter asserted that sand, which is the most common granular material used in leak detection systems, generally has a hydraulic conductivity of 1×10^{-2} cm/sec. Other commenters argued that using granular materials with hydraulic conductivities on the order of 1 cm/sec would significantly increase the susceptibility of geomembranes (above and below the drainage layer) to puncture, because it would be difficult to remove angular materials from the materials used to

response to the commenters concerns, the final rule (§§ 264.221(c)(2)(ii), 264.251(c)(3)(ii), 264.301(c)(3)(ii), 265.221(a), 265.254(a), and 265.301(a)) requires that granular materials used in leak detection systems at waste pile and landfill units subject to today's rule have a minimum hydraulic conductivity of 1×10^{-2} cm/sec consistent with current Agency guidance. However, the final rule specifies that granular materials used in leak detection systems at surface impoundments subject to today's rule must have a minimum hydraulic conductivity of 1×10^{-1} cm/sec.

The Agency has determined that granular materials used in leak detection systems at surface impoundments must have a higher hydraulic conductivity (one order of magnitude greater than what is currently specified by Agency guidance) to account for the potentially greater hydraulic heads imposed on the top liner in surface impoundments. Surface impoundments are typically used to manage liquids, therefore the hydraulic heads on the liner systems of these units are often much higher than those in waste piles and landfills, which are not allowed to manage wastes containing free liquids and must have a leachate collection system above the top liner. Consequently, if a leak occurs in the top liner of a surface impoundment, and is not rapidly drained to the detection sump, areas of the bottom-liner system will potentially be subjected to hydraulic heads in excess of one foot, increasing the probability of migration of hazardous constituents out of the unit. A greater permeability in the leak detection system will drain any leak more rapidly and thus reduce the head on the bottom liner system. Although granular materials having hydraulic conductivities of 1×10^{-1} cm/sec will typically be coarser sands and fine gravels, the Agency feels that two common construction techniques can be

used in combination to prevent any damage to geomembranes adjacent to the drainage materials. First, facilities may select rounded drainage materials; these materials are less likely to puncture or otherwise damage geomembranes. Second, owners or operators may use additional layers of synthetic materials (e.g., a needle-punched nonwoven geotextile) next to the liner to provide a cushion for the drainage materials and reduce the probability of puncturing. In addition, today's construction quality assurance requirements help to assure against such punctures.

The Agency's recent evaluation of current industrial practices (see "Compilation of Current Practices at Land Disposal Facilities", January 1992) revealed that many facilities are selecting synthetic drainage materials, such as geonets, for their leak detection systems. Synthetic drainage materials are often selected instead of granular materials because they typically require less space and are easier to install than granular materials. Also, as discussed below, virtually all synthetic drainage materials have permeabilities greater than 10^{-3} cm/sec.

Transmissivity of synthetic drainage materials. EPA proposed a minimum transmissivity value of 5×10^{-4} m^2/sec for synthetic drainage materials that are used in lieu of granular drainage materials. This value was selected because it provides equivalent drainage capacity to that of a granular drainage layer meeting the requirements of the proposed rule; that is, 12 inches of a granular drainage layer with a hydraulic conductivity of 1 cm/sec. The minimum value of 5×10^{-4} m^2/s for hydraulic transmissivity was based on numerical simulations of typical leak detection systems. In these simulations, EPA considered a range of synthetic drainage materials, including nets, mats, and waffles. From the results of these simulations ("Liner and Leak Detection Rule Background Document", 1987), EPA concluded that a hydraulic transmissivity value of 5×10^{-4} m^2/sec would enable the leak detection system to collect and remove relatively large amounts of leakage while maintaining gravity flow conditions. This specification was to ensure that the liquids in the leak detection system would be rapidly collected while the hydraulic head on the bottom liner would be minimized.

One commenter objected to the transmissivity standard, claiming that a value of 5×10^{-4} m^2/sec is not achievable with a single layer of currently available netting, and that performance may be worse when creep, loading, and rib layover come into effect. EPA disagrees. The Agency has data (Liner and Leak Detection Rule Background Document, 1987) showing transmissivities of single layers of synthetic drainage materials produced by four major manufacturers under the conditions of ASTM Test Method D 4716-87 (that is, a pressure of 100 kilopascals (kPa) and a hydraulic gradient between 0.1 and 0.25). At the time of the proposal, these transmissivities ranged from approximately 2×10^{-4} m^2/sec to 4×10^{-4} m^2/sec. Improvements in geonets since then have resulted in typical transmissivities of 2×10^{-3} to 4×10^{-3} m^2/sec using the same ASTM test method. The Agency maintains that the conditions at which ASTM D 4716-87 is conducted are representative of the pressures and hydraulic gradients in many land disposal units, and as a result, a transmissivity value of 5×10^{-4} m^2/sec can be obtained with typical commercially available synthetic drainage materials. However, the Agency recognizes that the requirements for synthetic drainage materials should be consistent with the requirements for granular drainage systems in leak detection systems. Thus, the Agency has revised the transmissivity requirements in today's rule (§§ 264.221(c)(2)(ii), 264.251(c)(3)(ii), 264.301(c)(3)(ii), 265.221(a), 265.254(a), and 265.301(a)) to require that synthetic drainage materials achieve equivalent flow rates to drainage layers utilizing granular materials.

Other performance requirements. Today's final rule also includes several general performance standard requirements for leak detection systems that are simply restatements of what is already required in existing regulations for leachate collection and removal systems at surface impoundments, waste piles, and landfills subject to today's final rule. Under today's rule, leak detection systems for affected units must be constructed of materials that are chemically resistant to wastes and leachate in the unit, and be of sufficient strength to resist pressure gradients generated within the unit (§§ 264.221(c)(2)(iii), 264.251(c)(3)(iii), 264.301(c)(3)(iii), 265.221(a), 265.254(a), and 265.301(a)). These requirements are designed to ensure that leak detection systems are not damaged from chemical and physical stresses associated with the unit. Also, these requirements are simply an extension of the performance standards for liners.

Leak detection systems for units regulated under today's rule must also be designed and operated to minimize clogging during the active life and post-closure period (§§ 264.221(c)(2)(iv), 264.251(c)(3)(iv), 264.301(c)(3)(iv), 265.221(a), 265.254(a), and 265.301(a)). This requirement is to ensure that drainage in leak detection systems is not impeded over time. EPA is concerned about the potential for drainage layers to become clogged as a result of physical, chemical, or biological mechanisms. EPA data indicate that the potential for clogging increases as the hydraulic conductivity of drainage material decreases. Examples of techniques to minimize clogging include: Using properly graded granular filter materials, filter fabrics (geotextiles), or other filter materials to reduce fines; using poorly graded (i.e., uniform) granular drainage material; increasing collection pipe slot numbers or size; reducing liquid residence time by increasing slope, decreasing pipe spacing, or increasing the size of granular drainage material; and cleaning collection system pipes and drainage media using hydraulic jetting, steam, or acidic solutions.

In addition, today's rule requires that leachate collection and removal systems immediately above the top liner (for landfill and waste pile units) be capable of ensuring that the leachate depth over the top liner does not exceed 1 foot (30 cm) as proposed in the March 28, 1986 proposed rule. EPA received no comments on these requirements and is therefore finalizing them as proposed.

EPA is today also promulgating several requirements for sumps that are part of a leak detection system. Owners or operators of new and replacement landfills, surface impoundments, waste piles, and lateral expansions of such units must use sumps of sufficient size to collect and remove liquids efficiently and prevent these liquids from accumulating on the drainage layer. In addition, the design of the sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed. EPA received no comments on these requirements and is therefore finalizing them as proposed (§§ 264.221(c)(2)(v), 264.251(c)(3)(v), 264.301(c)(3)(v), 265.221(a), 265.254(a), and 265.301(a)).

EPA is today promulgating a requirement for owners or operators of units affected by today's rule to collect and remove pumpable liquids in leak detection sumps to minimize the head on the bottom liner (§§ 264.221(c)(3), 264.251(c)(4), 264.301(c)(4), 265.221(a), 265.254(a), and 265.301(a)). The Agency had proposed, in the May 29, 1987

Federal Register, that the head in the sump for the leak detection sump be minimized; in the preamble, the Agency suggested that the average liquid levels in the sump should be below 12 inches. One commenter on the proposed rule stated that the 12-inch maximum was unachievable in many instances because of the size and geometry of most sumps and the pumps used to empty them. The commenter also mentioned that automated level control systems and minimum submergence requirements make the 12-inch maximum level an impossible performance standard. EPA agrees that the geometry of sumps may vary and that minimum pumping levels may be greater than 1 foot. Thus, the Agency is not setting a maximum level of liquids in the sump, but specifying only that the head on the bottom liner must be minimized by requiring owners and operators to remove pumpable liquids from the sump. "Pumpable liquids" means any amount of liquids that can be reasonably pumped out of the sump, based on sump dimensions, pump operating levels for automated pump systems, and the goals of minimizing head in the sump and backup of liquids (from the sump and drainage tile or pipes) into the drainage layer.

Today's rule also modifies the definition of the term "sump" in § 260.10 to redefine sumps used as part of leak detection systems for waste piles, surface impoundments, and landfills. The purpose of this modification is to make clear that the regulations for hazardous waste tanks that are otherwise applicable to certain sumps do not apply to those sumps used at land disposal units that function as part of the leak detection system. These sumps serve fundamentally different purposes than many other types of sumps. Sumps used at land disposal units are usually surrounded by one or more liners; therefore, many requirements, especially secondary containment, are not practicable for these units. The Agency maintains that subjecting these units to the requirements for hazardous waste tanks will not provide a substantial environmental benefit and has therefore modified the definition of the term sump to redefine sumps used as part of leachate collection and removal or leak detection systems for surface impoundments, waste piles, and landfills.

Finally, today's rule includes a requirement applicable only to those leak detection systems installed at new, replacement, or lateral expansions of landfills, surface impoundments, and waste piles that are not located above the seasonal high water table. EPA received no comments on this requirement and is finalizing it as proposed. The Agency is therefore requiring in today's rule that owners or operators of leak detection systems not located completely above the seasonal high water table demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water (§§ 264.221(c)(4), 264.251(c)(5), 264.301(c)(5), 265.221(a), 265.254(a), and 265.301(a)).

3. Alternative Systems

Alternative designs. The existing rules (§§ 264.221(d), 264.251(b), 264.301(d), 265.221(c), and 265.301(c)) already provide for alternative designs to the liners and leachate collection and removal systems if an owner or operator can demonstrate that an alternative design will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the requirements in §§ 264.221(c), 264.251(a), and 264.301(c), as appropriate. Today's rule adds §§ 264.221(d), 264.251(d), 264.301(d), 265.221(a), 265.254(a), 261.301(a) to allow alternative designs for leak detection systems that are capable of detecting leaks of hazardous constituents at least as effectively as the new leak detection system requirements in §§ 264.221(c)(2), 264.251(c)(3), 264.301(c)(3), 265.221(a), 265.254(a), and 265.301(a). EPA feels that variance procedures allow owners or operators flexibility in designing their leak detection systems without discouraging the use of new leak detection systems.

In order to be granted a variance from the leak detection requirements of today's final rule, an owner or operator must demonstrate to the Regional Administrator that the proposed design detects leaks through the top liner at least as effectively as a leak detection system designed to meet today's minimum design standards. In deciding whether to allow a variance for an alternative leak detection system or technology, the Regional Administrator will consider: (1) The ability of the proposed system or technology to operate as effectively through the active life and post-closure period of the unit as a unit designed using the minimum design specifications; (2) the nature and quantity of the wastes to be managed in the unit; and (3) the ability of the system to detect leaks, and in combination with response actions to be taken upon discovery of leakage, prevent migration of hazardous constituents out of the unit during the active life and post-closure care period. For example, an alternative leak detection system that did not provide information about leakage until after the leakage migrated through the bottom liner would be deemed unacceptable, because such a system would trigger an owner or operator response after hazardous constituents migrated into the environment.

Owners or operators may apply for a variance if they wish to propose a leak detection system design that deviates from today's design parameters. For example, if an owner or operator specified that the drainage layer of a surface impoundment would utilize granular materials having a hydraulic conductivity of 1×10^{-2} cm/sec (instead of the minimum required value of 1×10^{-1} cm/sec), the owner or operator would have to describe how other components of the system (e.g., depth of impoundment, bottom slope, flow path to a collection pipe or sump or pipe spacing) or the action leakage rate or response action plan would detect leaks at the earliest practicable time, minimize head on the bottom liner, and prevent migration of potentially hazardous constituents out of the unit as effectively as the design required in today's rule.

Temporary units. In the May 29, 1987 proposal EPA invited comment about whether double liners and leachate collection systems are necessary for all waste piles, or if alternative systems might provide adequate environmental protection at some units. In response to the Agency's request, a commenter questioned whether double liner and leachate collection systems are necessary for short-term waste piles created during corrective action. The same commenter also suggested that EPA should propose an overall policy in its upcoming corrective action rule as to what technological requirements will apply to units used for corrective action.

The Agency agrees with these comments. There are circumstances where the Agency believes it should allow temporary units constructed as a part of corrective action pursuant to a permit or 3008(h) enforcement order, or an approved closure plan, to be constructed without a double liner and a leachate collection system. Due to the limited time these units are in operation, in concert with alternative design, location and operating practices, there are situations which are equally effective as double lined units in preventing migration of constituents to ground water or surface water. Many waste piles (as well as some temporary storage surface impoundments) may thus qualify for the double liner waiver

found in §§ 264.221(d), 264.251(d), 265.221(a), and 265.254(a).

These provisions provide for a generic waiver of the double liner system, but do not specifically address temporary units. In response to the special needs posed by corrective action and facility closure (e.g., rapid cleanup and short-term operation) the Agency has published a proposed "Subpart S" rule (55 FR 30798) that, among other things, specifically addresses standards for temporary units. That proposal outlines Agency guidance on what factors to consider in determining what constitutes a temporary unit.

4. Applicability to Waste Piles

EPA is requiring that new and replacement waste piles, and lateral expansions of waste piles, install, operate, and maintain double liner and leak detection systems (§§ 264.251 and 265.254). The Agency is extending the double liner and leachate collection and removal system requirements to waste piles, as discussed in the preamble to the May 29, 1987 proposal (52 FR 20250), because the Agency maintains, for several reasons, that these units pose threats similar to or greater than landfills concerning leakage through the top liner and releases of hazardous constituents. First, waste piles are often exposed to precipitation for longer periods of time than landfills. Many owners or operators of landfills provide an intermediate cover to minimize leachate generation; this practice is not as common for waste piles. Second, waste piles have a higher potential for equipment-related damage than do landfills, because equipment is frequently used to add and remove waste from piles during these units' active lives. This increased equipment activity at waste piles increases the risk of damage to the primary liner and merits use of a secondary liner for these units. Finally, waste piles typically have much longer active lives than landfills: Waste piles are typically used for 20 years or more, whereas landfill units are more common used for periods of 6 months to 5 years before being closed.

Today's rule provides a waiver from the double liner and leachate collection and removal system requirements for certain waste piles that are monofills. In the May 29, 1987 proposal rule, EPA proposed a variance for monofills when (1) the monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, (2) such waste do not contain constituents which would render the wastes hazardous for reasons other than EP toxicity characteristic, (3) the monofill has at least one liner for which there is no evidence that such liner is leaking, (4) the monofill is located more than a quarter mile from an underground source of drinking water, and (5) the monofill is in compliance with generally applicable ground-water monitoring requirements for facilities with permits. The Agency proposed this waiver to codify the language in section 3004(o)(3) of RCRA and to be consistent with regulations for landfills and surface impoundments. Because EPA received no comments on this proposed waiver, it is being finalized as proposed in today's rule (§§ 264.251(e)(1) and 265.254(a)).

Today's rules do not affect the existing exemption in § 264.250(c) and now in § 265.254 for certain indoor waste piles. These units continue to be excluded from today's double-liner and leak detection requirements because they contain no free liquids and are protected from precipitation and surface water run-on and are therefore unlikely to have any leakage.

5. Applicability to Land Treatment Units

EPA proposed a number of leak detection requirements for land treatment units in the May 29, 1987 proposed rule. These requirements included (1) a 95-percent confidence level for detecting hazardous constituents in the treatment zone, (2) monitoring conducted above the seasonal high water table, (3) response action plans, and (4) inspection of unsaturated zone monitoring equipment. Today's rule does not include additional leak detection requirements for land treatment units. EPA has concluded that the current regulatory requirements for unsaturated zone monitoring at land treatment units are sufficient to ensure that leakage of hazardous constituents will be detected at the earliest practicable time. Therefore, EPA finds that additional regulations for such units are not needed to meet the statutory requirements of section 3004(o)(4) of RCRA for these units.

In the preamble to the 1987 proposal, EPA noted that unsaturated zone monitoring systems serve as effective leak detection systems for land treatment units. The Agency received no comments challenging this position or suggesting more effective alternatives. The existing regulations, however, already require unsaturated zone monitoring—i.e., leak detection systems—at all land treatment units, both new and existing. Specifically, §§ 264.278 and 265.278 contain detailed technical standards for soil and soil-pore liquid monitoring in the unsaturated zone below the land treatment unit to ensure detection of any hazardous constituents migrating out of the treatment zone. Furthermore, when releases are detected, the owner or operator of a permitted facility is required to modify operating procedures at the land treatment unit to prevent further release. EPA has implemented these requirements through two guidance documents: "Permit Guidance Manual on Hazardous Waste Land Treatment Demonstrations" and "Guidance Manual on Unsaturated Zone Monitoring for Hazardous Waste Land Treatment Units." After reviewing public comments and its experience in permitting land treatment units since the proposal, EPA concluded that the current regulatory requirements, coupled with existing guidance, are sufficient to ensure that leak detection systems in new land treatment units are capable of detecting releases at the earliest practicable time.

In the May, 1987 proposal, EPA did not propose to change the basic regulatory requirements for unsaturated zone monitoring, but added several relatively minor amendments. For example, the proposal would have added a requirement that constituents migrating out of the treatment zone be detected at a 95% confidence level and that the unsaturated zone monitoring take place above the seasonal high water table as well as below the treatment zone (as the current standards specify). EPA has concluded that these minor changes are unnecessary, either to meet the statutory standard or to protect human health and the environment. Available guidance documents already specify a 95% level of confidence for monitoring, and EPA and the States have successfully incorporated this standard into permits. Therefore, it is unnecessary to impose this requirement as a matter of regulation. Similarly, monitoring below the seasonal high water table is already prohibited by the existing regulations, because monitoring below the water table would not qualify as unsaturated zone monitoring. Therefore, the regulatory requirement that the monitoring be above the seasonal high water table is also unnecessary.

Today's final rule also does not finalize requirements for a response action plan describing remedial action if releases are detected in the unsaturated zone. EPA has concluded that a response action plan for permitted land treatment units is superfluous, because the current regulations (§ 264.278(g)) already require facility owners or operators to take specific responses in the case of hazardous constituents detected in the unsaturated zone monitoring system. EPA also notes that

migration found in the unsaturated zone monitoring system would constitute migration from the unit, and therefore could be addressed by the Agency, if necessary, under RCRA corrective action requirements. Finally, EPA notes that, because of the RCRA land disposal restrictions, most if not all hazardous waste land treatment units in the future will be able to operate only if wastes placed in them meet applicable treatment standards before placement in the unit or if they are granted a no-migration variance. A unit granted a no-migration variance that then releases hazardous constituents from the unit would have to cease receipt of prohibited wastes (§ 268.6(f)). In this case, a unit found to be releasing hazardous constituents to the unsaturated zone would be required to cease operating. For these reasons, EPA has concluded that a response action plan is not necessary for land treatment units.

A December 6, 1991 decision of the United States Court of Appeals, District of Columbia addressed the soil-pore water monitoring requirements for interim status land treatment facilities (*Shell Oil Company v. EPA*, No. 80-1532). As of the date of this rule, the Court's mandate was not yet issued and the regulation remains in place. The Agency is still considering what response to take to the Court's decision.

C. Response to Leaks

1. Action Leakage Rate

The final rule requires owners or operators to establish one action leakage rate (ALR) for each unit affected by today's rule (§§ 264.222, 264.252, 264.302, 265.222, 265.225, and 265.302). The action leakage rate is a leakage rate that requires implementation of a response action to prevent hazardous constituent migration out of the unit. The Agency has determined, the public comments support, the need for an ALR and response actions that the ALR triggers. EPA believes that the ultimate goal of the liner and leak detection system requirements is to prevent the release of hazardous constituents from the unit, thereby protecting the ground water and surface water. A system in place to detect leaks at the earliest practical time should be complemented by early follow-up actions to effectively minimize the chance for migration of hazardous constituents from the unit. Furthermore, it is often more effective to address leaks within the liners than to later address ground-water contamination through corrective action.

Today's final rule requires owners or operators to monitor the rate of leakage into the leak detection sump and to determine whether the measured rate of leakage over a specified period of time exceeds the action leakage rate (see Section IV.D. of the preamble for further discussion of today's monitoring requirements). If the owner or operator determines that the measured rate of leakage exceeds the ALR, the owner or operator must notify EPA and implement procedures contained in a response action plan that owners or operators must prepare for units affected by today's rule.

The proposed rule allowed the owner or operator a choice in establishing an action leakage rate. EPA proposed to specify an action leakage rate between 5–20 gallons/acre/day (gpad). Alternatively, the owner or operator could propose a site-specific action leakage rate for EPA approval. The proposed rule required owners and operators to develop and submit a plan for responding to the action leakage rate.

The proposed rule also required owners and operators to establish a value and a response action plan for a rapid and large leakage rate (RLL). The RLL was defined as the maximum design leakage rate (plus a safety factor) that the leak detection system can remove under gravity flow conditions (i.e., without the fluid head on the bottom liner exceeding one foot in granular leak detection systems and without the fluid head exceeding the thickness of synthetic lead detection systems). EPA also considered in the proposal the possibility of owners or operators developing responses to leakage rates between the action leakage rate and rapid and extremely large leakage rate (referred to as an intermediate leakage rate). In addition, the Agency considered requiring owners or operators to develop responses to "significant changes" in the flow rate (EPA suggested a 100 gpad or 25–50 percent increase, whichever was larger), leakage that exceeded health-based concentrations of hazardous constituents, and a leakage rate exceeding 50 gpad for any one-day period. In summary, EPA discussed six leakage rates in the proposal that could trigger various response actions by owners or operators.

Although no commenters objected to the establishment of an action leakage rate, EPA received many comments on the proposed action leakage rate value. Several commenters favored EPA setting an action leakage rate within the proposed range of 5–20 gpad. Some suggested that EPA should not finalize a specific value within the proposed range, but keep the range of 5–20 gpad and allow the permit writer to select a specific value within the range to apply to the unit. Some commenters suggested an action leakage rate of 50 or 100 gpad. Another commenter suggested that EPA set an action leakage rate at 75 percent of the proposed rapid and extremely large leakage rate. One commenter stated that the action leakage rate should be decreased over the life of the unit according to a formula, thus allowing a higher action leakage rate during initial operation of the unit to account for presence of liquids in the sump from sources other than leaks (e.g., construction water).

In general, most commenters stated that EPA had little or no field data to set an action leakage rate within the proposed range, and argued that the Agency should allow site-specific action leakage rates to be set by the permit writer, especially to account for other potential sources of liquids in the leak detection sump (e.g., soil liner construction water, precipitation during construction, and ground-water infiltration). Although the proposed rule would allow site-specific variances to the proposed action leakage rate, commenters expressed concern that EPA would not allow many site-specific action leakage rates. These commenters claimed that site-specific action leakage rates based on the design and operation of the unit should be common.

EPA also received many comments on other leakage rates that would require owners or operators to develop response actions. Commenters opposed using "significant changes" in the flow rate or health-based concentrations of hazardous constituents in liquids entering the detection sump to trigger a response by the owner or operator. Commenters felt that the proposed "significant change" concept was unclear and difficult to define. Commenters felt using leachate quality analysis at flow rates below the rapid and extremely large leakage rate to trigger a response was costly, time-consuming, and provided no additional environmental benefit. These commenters generally felt that liquid flow rates into the detection sump should be the sole trigger of an owner or operator's response. Many of these commenters also disagreed with the use of health-based levels (e.g., maximum contaminant levels) in the leachate to trigger a response. They argued that EPA's assumptions in proposing such levels were overly conservative and unrealistic because such liquid was still contained in the leak detection system and migration to the environment was

controlled by the bottom-liner and drainage system.

Many commenters maintained that EPA was proposing too many leakage rates without a clear distinction between them as to the differences in response associated with the leakage. These commenters claimed that some of the responses actions discussed by EPA in the preamble seemed to be redundant for different leakage rates, and that EPA's requirements were confusing, burdensome, and provided no additional benefit. As an example, the commenters cited that flow rates above the proposed action leakage rate (5–20 gpad) would trigger many of the same responses that exceedance of other leakage rates, such as the rapid and extremely large leakage rate (an example in the preamble showed a RLL of 3000 gpad) or significant change in leakage rate, would mandate. Some of these commenters stated that leakage rates less than the rapid and extremely large rate did not necessarily indicate a failure of the top liner, and that leakage would still be contained within the unit by the bottom liner. Therefore, they felt that the Agency should not stipulate excessive and redundant responses on the part of owners or operator for leakage rates that do not pose environmental concerns.

EPA requested and received field data on actual leakage rates from commenters on the proposed rule, and obtained additional data from more recent studies of leakage rates through top liners at land disposal units. However, these data are limited and furthermore, indicate that a portion of units (>25%) with CQA could exceed 20 gpad, the highest end of the proposed range for action leakage rates. Therefore, the Agency agrees with commenters that existing field data do not support establishment of an action leakage rate within the proposed range of 5–20 gpad for all units.

In response to EPA's request for comments on the appropriateness of the proposed range for surface impoundments, commenters argued that it was inappropriate for the Agency to set the same action leakage rate for landfills and surface impoundments and that the Agency should take into account the type, size, and operation of the unit when establishing an action leakage rate. EPA agrees with the commenters that the size, type, and operation of the unit should be accounted for in establishing a leakage rate that will trigger a response by the owner or operator, and that a standard leakage rate value for all units is not appropriate at this time.

In addition, EPA acknowledges commenters' concerns about the proposed number of leakage rates triggering a response by the owner or operator, and the lack of distinction among them for purposes of implementation. To simplify the final rule, EPA has chosen to establish one leakage rate that will trigger a response by the owner or operator, account for the site-specific design of the unit, and indicate significant evidence that there is problematic leakage through the top liner that mandates a response. EPA is requiring owners or operators to propose an action leakage rate for each unit subject to today's rule based on an approach that is similar to the proposed definition of the rapid and extremely large leakage rate. That is, owners or operators must calculate an action leakage rate based on the maximum design leakage rate that the leak detection system can remove without the fluid head on the bottom liner exceeding one foot. This leakage rate must account for an adequate margin of safety for uncertainties in design, construction, and operation of the leak detection system. The action leakage rate must not be greater than the flow capacity of the drainage layer in order to assure detection of leaks (e.g., if the ALR is 500 gpad and the flow capacity is 400 gpad then the ALR would never be exceeded no matter how large the leak). The action leakage rate should always be less than or equal to the pumping capacity of the leak detection sump since the pumping capacity is required to be greater than the maximum leak detection system flow rate under which gravity flow conditions prevail (i.e., to prevent liquids from backing up into the drainage layer). If the owner or operator determines that the action leakage rate is exceeded, the owner or operator must implement the procedures contained in the response action plan.

EPA believes that flow rates in excess of the action leakage rate indicate a major localized or general failure of the top liner, thus increasing the potential for a buildup of head on the bottom liner and increasing the potential for migration of hazardous constituents into the bottom liner. For this reason, it is necessary to maintain leak detection flow rates below the action leakage rate and for the owner or operator to take response actions for leaks greater than the action leakage rate.

Under today's rule, as in the May 29, 1987 proposal, the owner or operator must propose an action leakage rate based on calculations of the maximum flow capacity of the leak detection system design so as not to exceed one foot head on the bottom liner (called rapid and extremely large leak in the proposal). The proposal background document "Liner and Leak Detection Rule Background Document", (EPA/530–SW–87–015, May 1987) presented a number of mathematical models for making such a determination. All of these models are based on Darcy's Law for non-turbulent flow through saturated media. Of these models, the Agency finds that the following formula for flow originating through a hole in the liner is the most likely leak scenario for a geomembrane liner:

$$Q = k.h.\tan\alpha.B$$

where

Q = flow rate in the leak detection system (drainage layer),
h = head on the bottom liner,
k = hydraulic conductivity of the drainage medium,
α = slope of the leak detection system,
B = width of the flow in the leak detection system, perpendicular to the flow.

Using this formula, the Agency calculated the maximum flow rates using the minimum specifications in today's rule: 1% slope, and 1×10^{-1} cm/sec hydraulic conductivity for surface impoundments and 1×10^{-2} cm/sec hydraulic conductivity for landfills and waste piles. Assuming that the head is 1 foot and the width of flow (B) is 100 feet, the results show maximum flow rates of 2,100 gpad for surface impoundments and 210 gpad for landfills and waste piles. Using a safety factor of two, as suggested in the proposed rule preamble, yields about 1,000 gpad for surface impoundments and 100 gpad for landfills and waste piles as the Agency recommended action leakage rates. Because this calculation used the minimum technical requirements and other design assumptions to maximize potential head on the bottom liner, the Agency believes that the units meeting the minimum technical requirements would not require action leakage rates below 100 gpad for landfills and waste piles and 1000 gpad for surface impoundments. The final background document on action leakage rates ("Action Leakage Rates for Leak Detection Systems," January 1992) provides further discussion and background on these recommended action leakage rates. As discussed earlier in the preamble, this document is available from the docket for this rule or from NTIS, U.S. Department of Commerce.

While EPA recommends the above action leakage rates for the minimum design specifications, the Agency recognizes that a number of site-specific

factors affect the maximum flow capacity of a leak detection system, and owners or operators may want to propose alternative action leakage rates. For example, the leak detection system design may be different than the minimums specified in today's rule. As indicated above and in the background document, hydraulic conductivity is a factor that significantly affects the flow capacity of the system. The Agency believes that leak detection systems with greater hydraulic conductivities would have higher action leakage rates. In additional, owners or operators may have information to justify a different width of flow in the above calculation. Owners or operators also may justify a higher action leakage rate by using a different formula or model. While the Agency recommends the use of the above model for defining the maximum flow capacity of the leak detection system and action leakage rate, EPA recognizes that there may be alternative models available now or in the future that may more accurately predict system flow capacity to justify higher action leakage rates. Therefore, owners or operators may propose to use an alternative model that they believe more accurately predicts the maximum flow capacity of the leak detection system. Further, owners or operators may want to do a flow (pump) test on the leak detection system to show actual flow capacity, which may justify a higher action leakage rate. Finally, the owner or operator may have flow rate data on similarly designed units to use to justify a different level. As more and more units are built, the Agency as well as owners or operators will develop a better data base that may be used to establish appropriate action leakage rates.

For facilities seeking a permit, the action leakage rate will be set after the Regional Administrator reviews the rate proposed by the owner or operator in either the facility's part B permit application or permit modification. for interim status facilities, the owner or operator must submit a proposed action leakage rate for the affected unit to the Regional Administrator 60 days prior to the receipt of waste in the unit. The Regional Administrator will either approve, modify, or deny the proposed leakage rate. The Regional Administrator may extend the review period to evaluate the owner or operator's proposed action leakage rate for up to 30 more days. If none of these actions occur within 60 days (or if the review period is extended, within 90 days), the proposed rate can be considered approved.

Owners and operators of units affected by today's rule must monitor the leak detection sump and use the monitoring information to determine if the action leakage rate has been exceeded. The final rule sets forth the procedures owners or operators must use in determining whether the action leakage rate has been exceeded §§ 264.222(b), 264.252(b), 264.302(b), 265.222(c), 265.255(c), and 265.302(c)). To calculate the flow rate into the leak detection sump, owners, or operators must convert flow rate data into an average daily flow rate per acre (i.e., gpad) for each leak detection sump. This calculation must be performed weekly during the active life and closure period of the unit, unless the Regional Administrator approves otherwise. Upon closure (installation of the final cover for the unit), owners or operators will monitor the leak detection sump monthly, or in some cases quarterly or semi-annually (see Section IV.D. for further discussion). While on a monthly monitoring schedule, owners or operators will have to convert the monitoring data to an average daily flow rate to determine if the action leakage rate has been exceeded. If an owner or operator is monitoring quarterly or semi-annually no calculations are needed unless liquids are detected in the sump above the pump operating level, in which case the owner or operator must resume monitoring the sump on a monthly basis. Such an owner or operator would then have to convert monitoring data to an average daily flow rate per acre for the purpose of determining if the action leakage rate has been exceeded.

2. Response Action Plan

The final rule requires owners or operators of affected units to develop a response action plan for leaks exceeding the action leakage rate §§ 264.223, 264.253, 264.304, 265.223, 265.259, and 265.303). The response action plan is a site-specific plan that the owner or operator develops to address leakage through the top liner to assure that it does not migrate out of the unit. It is based on an assessment of the capability of the total design, construction, and operation of the unit rather than of individual components of the unit.

The majority of commenters on the proposed response action plan requirements stated that there were too many potential triggers (i.e.,leakage rates) that the response action plan must potentially address in the proposed rule. These commenters argued that these trigger levels lacked distinction as to the responses they would necessitate. Other commenters felt that the response action plan requirements were confusing and inconsistent in certain cases. The commenters noted that many of the response actions for leaks above the proposed rapid and extremely large leakage rate were similar to actions for leaks above the proposed action leakage rate. In response to these comments, EPA has simplified and clarified the response action requirements in today's final rule.

The final rule specifies minimum response actions that the owner or operator must take when the owner or operator determines that the action leakage rate has been exceeded. The minimum response actions are included in the response action plan that the owner or operator must prepare. Although minimum response actions are required to be in the response action plan, the content of a response action plan is determined by site-specific factors. The minimum responses required under today's rule are typical of response action plans EPA has identified at operating facilities and incorporate comments EPA received on the proposed response action plan requirements. Although today's rule only requires the owner or operator to initiate response actions upon exceedance of the action leakage rate, owners or operators may want to implement some types of response actions for leakage rates less than the action leakage rate, because these actions will lower the probability that leakage will exceed the action leakage rate and trigger today's final response action requirements.

An owner or operator's response action plan must include notifying EPA within 7 days that the action leakage rate has been exceeded. EPA received no comments on the proposed notification requirement and thus, is finalizing this requirement. The Agency is also requiring that the owner or operator submit a preliminary written assessment to the Regional Administrator within 14 days of the determination as to amount and source of the liquids in the detection sump, information on possible size, location, and cause of the leak, and any immediate and short term actions the owner or operator will take (e.g., additional pumping and removal of the leachate, changes in operating practices to reduce the leakage). As stated above, the Agency believes that exceedance of the action leakage rate is significant and indicates a major localized or general failure of the top liner, thus increasing the potential for a buildup of head on the bottom liner and increasing the potential for migration of hazardous

constituents into the bottom liner and out of the unit. For this reason, the Agency must be notified and given a preliminary assessment of the actions taken by the owner or operator.

The focus of the response action requirements for flow rates above the action leakage rate is the degree and schedule of what remediation, if any, is needed to reduce the leakage to the action leakage rate. The final rule requires that owners or operators identify the location, size, and cause of the leakage, and sample and analyze the leachate present in the detection sump. EPA believes that analyzing the leachate is necessary as part of determining the response needed to reduce the leakage to below the action leakage rate. For example, such information may be useful in locating a leak at sites where different wastes are disposed of in different cells. The owner or operators's's response action plan must discuss whether wastes should be removed to locate and repair the leak, whether repairs or controls will be used to minimize the leakage, and if so, whether operational changes, such as reduction or cessation of waste receipt, or partial or final closure of the unit, will be implemented, and if so, what types.

Today's rule clarifies when the owner or operator must submit a report documenting the response actions taken concerning leakage above the action leakage rate. The final rule requires that the owner or operator submit a report to the Regional Administrator describing how effective the response actions have been in reducing the leakage below the action leakage rate and preventing migration of hazardous constituents out of the unit within 90 days of exceeding the action leakage rate. The final rule also requires that the owner or operator continue to submit these reports monthly as long as the action leakage rate is exceeded.

EPA received several comments on the proposed response action submission and approval process. Several commenters expressed concern over possible delays associated with requiring a response action plan before receipt of waste. EPA received comments both supporting and objecting to submittal of the response action plan as part of the permit application process. One commenter suggested that the response action plan for both leakage rates above the rapid and extremely large leakage rate and leakage rates above the proposed action leakage rate but below the rapid and extremely large leakage rate should be submitted as part of the permit application. Another commenter argued against submittal as part of the permit application. The commenter stated that the bottom liner system can contain leakage rates in excess of the rapid and extremely large leakage rate until the response action plan is approved, and that such liquid would not migrate very far into the bottom liner before the response action plan was approved.

Unlike the proposed rule, the final rule requires owners or operators to submit only one response action plan for leakages exceeding the action leakage rate. Although EPA acknowledges that the bottom liner will provide initial containment of any leakage into the leak detection system, EPA still feels that leakage above the action leakage rate is an indication of a significant problem with the unit. The Agency believes that a response action plan is necessary before receipt of the waste into a unit to assure that there is both a commitment and an instrument in place to initiate responses upon exceedance of the action leakage rate, before leaks can potentially migrate out of the unit.

The final rule requires that new hazardous waste management facilities submit their response action plans and have them approved as part of the permit application process. Permitted facilities must submit the plan as part of a permit modification according to the procedures in § 270.42. Consistent with the minimum technology notification requirements of RCRA section 3015 for surface impoundments and landfills, owners and operators of units at interim status facilities subject to today's leak detection system rules are required to submit a response action plant in conjunction with the proposed action leakage rate 60 days prior to receiving waste into the unit.

D. Monitoring and Inspection Requirements

In today's final rule, EPA is promulgating several minor amendments to monitoring and inspection requirements for new and replacement landfills, surface impoundments, and waste piles, and lateral expansions of these units. These amendments add inspection requirements for leak detection systems (§§ 264.226, 264.254, 264.303, 265.226, 265.260, and 265.304). Specifically, today's rule requires facility owners and operators to monitor the sumps in leak detection systems for the presence of liquids in the sumps and record the amount of liquid removed from the sumps. Under §§ 264.222(b), 264.252(b), 264.302(b), 265.222(c), 265.255(c), and 265.302(c), owners or operators must calculate the average daily flow rate in gpad for each leak detection system sump on a weekly basis during the active life and monthly during the post-closure period, when monthly monitoring is required, to determine if the action leakage rate has been exceeded.

In the May 29, 1987, proposal, EPA proposed to require daily monitoring of the leak detection system sump during the active life of the units, and weekly monitoring during the post-closure period. EPA received several comments on the issue of the frequency of leak detection system sump monitoring requirements. Among those who commented, several objected to the requirement for leak detection system sump measurement on a daily basis during the active life because (1) not all facilities are operational on weekends and holidays, and (2) the payment of overtime rates to personnel for monitoring activities on weekends and holidays would be a significant financial burden. Other commenters stated that it would be difficult to monitor many sumps on a daily basis, especially large sumps or facilities with small leakage rates. One commenter suggested monthly monitoring of the leak detection sump. Most of these commenters suggested that monitoring the sump weekly during the active life was sufficient to determine exceedance of an action leakage rate.

EPA maintains that precipitation or other events may lead to large heads on the bottom liner over a period of a week, and that monthly monitoring of the sump during the active life is insufficient for observing changes in liquid levels in the sump that may necessitate action on the part of the owner or operator. However, EPA agrees with commenters that daily monitoring of the sumps is excessive given that the Agency has redefined the action leakage rate that triggers a response action. Thus, EPA has changed the requirement from daily monitoring of the leak detection system sump to require weekly monitoring during the active life and closure period. As discussed earlier, EPA has also changed the requirement from daily removal of accumulated liquids in the sump to a requirement to remove liquids from the sump as necessary to minimize head on the bottom liner (§§ 264.221(c)(3), 264.251(c)(4), 254.301(c)(4), 265.221(a), 265.254(a), and 265.301(a)).

Two commenters also objected to the requirement to monitor the leak detection system sump weekly during post-closure. These commenters stated that monthly monitoring would be sufficient because the elimination of liquids from incident precipitation and the reduction of drainage from wastes will result in insignificant leachate

generation in the years following closure. These commenters stated that monitoring should be conducted monthly or quarterly and more often only if the volumes of liquid in the sump increased.

EPA acknowledges that leachate generation should decrease in the years following closure of the unit, due to the effectiveness of the final cover. In response to comments received on this issue, EPA is allowing owners or operators to conduct monthly monitoring of the sump after the final cover is installed on the unit (§§ 264.228(d), 264.303(c), 265.228(c), and 265.304(a)). The Agency has also decided in the final rule to allow owners or operators to conduct quarterly monitoring of the sumps during post-closure, if the liquid levels in the sump stay below the pump operating level for two consecutive months, and/or semi-annual monitoring of the sumps if the liquid level in the sump stays below the pump operating level for two consecutive quarterly inspections. However, if pumping is required to remove liquids from the leak detection sump (i.e., liquids above the operating level of the sump) at any time during quarterly or semi-annual inspections, owners or operators must increase their monitoring to a monthly or quarterly basis, respectively. However, the Agency acknowledges that in some cases the levels may vary at facilities depending on the design and geometry of the sump and the type of pump used.

The "pump operating level" is a level proposed by the owner or operator and approved by the Regional Administrator based on sump dimensions, pump activation levels, and a level that avoids backup of liquids (from the sump and drainage tile or pipes) into the drainage layer.

Today's rule requires the owner or operator to monitor for and record the presence and level of liquids present in each leak detection sump, as well as the amount of liquids removed from the sump, to determine the leakage rate through the top liner. The leachate volume in the sump typically will be determined by measuring the liquid level in the sump. The leachate volume removed from the sump can be determined by collecting (in containers, tanks, etc.) and measuring the quantity of liquid pumped out of the sump or, alternatively, by installing flow-metering equipment to record the volumes. A third option is to install a device to measure inflow into the sump, for those units where the sump is located outside the unit; this may be a weir or pump at the sump inflow pipe. The leakage rate is to be calculated as the volume of liquid entering the sump over a period of time divided by the time and then also divided by the unit area served by the sump.

EPA is today requiring, as proposed, that the measured leakage rate in each sump in the leak detection system be used for determining whether the action leakage rate for the unit has been exceeded. EPA received several comments on this requirement. These commenters maintained that a variance from the action leakage rate should be available when it can be demonstrated that liquid in the leak detection system is from a source other than leakage through the top liner. EPA acknowledges that the actual leakage rate through the top liner may be different (larger or smaller) than the measured leakage rate at the sump depending on: (1) The collection efficiency of the system and (2) the presence of water in the leak detection system from construction, ground-water infiltration, consolidation of compacted soil liners, or additional sources of liquid other than leakage. However, owners and operators may consider these other sources of liquid when determining an action leakage rate that is appropriate for their unit and in developing their response action plan.

Today's final rule makes several technical amendments to the general inspection requirements and operating record requirements for units affected by today's rule. EPA today is amending § 264.15 by correcting an earlier oversight by adding requirements to inspect hazardous waste tanks as required by §§ 264.193 and 264.195 (today's amendments also remove two erroneous cross-references—§§ 264.194 and 264.253—from § 264.15). Section 265.15 is being amended by adding today's inspection requirements for units at interim status facilities under §§ 265.260, 265.278, and 265.304. EPA is also today making technical changes to the operating record requirements for units affected by today's rule at permitted and interim status facilities in §§ 264.73 and 265.73. These sections have been modified to reference recordkeeping requirements for permitted tank facilities (in §§ 264.191, 264.193, and 264.195) and interim status tank facilities (in §§ 265.191, 265.193, and 265.195).

E. Construction Quality Assurance

EPA today is promulgating construction quality assurance requirements (CQA) for all new landfills, surface impoundments, and waste piles, and replacements and lateral expansions of such units to the extent they are affected by the double-liner system and leak detection system requirements in today's rule. Today's CQA requirements also apply, to the extent they are relevant to units built under variances granted under §§ 264.221, 264.251, 264.301, 265.221, 265.254, and 265.301. The Agency has concluded that CQA is integral to ensure the proper construction, operation, and design of double-liner and leak detection systems and the closure of land disposal units. The CQA requirements being issued incorporate standard engineering practices and common hazardous waste management industry practices that have already been proven to ensure that the design and performance standards of today's final rule are met.

EPA is today promulgating CQA requirements applicable to foundations, dikes, low-permeability soil liners, geomembranes, leachate collection and removal systems, leak detection systems, and final covers.

The Agency has conducted a number of studies that outline the need for CQA. In 1983, EPA conducted a study assessing existing technology for liner installation at hazardous waste land disposal facilities ("Liner and Leak Detection Rule Background Document", 1987). The data base used in the study consisted of information from the literature supplemented by data collected through 40 interviews with technical experts in industry, State regulatory agencies, trade and professional associations, research organizations, and waste management companies. This study's conclusions were: (1) Construction-related problems during liner system installation constituted one of the major causes of liner system failure and (2) a rigorous CQA program could have identified and corrected many of the problems that contributed to such failure. The study also concluded that construction techniques that were available at that time could be used to install geomembrane and clay liner systems that met the Agency's performance standards for liner systems. However, the study noted that a comprehensive monitoring and audit program during construction would be needed to attain the Agency's performance standards for liner systems.

In 1985, EPA conducted another study to supplement existing information on liner performance ("Liner and Leak Detection Rule Background Document", 1987). This study was designed to evaluate the factors that contributed to successes and failures at 27 landfills and surface impoundments selected for case studies. The results of this study showed

that there were two main elements related to successful liner installation. The first element was a proper conceptual approach applied to all stages of unit construction, use, and closure, including design, material selection, contractor selection, liner system installation, facility operation, and final cover design and installation. The second element was the extensive use of formal CQA programs to ensure that the components of the unit were constructed properly in all stages of a unit's construction. The report stated that a CQA program resulted in a better constructed liner system.

EPA data show the performance of double liner systems and leachate collection and removal/leak detection systems is greatly enhanced when CQA procedures are implemented. The implementation of CQA procedures results in increased leachate collection efficiency and reduces leakage through both synthetic and compacted soil liners. For example, information compiled in a recent report ("Action Leakage Rates for Leak Detection Systems", January, 1992) showed that from a group of landfills with geomembrane only top liners, 8 of 11 landfill cells showed leakage rates below 20 gpad when good CQA was implemented, as opposed to only 1 of 5 landfill cells where CQA was not implemented.

With the improved, consistent, performance of the double liner and leachate collection and removal system come significant environmental and practical benefits. The resultant reduction in leakage rates through the top and bottom liners reduces the threat of migration of hazardous constituents to ground water, as is called for by section 3004(o) of RCRA. The use of CQA also may result in fewer costly repairs to land disposal units after waste has been received, fewer occasions when an action leakage rate is exceeded and implementation of response action plans is necessary, and a diminished long-term need for corrective action.

Today's requirements for CQA add a framework for requirements already established in the regulations for CQA for permitted landfill, surface impoundment, and waste pile construction. Current requlations for these units (§§ 264.226, 264.254, and 264.303) already specify that synthetic and soil liners be inspected for uniformity, damage, and imperfections during and immediately after installation. The CQA requirements being promulgated primarily add procedures to ensure that the existing general performance standards for CQA are met. Because the requirements of today's rule also apply to new units and lateral expansions and replacements of existing units at interim status facilities, today's CQA requirements also apply to these units. The requirements being promulgated in §§ 264.19 and 265.19 are in contrast to those in the May 29, 1987 proposal, which would have put in place a substantial CQA program. EPA has concluded that the proposal was, in fact, redundant with existing guidance manuals and also unduly prescriptive and detailed with respect to methods, approaches, and documentation to the Regional Administrator.

The Agency is today continuing to rely on available Agency guidance documents (instead of additional regulations) to implement the performance standards for construction quality assurance of today's final rule because EPA believes that newer technologies may be discouraged by detailed regulations. Agency guidance includes guidelines for selecting specific test methodologies and the number of tests that should be conducted during installation, both of which will vary significantly for different types of units, construction materials, and unit locations. A final guidance document, entitled "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities" (EPA 530-SW-86-031, October 1986), includes detailed guidance on the components of the CQA requirements of today's final rule. Additional guidance is also available in the May 24, 1985 draft "Minimum Technology Guidance on Double Liner Systems for Landfills and Surface Impoundments—Design, Construction, and Operation." Guidance for the construction of clay liners is available in the November, 1988 document entitled "Design, Construction, and Evaluation of Clay Liners for Waste Management Facilities" (EPA 530-SW-86-007F).

In today's final rule, EPA is requiring a site-specific construction quality assurance plan to be prepared by the owner or operator of new landfills, surface impoundments, and waste piles, and replacements and lateral expansions of such units (§§ 264.19(b) and 265.19(b)). This requirement is the same as was proposed in the May 29, 1987 proposed rule. EPA has concluded that this plan is needed to ensure that a hazardous waste management unit is designed, constructed, operated, and closed in accordance with the CQA program for the unit. Owners or operators are required to prepare a CQA plan before constructing all new units, replacement units, and lateral expansions of existing units at both permitted and interim status facilities.

The Agency received several comments objecting to two requirements for interim status facilities to submit documentation under the CQA program. These commenters objected to the proposed requirement that the owner or operator submit, prior to construction, a CQA plan describing actions to be taken to implement the CQA program. The commenters also objected to an associated requirement to submit, prior to placing wastes in the unit, a CQA report documenting compliance with the CQA plan. Many of these commenters felt that these approval processes could result in unnecessary delays in construction of new units at interim status facilities. EPA agrees with the commenters and is eliminating the requirement for interim status facilities to submit a CQA plan for approval. EPA is instead requiring that interim status facilities prepare a CQA plan and maintain it onsite. By contrast, permitted facilities must submit a CQA plan as part of the Part B permit application; any changes to an approved plan at a permitted facility would require a permit modification. In addition, the Agency is dropping the requirement for these interim status facilities to submit a CQA report and has replaced this requirement with one to submit a CQA certification (§ 265.19(d)). EPA is, however, reserving the right to request supporting documentation for the certification. This certification will ensure that CQA procedures have been followed at the facility. The certification must be signed by a registered professional engineer serving as a CQA officer, and must state that the unit has been constructed in accordance with the CQA plan and meets the design specifications. For units at permitted facilities, this certification must be submitted by the owner or operator to the Regional Administrator and either approved or have approval waived by the Regional Administrator under § 270.30(l)(2)(ii) prior to the receipt of waste. For units at interim status facilities, the owner or operator must submit this certification at least 30 days prior to the receipt of waste; this will allow the Regional Administrator time to review the certification, and if necessary, request additional information from the owner or operator. The owner or operator may receive wastes in the unit after 30 days, unless (1) the Regional Administrator notifies the owner or operator in writing that the construction is unacceptable, (2) the Regional Administrator extends the review period (by a maximum of 30

days), or (3) the Regional Administrator requests additional information within the 30-day period from submission of the CQA certification. The certification of CQA activities for the final cover is already addressed in the overall certification required for closure activities under parts 264 and 265.

EPA is also specifically requiring the use of a test fill for compacted soil liners as proposed in the May 29, 1987, proposed rule. The test fill is an area developed using the actual materials of construction for the compacted soil component of the bottom composite liner to ensure that the liner is constructed to meet design requirements for field permeability (§§ 264.19(c)(2) and 265.19(c)(2)). The test fill will allow owners and operators, in many cases, to avoid the costs of failures of the full-scale unit by identifying problems during the test fill analysis.

EPA received several comments on the requirement for a test fill. Some commenters argued that a test fill was not necessary, claiming that it is expensive and does not provide any better data than laboratory tests. One commenter contended that field permeability tests may be less precise than laboratory tests, because the field testing is subjected to more uncontrolled variables (e.g., weather conditions) than laboratory tests, and therefore a test fill often cannot be made to precisely replicate the larger unit.

EPA disagrees, and is confident that, when functionally equivalent materials and equipment are used, a test fill can be constructed to provide more accurate indication of full-scale unit performance. Recent data compiled from permit applicants shows that laboratory studies have often not accurately predicted field permeability of the installed liner. The Agency has found that constructed soil liners will often test well in the laboratory because specimen preparation activities (e.g., root removal, visual selection of a uniform sample, additional compaction) have been conducted on the laboratory sample. These preparation activities are often not achieved to the same degree in a large, field-scale operation. EPA has found that test fill testing using large-scale field tests (e.g., sealed double ring infiltrometer) consistently provide a more accurate indicator of the performance of a full scale unit than do laboratory tests. For these reasons, EPA concludes that the information gained from field testing of test fills is a more reliable indicator of actual field conditions than laboratory tests, and so is stipulating the use of field testing for test fills in today's rule. However, to provide flexibility, today's final rule contains a provision allowing for an alternative demonstration where available data are sufficient to clearly show that a constructed soil liner will meet design specifications (e.g., test fill data from a soil liner constructed using functionally equivalent materials and methods of construction). The Agency believes that as more test fills are constructed, this variance will become more achievable because more data will be available. For units at permitted facilities, this variance must be obtained as part of the permitting process; for interim status units, this variance is self-implementing. EPA is, however, reserving the right to review during inspections documentation associated with variances claimed by owners or operators of units at interim status facilities.

F. Implementation of Permitting and Interim Status Requirements

Today's final rule amends the existing part B permit application requirements in §§ 270.17, 270.18 and 270.21 for surface impoundments, waste piles, and landfills at facilities seeking a RCRA permit. These new provisions require owners or operators of such units to provide information on how the liner and leak detection system will be designed, constructed, operated, and maintained to meet the requirements of part 264. Today's rule also requires owners or operators who propose alternative designs for double liner, leachate collection and removal systems, or leak detection systems to submit the appropriate detailed plans, and engineering and hydrogeologic reports describing the alternative designs and operating practices, including pertinent location aspects. In addition, today's rule requires the owner or operator to submit the proposed action leakage rate, the response action plan and the CQA plan for review in the permitting process. Sections 270.17, 270.18, and 270.21 also require owners or operators to provide a description of how the leak detection system will be inspected to meet the requirements in part 264. The unit design, action leakage rate, response action plan, CQA plan, monitoring provisions, and inspection schedule will become permit conditions that must be complied with over the life of the permit. The monitoring and inspection items become part of the inspection schedule under § 264.15(b).

Currently permitted facilities that are affected by today's rule must submit permit modifications to EPA under the procedures of § 270.42. Since the March 28, 1988 and May 29, 1987 proposals, EPA has promulgated amendments to the procedures for permit modifications for treatment, storage, and disposal facilities (53 FR 37912, September 28, 1988). EPA will implement the new double-liner and leak detection system requirements using the new permit modification procedures, consistent with EPA policy (53 FR 37912, September 28, 1988). Therefore, today's rule contains amendments to § 270.42 that categorize the amended part 264 requirements of today's rule as various classes of permit modifications.

Today's rule subjects owners and operators of interim status facilities to the same design and operating requirements as permitted facilities. However, procedural requirements for documentation or reporting have been structured to be more self-implementing for interim status facilities since these facilities have not yet been subjected to the site-specific tailored standards of a permit. In today's rule, owners or operators of interim status facilities that are subject to today's requirements will follow the same notification and approval procedures existing for interim status surface impoundments and landfills subjected to the minimum technological requirements in section 3015 of RCRA (§§ 265.221(b) and 265.301(b)).

Existing regulations require interim status facilities to submit a notice to the Regional Administrator at least 60 days prior to receiving hazardous waste in units affected by today's requirements. In today's rule, EPA is requiring that owners or operators submit their proposed action leakage rate and response action plan to the Regional Administrator at least 60 days prior to receiving hazardous waste in units affected by today's requirements. If no objection or extension of the review time is made by the Regional Administrator, the proposed action leakage rate and response action plan are effective. In addition, EPA is requiring owners or operators to submit a certification that the unit has been constructed in accordance with the CQA plan at least 30 days prior to receiving hazardous waste in units affected by today's standards. If no objection or extension to the review time is made by the Regional Administrator by the end of the 30-day period, the owner or operator may receive wastes in the unit.

Interim status facilities are required to prepare, but are not required to submit, their design and operating plans, monitoring plans, or CQA plans prior to receiving wastes. These documents must be retained on-site and be available for review by the Regional Administrator. EPA is not requiring submission and

advance approval of this information because such activities would be inconsistent with the goal of interim status to minimize review and approval by the Regional Administrator.

V. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under section 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program in lieu of EPA's administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law and was authorized for the requirements.

In contrast, under RCRA section 3006(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in non-authorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA-based requirements apply in authorized States in the interim.

B. Effect on State Authorizations

Most of today's final rule for liners and leak detection systems is finalized pursuant to RCRA sections 3004(o) and 3015 which were added by HSWA. The HSWA-based requirements are being added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and take effect in all States, regardless of their authorization status. As noted above, EPA will implement those HSWA-based sections of today's rule in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. Because these requirements are finalized pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectivaly, on the basis of state requirements that are equivalent or substantially equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. The deadline by which the States must modify their programs to adopt today's rule is July 1, 1993. It should be noted that HSWA interim authorization will expire on January 1, 1993 (see 40 CFR 271.24(c)).

Portions of today's rule at the time they were proposed on May 29, 1987 (52 FR 20220), were proposed to be adopted pursuant to RCRA. As non-HSWA rules, therefore, they would not be effective in authorized States until those States revised their programs to adopt equivalent requirements under State law. EPA has reconsidered this issue and now interprets the statute to allow more of the rule, including the CQA, with the exception of its application to final cover requirements, to be promulgated pursuant to HSWA.

EPA views today's CQA requirements to be vital for liner and leak detection systems to perform as intended by HSWA, in section 3004(o), by effectively preventing the migration of hazardous constituents into and through liners and for detecting leaks of hazardous constituents at the earliest practicable time. The Agency has determined that CQA at land disposal facilities improves the performance of liners and leak detection systems. Specifically, test fills have proven to be necessary for ensuring that compacted soil liners satisfy the permeability requirements set by the statute. The response action plans, based on detected leakage from land disposal units are also considered to be integral parts of the process established by section 3004(o) for early detection of liner breakthrough and prevention of migration of hazardous constituents into the ground and surface water. Consequently, the Agency views the CQA program and the response action plan (including the action leakage rate and monitoring to determine if the flow rate exceeds the action leakage rate) to be promulgated pursuant to HSWA for those units where the liner and leak detection standards are promulgated pursuant to HSWA.

New and replacement surface impoundments and landfill units, and lateral expansions of such units at facilities for which a permit application was received before November 8, 1984, are not explicitly addressed by section 3004(o)(1)(A); however, these units are covered by existing liner requirements which today are being revised by the Agency to take into account improvements in control technology. Thus these revisions are HSWA rules pursuant to section 3004(o)(1). Although section 3004(o)(1)(A) does not require waste piles to meet the double liner and leachate collection system standards, existing regulations already contain liner standards for waste piles and, therefore, pursuant to section 3004(o)(1), the Agency is revising the existing waste pile regulations to take into account improvements in control technology. As a result, the Agency is also promulgating these double liner and leachate collection system standards for waste piles as HSWA requirements. In addition, the Agency views the liner requirements for new waste piles as mandated by the form of leak detection chosen for these regulations; and therefore the liners standards from this point of view are also HSWA requirements. Leak detection for replacement units and lateral expansions of existing units (landfills, surface impoundments, and waste piles) at permitted facilities and at interim status waste piles are also being issued as improvements in control and measurement technologies under section 3004(o)(1) of RCRA.

CQA requirements for final covers at both permitted and interim status facilities are promulgated pursuant to section 3004(a) of RCRA, since final covers is not a HSWA requirement. The CQA requirements for final covers, therefore, will not be effective in authorized states. They will be applicable only in those states that do not have authorization. In authorized states, the CQA requirements for final covers at permitted and interim status facilities will not be effective until the state revises its program to adopt equivalent requirements under state law and receives authorization by EPA for them.

Section 40 CFR 271.21(e)(2) requires States that have final authorization to modify their programs to reflect Federal program changes and to submit the modification to EPA for approval. The deadline by which the State must modify its program to adopt this regulation is determined by the promulgation date in accordance with 40 CFR 271.21(e). These deadlines can be extended in certain cases (40 CFR 271.21(e)(3)). Once EPA approves the

modification, the State requirements become subtitle C RCRA requirements.

Authorized States are only required to modify their programs when EPA promulgates Federal regulations that are more stringent or broader in scope than the existing Federal regulations. For those Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. This is a result of section 3009 of RCRA, which allows States to impose regulations in addition to those in the Federal program. EPA has determined that the liner and leak detection systems rule is more stringent than the existing Federal regulations. Therefore, authorized States are required to modify their programs to adopt regulations that are equivalent or substantially equivalent.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modification is approved. Of course, States with existing standards may continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

VI. Regulatory Requirements

A. Economic Impact Analysis

Executive Order No. 12291 requires that regulatory agencies determine whether a new regulation constitutes a major rulemaking and, if so, it requires that the agency conduct a Regulatory Impact Analysis (RIA). An RIA consists of the quantification of the potential benefits, costs, and economic impacts of a major rule. A major rule is defined in Executive Order No. 12291 as a regulation likely to result in:

- An annual effect on the economy of $100 million or more; or
- A major increase in costs or prices for consumers, individuals, industries, Federal, State, and local government agencies, or geographic regions; or
- Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States based enterprises to compete with foreign based enterprises in domestic or export markets.

EPA estimated the effects of this rule to determine if it is a major regulation as defined by Executive Order. The Agency's results indicate that the rule has an annual cost below $100 million. Furthermore, the Agency does not believe the rule will significantly increase costs for consumers, individuals, industries, Federal, State and local government agencies, or geographic regions, or have significant adverse effects on competition employment, investment, innovation, or international trade. Therefore, the Agency determines that the rule is not a major rule.

Because the rule is not a major rule, EPA has performed an Economic Impact Analysis (EIA), focusing its analyses on the costs and economic impacts of the rule only. The Agency's cost analysis indicates the annual incremental costs of the rule will be approximately $23 million per year (all costs are in 1990 dollars).

1. Estimated Cost of the Rule

a. *General approach.* EPA estimated incremental costs for provisions of the final rule which require new compliance activities. The incremental cost of each provision was estimated by computing the difference between the cost of complying with the provision and the cost of complying with current regulations (the baseline for measurement). The baseline created by current regulations includes requirements imposed on hazardous waste landfills, surface impoundments, and waste piles by the July 26, 1982 permitting requirements for land disposal facilities (47 FR 32274) and the July 15, 1985 Hazardous Waste Management System Final Codification Rule (50 FR 28702). These rules, taken together, create baseline landfills having synthetic membrane top liners over a clay bottom liner with leachate collection systems between the liners and on top of the membrane liner. Baseline surface impoundments are constructed similarly, but lack the leachate collection system over the top liner. Baseline waste piles are assumed to be built with a single clay liner beneath a leachate collection system.

In projecting the costs of today's provisions EPA developed estimates of affected populations, unit costs of compliance, and aggregate costs of compliance. Estimates of affected populations were based on the permitted land disposal universe as reported in the EPA Hazardous Waste Data Management System (HWDMS) and RCRIS National Oversight Data Base (October, 1991). Use of the permitted universe was based on the fact that by November 8, 1988, the Agency was required to permit all land disposal facilities that had submitted permit applications by November 8, 1984 (HSWA section 3005(c)(2)). This mandate has resulted in the permitting of nearly all of the land disposal universe. The data base does not, however, identify a very small future population that may be affected by the regulations being promulgated today (i.e., newly-regulated interim status facilities brought into the land disposal universe via new rulemakings). These new interim status facilities, however, are expected to be offset by facilities dropping out of the RCRA Subtitle C land disposal universe as a result of regulatory programs.

Unit costs of compliance, based on capital costs and operating and maintenance costs were developed using EPA's Liner Location and Cost Analysis Model. Both direct and indirect costs were included. Aggregate costs were then obtained by multiplying unit costs by the number of units in the affected population.

In the final rule, costs from the 1987 proposal have been adjusted for inflation and are expressed in terms of 1990 dollars. Also, cost estimates from the 1987 proposal have been adjusted to account for differences between the proposal and the final rule. Therefore, all costs related to permitted land treatment units have been removed. Costs associated with the implementation of response action plans have been incorporated in the final rule, although EPA expects that few facilities will exceed the action leakage rate which triggers response action. In addition, leak detection system unit costs for surface impoundments have been adjusted upward to account for the higher costs of higher-permeability (1×10^{-1} cm/sec) drainage material (this cost was not included in the cost analysis for the May 29, 1987 proposed rule). The CQA costs developed for the 1987 proposal have been incorporated in this final rule analysis with a few

modifications. First, costs used to calculate certain CQA activities for test fills were adjusted upward to reflect new cost information (See Section c. below). Second, an incremental cost of $400 per unit has been added to cover the cost of a professional engineer certifying that each unit was constructed according to the CQA plan. Finally, CQA costs related to closure have been deleted from the analysis. EPA believes owners and operators are routinely performing closure activities when complying with existing rules, which require certification of closure by a registered, professional engineer. Consequently, we do not believe these CQA requirements represent incremental costs attributable to this rulemaking.

EPA used discounted cash flow analysis to convert streams of costs over time to equivalent annual costs over the life of the facility. First, EPA converted cost streams to present values as follows:

$$PV = \sum_{i=0}^{n} \frac{(costs)}{(1+r)^n} \quad n$$

where the real rate of return (r) equals 3 percent and n is the number of periods in which costs are incurred. The cash flows do not include inflation, taxes, or depreciation. As such, the present value costs report the full pre-tax compliance costs in real terms assuming that an owner or operator can access capital at a real interest rate of 3 percent.

Second, in order to spread the costs evenly over the life of the facility, EPA annualized the present value costs by multiplying them by a capital recovery factor (CRF):

$$CRF = \frac{r(r+1)^{OL}}{(r+1)^{OL}-1}$$

where OL is the operating life of the facility. EPA assumed a 20-year operating life and a 3 percent real rate of return, which leads to a CRF of 0.0672. The annualized value represents the annual revenue required to cover the costs imposed by the provision. This value provides a consistent basis for presenting and comparing costs of different provisions. However, it implicitly assumes that facilities can predict future costs and access capital at a steady rate over the life of the facility.

b. *Double liner and leak detection system.* The final rule extends the requirements for double liners to waste piles. The rule also requires the bottom liners of landfills, surface impoundments, and waste piles to be a composite liner and a leak detection system to be installed above the bottom composite liner. The owner or operator is also required to propose an action leakage rate to serve as a trigger for response action and prepare a response action plan that would describe responses to be initiated by the owner or operator when leakage through the top liner exceeded the action leakage rate.

(1) Landfill cost analysis. In estimating the cost of complying with the composite bottom-liner and leak detection system provisions, EPA assumed that the number of landfills would remain equal to the current number in the affected population and that each unit would have a 20-year operating life and a 30-year post-closure care period. This simplifying assumption was necessary due to lack of data on the current and future number of new landfill units, replacement units, and lateral expansions. EPA also assumed that one cell would be opened and closed each year during the 20-year operating life of a unit. EPA also assumed that landfill owners or operators currently use double liners (but only a clay bottom liner) with leachate collection systems above and between the liners as required by the interim statutory design requirements, codified in §§ 264.301 and 265.301.

Based on facilities listed in the HWDMS and RCRIS National Oversight Data Base, the affected population was found to include 74 landfill facilities each with at least one unit, ranging in size from 500 MT/year to 150,000 MT/year. The affected population and the total incremental costs (above current statutory requirements) of the leak detection system provisions are shown in Table 1. This figure includes an annual allowance for repair costs similar to an insurance premium based on an assumption that 5 percent of units of all types and sizes will experience a leak at some time during their 20-year life large enough to require implementation of the response action plan. We believe the 5 percent rate is a reasonable upper limit for properly constructed units, based on an analysis of flow rates in leak detection systems at 82 landfill and surface impoundment [illegible] Unit repair costs range from [illegible]0 for a 500 MT/year landfill to $6,100,000 for a 150,000 MT/year landfill (1990 dollars). EPA estimates that the incremental annualized costs for landfills required to comply with the liner and leak detection system provisions would be approximately $4,850,000.

TABLE 1.—COST OF COMPLIANCE WITH DOUBLE LINER AND LEAK DETECTIONS SYSTEM PROVISIONS FOR LANDFILL UNITS

[1990 Dollars]

Size	Number of active units	Incremental annualized present value unit cost ($1,000)	Incremental annualized present value total cost [1] ($1,000)	Allowance for repairs—Annualized present value total costs for all units [1] ($1,000)	Total costs per metric ton per year ($1,000)
500 mt/yr	28	11.1	310.5	39.2	25
1,000 mt/yr	8	14.6	116.5	22.4	17
2,000 mt/yr	5	19.9	99.7	26.0	13
6,000 mt/yr	12	37.2	446.2	168.0	9
15,000 mt/yr	13	55.4	720.8	436.7	5
35,000 mt/yr	4	98.0	392.0	302.4	5
60,000 mt/yr	1	134.7	134.7	126.0	4
100,000 mt/yr	1	194.3	194.3	207.2	4
150,000 mt/yr	2	247.7	495.3	610.3	4
Subtotal	74		2910.1	1940.1	
Total				4850.2	

[1] Totals may not compute exactly due to roundoff.

S-310999 0022(01)(28-JAN-92-11:01:52)

(2) Surface Impoundment Cost Analysis. To estimate the cost of the complete bottom-liner and leak detection system provisions, EPA assumed that the number of surface impoundment units would remain equal to the current number in the affected population (except that no new impoundments larger than 15 acres would be constructed) and that each unit would have a 20-year operating life. EPA also assumed that double liners (but only clay bottom liners) with a leachate collection system in between as required by the interim statutory design requirements, codified in §§ 264.221 and 265.221 are currently being used. We assumed that leachate collection drainage media having a permeability of 10^{-2} cm/sec are currently being used. Based on facilities identified in the data base, we estimated the affected population to include 329 surface impoundment units at 143 facilities. The units range in size from 0.25 acres to 15 acres. The affected population and the total incremental annualized costs (above current statutory requirements) of compliance with the leak detection system provisions are shown in Table 2. As with landfills, these costs include an allowance for repair costs based on an assumption that 5 percent will require repair during their 20-year life. Unit repair costs range from $28,000 for a 0.25-acre surface impoundment to $1,680,000 for a 15-acre unit (1990 dollars). EPA estimates that the incremental annualized costs of complying with the composite bottom-liner and leak detection system provisions would be approximately $2,650,000.

TABLE 2.—COST OF COMPLIANCE WITH DOUBLE LINER AND LEAK DETECTION SYSTEM PROVISIONS FOR SURFACE IMPOUNDMENT UNITS

[1990 Dollars]

Size	Number of active units [1]	Incremental annualized present value unit cost ($1,000)	Incremental annualized present value total cost [2] ($1,000)	Allowance for repairs—annualized present value total costs for all units ($1,000) [2]
0.25 AC	133	4.4	582.8	9.3
0.50 AC	81	5.2	422.7	11.3
1.00 AC	44	7.2	314.8	12.3
2.00 AC	46	10.8	494.8	25.8
5.00 AC	18	22.0	395.3	25.2
15.00 AC	7	47.0	329.1	29.4
Subtotal	329		2539.5	113.3
Total				2652.8

[1] Based on 2.3 impoundments per active facility.
[2] Totals may not compute exactly due to roundoff.

(3) Waste Pile Cost Analysis. EPA assumed that new, replacement, or expanded waste piles would have to add two geomembrane liners with a leak detection system in between. Current waste pile regulations require only a clay liner with a leachate collection system above. In estimating the cost of compliance with the double liner and leak detection system provisions, EPA assumed that the number of waste pile units would remain the same as the current number and that each unit would have an operating life of 20 years. Based on facilities identified in the data base, the affected population was found to include 35 waste pile facilities ranging in size from 250 cubic feet to 1,000,000 cubic feet.

The affected population and the total incremental costs (above current statutory requirements) of compliance with the double liner and leak detection system provisions are shown in Table 3. As with landfills and surface impoundments, this figure includes an allowance for repair costs based on an assumption that a maximum of 5 percent will require repair during their life. Unit repair costs range from $5,600 for a 250-cubic-foot waste pile to $450,000 for a 1 million-cubic-foot waste pile (1990 dollars). EPA estimates that the incremental annualized costs of compliance with the double liner and leak detection system requirements would be approximately $428,000.

TABLE 3.—COST OF COMPLIANCE WITH DOUBLE LINER AND LEAK DETECTION SYSTEM PROVISIONS FOR SURFACE WASTE PILE UNITS

[1990 Dollars]

Size	Number of active units [1]	Incremental annualized present value unit cost ($1,000)	Incremental annualized present value total cost [2] ($1,000)	Allowance for repairs—annualized present value total costs for all units ($1,000) [2]
250 cu. ft	3	5.2	15.5	<0.1
1,000 cu. ft	7	5.5	38.4	0.2
5,000 cu. ft	7	6.5	45.5	0.3
25,000 cu. ft	6	8.6	51.7	0.5
100,000 cu. ft	5	12.9	64.4	1.0
500,000 cu. ft	3	24.4	73.3	2.1
1,000,000 cu. ft	3	43.8	131.4	3.4
Subtotal	74		420.1	7.5
Total				427.6

[1] Outdoor (uncovered) waste piles.
[2] Total may not compute exactly due to roundoff error.

c. CQA. The final rule would require the owner/operator to complete a CQA plan, implement the plan during construction, and have a professional engineer certify that construction was completed in accordance with the CQA plan. As noted above, costs estimated for the 1987 proposal were used in this analysis except additional costs were added for test fills and certification of a professional engineer, and specific costs associated with closure were not included.

The proposed rule estimated that test fill costs would add about $10,000 (in 1987 dollars) to the cost of each facility. EPA has since determined that this figure is low and we have adjusted test fill costs upward to $50,000 (in 1990 dollars) for all types of units. Tables 4, 5, and 6 depict costs for implementing CQA (including test fills and construction certification) for landfills, surface impoundments, and waste piles, respectively.

d. Total Incremental Costs of the Leak Detection System, CQA, and Double-Liner Requirements. The total costs of the leak detection system, CQA, and double liner provisions are shown in Table 7 for landfills, surface impoundments, and waste piles. The total incremental annualized cost of the provisions would be approximately $7,930,000 for the leak detection system and double liner requirements and $13,400,000 for CQA, for a total of approximately $21,300,000. Table 8 compares the incremental costs from this rulemaking with costs from the July 15, 1985 codification rule and the July 26, 1982 permitting rule.

TABLE 4.—COST OF COMPLIANCE WITH CONSTRUCTION QUALITY ASSURANCE PROVISIONS FOR LANDFILL UNITS

[1990 Dollars]

Size	Number of active units	Incremental annualized present value unit cost ($1,000)	Incremental annualized present value total cost [1] ($1,000)	Total costs per metric ton per year ($1,000)
500 mt/yr	28	114.1	3195.7	230
1,000 mt/yr	8	114.1	913.1	114
2,000 mt/yr	5	114.1	570.7	57
6,000 mt/yr	12	114.1	1369.6	19
15,000 mt/yr	13	152.2	1979.2	8
35,000 mt/yr	4	154.7	618.9	4
60,000 mt/yr	1	209.9	209.9	3
100,000 mt/yr	1	209.9	209.9	2
150,000 mt/yr	2	209.9	419.6	1
Total	74		9486.6	

[1] Totals may not compute exactly due to roundoff.

TABLE 5.—COST OF COMPLIANCE WITH CONSTRUCTION QUALITY ASSURANCE PROVISIONS FOR SURFACE IMPOUNDMENT UNITS

[1990 Dollars]

Size	Number of active units [1]	Incremental annualized present value unit cost ($1,000)	Incremental annualized present value total cost [2] ($1,000)
0.25 AC	58	23.8	1377.7
0.50 AC	35	23.8	831.4
1.00 AC	19	23.8	451.3
2.00 AC	20	23.8	475.1
5.00 AC	8	29.4	235.6
15.00 AC	3	43.5	130.6
Total	143		3501.6

[1] Based on 2.3 impoundments per active facility.
[2] Totals may not compute exactly due to roundoff.

TABLE 6.—COST OF COMPLIANCE WITH CONSTRUCTION QUALITY ASSURANCE PROVISIONS FOR WASTE PILE UNITS

[1990 Dollars]

Size	Number of active units [1]	Incremental annualized present value unit cost ($1,000)	Incremental annualized present value total cost [2] ($1,000)
250 cu. ft	3	11.9	35.6
1,000 cu. ft	7	11.9	83.5
5,000 cu. ft	7	11.9	83.5
25,000 cu. ft	6	11.9	71.6
100,000 cu. ft	5	11.9	59.6
500,000 cu. ft	3	11.9	35.8
1,000,000 cu. ft	3	11.9	35.6
Total	35		405.5

[1] Outdoor (uncovered) waste piles.
[2] Totals may not compute exactly due to roundoff.

TABLE 7.—TOTAL COST OF COMPLIANCE WITH DOUBLE LINER, LEAK DETECTION SYSTEM, AND CQA PROVISIONS

[Incremental Annualized Present Value Cost in 1990 Dollars]

Facility type	Liner/leak detection system ($1,000)	Construction quality assurance ($1,000)	Total ($1,000)
Landfill	4850.2	9486.6	14336.8
Surface Impoundment	2652.8	3501.8	6154.5
Waste Pile	427.8	405.5	833.1
Total	7930.6	13393.7	21324.3

[1] Totals may not compute exactly due to roundoff.

TABLE 8.—INCREMENTAL COSTS OF DESIGN REQUIREMENTS

[In Millions of 1990 Dollars]

Facility type	1982 liner/ LCS require-ments [1,3]	1985 Double-liner require-ments [2,3]	Today's rule [4]
Landfill	13.8-27.0	4.5	14.3
Surface Impoundment	10.4-40.9	11.9	6.2
Waste Pile	0.5-0.9		0.8
Total	24.7-68.8	16.4	21.3

[1] 47 FR 32274.
[2] 50 FR 28702.
[3] Incremental costs above previous Agency rules, costs adjusted to account for current number of units and 1990 dollars.
[4] Incremental costs above previous Agency rules. Costs do not consider potential savings due to use of 1% versus 2% minimum slope.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) of 1980 (Pub. L. 96-354) 5 U.S.C. 601 *et seq.*, which amends the Administrative Procedure Act, requires Federal regulatory agencies to consider small entities throughout the regulatory process. The purposes of the RFA are to describe the effects the regulations will have on small entities and to examine alternatives that may reduce these effects. As indicated at proposal, EPA has determined that today's rule will not have a significant impact on a substantial number of small entities. EPA conducted an evaluation of the impacts of this rule on small businesses. For purposes of this analysis, EPA used Small Business Administration criteria for identifying small businesses and evaluated the impact of today's rule using regulation-induced business closures as the key indicator of regulatory impact. The test assumed that any cost greater than 3 percent of total assets per year will result in forced closures. EPA also considered a second impact measure that compares increased annual compliance costs to total production costs with 5 percent of the threshold for significance. Using these tests, EPA has determined that the regulatory costs of today's rule will not have a significant impact on a substantial number of small entities.

C. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and assigned OMB control number ICR No. 995.06 as amended. These requirements are not effective until OMB approves them and a technical amendment to that effect is published in the Federal Register. An Information Collection Request document has been prepared by EPA (ICR No. 995.06) and a copy may be obtained from Sandy Farmer, Information Policy Branch, EPA, 401 M Street, SW. (PM-223Y), Washington, DC 20460 or by calling (202) 260-2740.

The public reporting burden for this collection of information is estimated to average 248 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223Y, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Jonathan Gledhill."

VII. Supporting Documents

The following documents have been prepared in support of this rulemaking and placed in docket number F-92 LLDF-FFFFF.

1. U.S. EPA, "Liner and Leak Detection Rule Background Document", EPA/530-SW-87-015, May, 1987.
2. U.S. EPA, "Bottom Liner Performance in Double-Lined Landfills and Surface Impoundments Background Document", EPA/530-SW-87-013, April, 1987.
3. U.S. EPA, "Compilation of Current Practices at Land Disposal Facilities", January, 1992.
4. U.S. EPA, "Action Leakage Rate for Leak Detection Systems", January, 1992.
5. U.S. EPA, "Response to Public Comments on Final Double-Liner and Leak Detection Rule", January, 1992.
6. U.S. EPA Memorandum, "Revisions to Cost Analysis for the Final Rulemaking Entitled *Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units*," January, 1992.

List of Subjects in 40 CFR Parts 260, 264, 265, 270, and 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indian lands, Intergovernmental relations, Penalties, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety

bonds, Water pollution control, Water supply.

Dated: January 15, 1992.

William K. Reilly,

Administrator.

For the reasons set out in the preamble, chapter I of title 40 of the Code of Federal Regulations is amended as follows:

PART 260—HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921–6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

2. Section 260.10 is amended by adding the definition of "replacement unit" in alphabetical order, and revising the definition of "sump" to read as follows:

§ 260.10 Definitions.

* * * * *

Replacement unit means a landfill, surface impoundment, or waste pile unit (1) from which all or substantially all of the waste is removed, and (2) that is subsequently reused to treat, store, or dispose of hazardous waste. "Replacement unit" does not apply to a unit from which waste is removed during closure, if the subsequent reuse solely involves the disposal of waste from that unit and other closing units or corrective action areas at the facility, in accordance with an approved closure plan or EPA or State approved corrective action.

* * * * *

Sump means any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serve to collect hazardous waste for transport to hazardous waste storage, treatment, or disposal facilities; except that as used in the landfill, surface impoundment, and waste pile rules, "sump" means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system.

* * * * *

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. Section 264.15 is amended by revising paragraph (b)(4) to read as follows:

§ 264.15 General inspection requirements.

* * * * *

(b) * * *

(4) The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§ 264.174, 264.193, 264.195, 264.226, 264.254, 264.278, 264.303, 264.347, 264.602, 264.1033, 264.1052, 264.1053, and 264.1058, where applicable.

* * * * *

3. Subpart B is amended by adding § 264.19 as follows:

§ 264.19 Construction quality assurance program.

(a) *COA program.* (1) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile, and landfill units that are required to comply with §§ 264.221 (c) and (d), 264.251 (c) and (d), and 264.301 (c) and (d). The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

(2) The CQA program must address the following physical components, where applicable:

(i) Foundations;

(ii) Dikes;

(iii) Low-permeability soil liners;

(iv) Geomembranes (flexible membrane liners);

(v) Leachate collection and removal systems and leak detection systems; and

(vi) Final cover systems.

(b) *Written CQA plan.* The owner or operator of units subject to the CQA program under paragraph (a) of this section must develop and implement a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:

(1) Identification of applicable units, and a description of how they will be constructed.

(2) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.

(3) A description of inspection and sampling activities for all unit components identified in paragraph (a)(2) of this section, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: Sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under § 264.73.

(c) *Contents of program.* (1) The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:

(i) Structural stability and integrity of all components of the unit identified in paragraph (a)(2) of this section;

(ii) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;

(iii) Conformity of all materials used with design and other material specifications under §§ 264.221, 264.251, and 264.301.

(2) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of §§ 264.221(c)(1)(i)(B), 264.251(c)(1)(i)(B), and 264.301(c)(1)(i)(B) in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The Regional Administrator may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of §§ 264.221(c)(1)(i)(B), 264.251(c)(1)(i)(B), and 264.301(c)(1)(i)(B) in the field.

(d) *Certification.* Waste shall not be received in a unit subject to § 264.19 until the owner or operator has submitted to the Regional Administrator by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit

PART 260-HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

2. Section 260.10 is amended by adding the definition of "replacement unit" in alphabetical order, and revising the definition of "sump" to read as follows:

§ 260.10 Definitions.

* * * * *

Replacement unit means a landfill, surface impoundment, or waste pile unit (1) from which all or substantially all of the waste is removed, and (2) that is subsequently reused to treat, store, or dispose of hazardous waste. "Replacement unit" does not apply to a unit from which waste is removed during closure, if the subsequent reuse solely involves the disposal of waste from that unit and other closing units or corrective action areas at the facility, in accordance with an approved closure plan or EPA or State approved corrective action.

* * * * *

Sump means any pit or reservoir that meets the definition of tank and those troughs/trenches connected to it that serve to collect hazardous waste for transport to hazardous waste storage, treatment, or disposal facilities; except that as used in the landfill, surface impoundment, and waste pile rules, "sump" means any lined pit or reservoir that serves to collect liquids drained from a leachate collection and removal system or leak detection system for subsequent removal from the system.

* * * * *

PART 264-STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. Section 264.15 is amended by revising paragraph (b)(4) to read as follows:

§ 264.15 General inspection requirements.

* * * * *

(b) * * *

(4) The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§ 264.174, 264.193, 264.195, 264.226, 264.254, 264.278, 264.303, 264.347, 264.602, 264.1033, 264.1052, 264.1053, and 264.1058, where applicable.

* * * * *

3. Subpart B is amended by adding § 264.19 as follows:

§ 264.19 Construction quality assurance program.

(a) COA program. (1) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile, and landfill units that are required to comply with §§ 264.221 (c) and (d), 264.251 (c) and (d), and 264.301 (c) and (d). The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

(2) The CQA program must address the following physical components, where applicable:

(i) Foundations;

(ii) Dikes;

(iii) Low-permeability soil liners;

(iv) Geomembranes (flexible membrane liners);

(v) Leachate collection and removal systems and leak detection systems; and

(vi) Final cover systems.

(b) Written CQA plan. The owner or operator of units subject to the CQA program under paragraph (a) of this section must develop and implement a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:

(1) Identification of applicable units, and a description of how they will be constructed.

(2) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.

(3) A description of inspection and sampling activities for all unit components identified in paragraph (a)(2) of this section, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: Sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under § 264.73.

(c) Contents of program. (1) The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:

(i) Structural stability and integrity of all components of the unit identified in paragraph (a)(2) of this section;

(ii) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;

(iii) Conformity of all materials used with design and other material specifications under §§ 264.221, 264.251, and 264.301.

(2) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of §§ 264.221(c)(1)(i)(B), 264.251(c)(1)(i)(B), and 264.301(c)(1)(i)(B) in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The Regional Administrator may accept an alternative demonstration, in lieu of a test fill, where data are sufficient to show that a constructed soil liner will meet the hydraulic conductivity requirements of §§ 264.221(c)(1)(i)(B), 264.251(c)(1)(i)(B), and 264.301(c)(1)(i)(B) in the field.

(d) Certification. Waste shall not be received in a unit subject to § 264.19 until the owner or operator has submitted to the Regional Administrator by certified mail or hand delivery a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of §§ 264.221 (c) or (d), 264.251 (c) or (d), or 264.301 (c) or (d); and the procedure in § 270.30(l)(2)(ii) of this chapter has been completed. Documentation supporting the CQA officer's certification must be furnished to the Regional Administrator upon request.

4. Section 264.73 is amended by revising paragraph (b)(6) to read as follows:

§ 264.73 Operating record.

* * * * *

(b) * * *

(6) Monitoring, testing or analytical data, and corrective action where required by subpart F and §§ 264.19, 264.191, 264.193, 264.195, 264.222, 264.223, 264.226, 264.252-264.254, 264.276, 264.278, 264.280, 264.302-264.304, 264.309, 264.347, 264.602, 264.1034(c)-264.1034(f), 264.1035, 264.1063(d)-264.1063(i), and 264.1064.

* * * * *

5. Section 264.221 is amended by redesignating paragraphs (f), (g), and (h) as paragraphs (g), (h), and (i), respectively; by revising paragraphs (c) and (d); and by adding new paragraph (f) to read as follows:

§ 264.221 Design and operating requirements.

* * * * *

(c) The owner or operator of each new surface impoundment unit on which construction commences after January 29, 1992, each lateral expansion of a surface impoundment unit on which construction commences after July 29, 1992 and each replacement of an existing surface impoundment unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system between such liners. "Construction commences" is as defined in § 260.10 of this chapter under "existing facility".

(1)(i) The liner system must include:

(A) A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

(B) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than $1X10/^{-7}$/cm/sec.

(ii) The liners must comply with paragraphs (a) (1), (2), and (3) of this section.

(2) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection

and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:

(i) Constructed with a bottom slope of one percent or more;

(ii) Constructed of granular drainage materials with a hydraulic conductivity of $1X10/^{-1}$/cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of $3X10/^{-4}/m^2$sec or more;

(iii) Constructed of materials that are chemically resistant to the waste managed in the surface impoundment and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes and any waste cover materials or equipment used at the surface impoundment;

(iv) Designed and operated to minimize clogging during the active life and post-closure care period; and

(v) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(3) The owner or operator shall collect and remove pumpable liquids in the sumps to minimize the head on the bottom liner.

(4) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

(d) The Regional Administrator may approve alternative design or operating practices to those specified in paragraph (c) of this section if the owner or operator demonstrates to the Regional Administrator that such design and operating practices, together with location characteristics:

(1) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal system specified in paragraph (c) of this section; and

(2) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

* * * * *

(f) The owner or operator of any replacement surface impoundment unit is exempt from paragraph (c) of this section if:

(1) The existing unit was constructed in compliance with the design standards of sections 3004 (o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act; and

(2) There is no reason to believe that the liner is not functioning as designed.

* * * * *

6. New §§ 264.222 and 264.223 are added to read as follows:

§ 264.222 Action leakage rate.

(a) The Regional Administrator shall approve an action leakage rate for surface impoundment units subject to § 264.221 (c) or (d). The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(b) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under § 264.226(d) to an average daily flow rate (gallons per acre per day) for each sump. Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and if the unit is closed in accordance with § 264.228(b), monthly during the post-closure care period when monthly monitoring is required under § 264.226(d).

§ 264.223 Response actions.

(a) The owner or operator of surface impoundment units subject to § 264.221 (c) or (d) must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has

been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

(1) Notify the Regional Administrator in writing of the exceedence within 7 days of the determination;

(2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(3) Determine to the extent practicable the location, size, and cause of any leak;

(4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b) (3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in paragraphs (b) (3), (4), and (5) of this section, the owner or operator must:

(1)(i) Assess the source of liquids and amounts of liquids by source,

(ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(2) Document why such assessments are not needed.

7. Section 264.226 is amended by adding new paragraph (d) to read as follows:

§ 264.226 Monitoring and inspection.

* * * * *

(d)(1) An owner or operator required to have a leak detection system under § 264.221 (c) or (d) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(2) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

(3) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Regional Administrator based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.

8. Section 264.228 is amended by redesignating paragraphs (b)(2) and (b)(3) as paragraphs (b)(3) and (b)(4) respectively, and by adding a new paragraph (b)(2) to read as follows:

§ 264.228 Closure and post-closure care.

* * * * *

(b) * * *

(2) Maintain and monitor the leak detection system in accordance with §§ 264.221(c)(2)(iv) and (3) and 264.226(d), and comply with all other applicable leak detection system requirements of this part;

* * * * *

9. Section 264.251 is amended by redesignating paragraphs (c), (d), (e), (f), and (g) as paragraphs (g), (h), (i), (j) and (k), respectively, and by adding new paragraphs (c), (d), (e), and (f) to read as follows:

§ 264.251 Design and operating requirements.

* * * * *

(c) The owner or operator of each new waste pile unit on which construction commences after January 29, 1992, each lateral expansion of a waste pile unit on which construction commences after July 29, 1992, and each replacement of an existing waste pile unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners. "Construction commences" is as defined in § 260.10 under "existing facility".

(1)(i) The liner system must include:

(A) A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

(B) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than $1X10^{-7}$ cm/sec.

(ii) The liners must comply with paragraphs (a)(1)(i), (ii), and (iii) of this section.

(2) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the waste pile during the active life and post-closure care period. The Regional Administrator will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must comply with paragraphs (c)(3)(iii) and (iv) of this section.

(3) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:

(i) Constructed with a bottom slope of one percent or more;

(ii) Constructed of granular drainage materials with a hydraulic conductivity of $1X10^{-2}$ cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of $3X10^{-5}$ m^2/sec or more:

(iii) Constructed of materials that are chemically resistant to the waste managed in the waste pile and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the waste pile;

(iv) Designed and operated to minimize clogging during the active life and post-closure care period; and

(v) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(4) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

(5) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

(d) The Regional Administrator may approve alternative design or operating practices to those specified in paragraph (c) of this section if the owner or operator demonstrates to the Regional Administrator that such design and operating practices, together with location characteristics:

(1) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in paragraph (c) of this section; and

(2) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

(e) Paragraph (c) of this section does not apply to monofills that are granted a waiver by the Regional Administrator in accordance with § 264.221(e).

(f) The owner or operator of any replacement waste pile unit is exempt from paragraph (c) of this section if:

(1) The existing unit was constructed in compliance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act; and

(2) There is no reason to believe that the liner is not functioning as designed.

* * * * *

10. New §§ 264.252 and 264.253 are added to read as follows:

§ 264.252 Action leakage rate.

(a) The Regional Administrator shall approve an action leakage rate for surface impoundment units subject to § 264.251(c) or (d). The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(b) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under § 264.254(c), to an average daily flow rate (gallons per acre per day) for each sump. Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.

§ 264.253 Response actions.

(a) The owner or operator of waste pile units subject to § 264.251 (c) or (d) must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

(1) Notify the Regional Administrator in writing of the exceedance within 7 days of the determination;

(2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(3) Determine to the extent practicable the location, size, and cause of any leak;

(4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(5) Determine any other short-term and long-term actions to be taken to mitigate or stop any leaks; and

(6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b) (3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in paragraphs (b) (3), (4), and (5) of this section, the owner or operator must:

(1)(i) Assess the source of liquids and amounts of liquids by source,

(ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(2) Document why such assessments are not needed.

11. Section 264.254 is amended by adding new paragraph (c) to read as follows:

§ 264.254 Monitoring and inspection.

* * * * *

(c) An owner or operator required to have a leak detection system under § 264.251(c) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

12. Section 264.301 is amended by redesignating paragraphs (f), (g), (h), (i), (j), and (k) as paragraphs (g), (h), (i), (j), (k), and (l), respectively, by revising paragraphs (c) and (d), and by adding new paragraph (f) to read as follows:

§ 264.301 Design and operating requirements.

* * * * *

(c) The owner or operator of each new landfill unit on which construction commences after January 29, 1992, each lateral expansion of a landfill unit on which construction commences after July 29, 1992, and each replacement of an existing landfill unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners. "Construction commences" is as defined in § 260.10 of this chapter under "existing facility".

(1)(i) The liner system must include:

(A) A top liner designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into such liner during the active life and post-closure care period; and

(B) A composite bottom liner, consisting of at least two components. The upper component must be designed and constructed of materials (e.g., a geomembrane) to prevent the migration of hazardous constituents into this component during the active life and post-closure care period. The lower component must be designed and constructed of materials to minimize the migration of hazardous constituents if a breach in the upper component were to occur. The lower component must be constructed of at least 3 feet (91 cm) of compacted soil material with a hydraulic conductivity of no more than $1X10^{-7}$ cm/sec.

(ii) The liners must comply with paragraphs (a)(1) (i), (ii), and (iii) of this section.

(2) The leachate collection and removal system immediately above the top liner must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and post-closure care period. The Regional Administrator will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (one foot). The leachate collection and removal system must comply with paragraphs (3)(c) (iii) and (iv) of this section.

(3) The leachate collection and removal system between the liners, and immediately above the bottom composite liner in the case of multiple leachate collection and removal systems, is also a leak detection system. This leak detection system must be capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time through all areas of the top liner likely to be exposed to waste or leachate during the active life and post-closure care period. The requirements for a leak detection system in this paragraph are satisfied by installation of a system that is, at a minimum:

(i) Constructed with a bottom slope of one percent or more;

(ii) Constructed of granular drainage materials with a hydraulic conductivity of $1X10^{-2}$ cm/sec or more and a thickness of 12 inches (30.5 cm) or more; or constructed of synthetic or geonet drainage materials with a transmissivity of $3X10^{-5}$ m^2/sec or more;

(iii) Constructed of materials that are chemically resistant to the waste managed in the landfill and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials, and equipment used at the landfill;

(iv) Designed and operated to minimize clogging during the active life and post-closure care period; and

(v) Constructed with sumps and liquid removal methods (e.g., pumps) of sufficient size to collect and remove liquids from the sump and prevent liquids from backing up into the drainage layer. Each unit must have its own sump(s). The design of each sump and removal system must provide a method for measuring and recording the volume of liquids present in the sump and of liquids removed.

(4) The owner or operator shall collect and remove pumpable liquids in the leak detection system sumps to minimize the head on the bottom liner.

(5) The owner or operator of a leak detection system that is not located completely above the seasonal high water table must demonstrate that the operation of the leak detection system will not be adversely affected by the presence of ground water.

(d) The Regional Administrator may approve alternative design or operating practices to those specified in paragraph (c) of this section if the owner or operator demonstrates to the Regional Administrator that such design and operating practices, together with location characteristics:

(1) Will prevent the migration of any hazardous constituent into the ground water or surface water at least as effectively as the liners and leachate collection and removal systems specified in paragraph (c) of this section; and

(2) Will allow detection of leaks of hazardous constituents through the top liner at least as effectively.

* * * * *

(f) The owner or operator of any replacement landfill unit is exempt from paragraph (c) of this section if:

(1) The existing unit was constructed in compliance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act; and

(2) There is no reason to believe that the liner is not functioning as designed.

* * * * *

13. New § 264.302 is added to read as follows:

§ 264.302 Action leakage rate.

(a) The Regional Administrator shall approve an action leakage rate for surface impoundment units subject to § 264.301(c) or (d). The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding l foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(b) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under § 264.303(c), to an average daily flow rate (gallons per acre per day) for each sump. Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the post-closure care period when monthly monitoring is required under § 264.303(c).

14. Section 264.303 is amended by adding new paragraph (c) to read as follows:

§ 264.303 Monitoring and inspection.

* * * * *

(c)(1) An owner or operator required to have a leak detection system under § 264.301(c) or (d) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(2) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-

annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

(3) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Regional Administrator based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump.

15. New § 264.304 is added to read as follows:

§ 264.304 Response actions.

(a) The owner or operator of landfill units subject to § 264.301(c) or (d) must have an approved response action plan before receipt of waste. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

(1) Notify the Regional Administrator in writing of the exceedence within 7 days of the determination;

(2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(3) Determine to the extent practicable the location, size, and cause of any leak;

(4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:

(1)(i) Assess the source of liquids and amounts of liquids by source,

(ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(2) Document why such assessments are not needed.

16. Section 264.310 is amended by redesignating paragraphs (b)(3), (4), and (5) as paragraphs (b)(4), (5), and (6) respectively, and by adding a new paragraph (b)(3) to read as follows:

§ 264.310 Closure and post-closure care.

* * * * *

(b) * * *

(3) Maintain and monitor the leak detection system in accordance with §§ 264.301(c)(3)(iv) and (4) and 264.303(c), and comply with all other applicable leak detection system requirements of this part;

* * * * *

PART 265-INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for Part 265 is revised to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, 6935, and 6936.

2. Section 265.15 is amended by revising paragraph (b)(4) to read as follows:

§ 265.15 General inspection requirements.

* * * * *

(b)* * *

(4) The frequency of inspection may vary for the items on the schedule. However, it should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§ 265.174, 265.193, 265.195, 265.226, 265.260, 265.278, 265.304, 265.347, 265.377, 265.403, 265.1033, 265.1052, 265.1053, and 265.1058, where applicable.

* * * * *

3. Subpart B is amended by adding § 265.19 to read as follows:

§ 265.19 Construction quality assurance program.

(a) CQA program. (1) A construction quality assurance (CQA) program is required for all surface impoundment, waste pile, and landfill units that are required to comply with §§ 265.221(a), 265.254, and 265.301(a). The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

(2) The CQA program must address the following physical components, where applicable:

(i) Foundations;

(ii) Dikes;

(iii) Low-permeability soil liners;

(iv) Geomembranes (flexible membrane liners);

(v) Leachate collection and removal systems and leak detection systems; and

(vi) Final cover systems.

(b) Written CQA plan. Before construction begins on a unit subject to the CQA program under paragraph (a) of this section, the owner or operator must develop a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:

(1) Identification of applicable units, and a description of how they will be constructed.

(2) Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.

(3) A description of inspection and sampling activities for all unit components identified in paragraph (a)(2) of this section, including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: Sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under § 265.73.

(c) Contents of program. (1) The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:

(i) Structural stability and integrity of all components of the unit identified in paragraph (a)(2) of this section;

(ii) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;

(iii) Conformity of all materials used with design and other material specifications under §§ 264.221, 264.251, and 264.301 of this chapter.

(2) The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full-scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of §§ 264.221(c)(1), 264.251(c)(1), and 264.301(c)(1) of this chapter in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The test fill requirement is waived where data are sufficient to show that a constructed soil liner meets the hydraulic conductivity requirements of §§ 264.221(c)(1), 264.254(c)(1), and 264.301(c)(1) of this chapter in the field.

(d) Certification. The owner or operator of units subject to § 265.19 must submit to the Regional Administrator by certified mail or hand delivery, at least 30 days prior to receiving waste, a certification signed by the CQA officer that the CQA plan has been successfully carried out and that the unit meets the requirements of §§ 265.221(a), 265.254, or 265.301(a). The owner or operator may receive waste in the unit after 30 days from the Regional Administrator's receipt of the CQA certification unless the Regional Administrator determines in writing that the construction is not acceptable, or extends the review period for a maximum of 30 more days, or seeks additional information from the owner or operator during this period. Documentation supporting the CQA officer's certification must be furnished to the Regional Administrator upon request.

4. Section 265.73 is amended by revising paragraph (b)(6) to read as follows:

§ 265.73 Operating record.

* * * * *

(b)* * *

(6) Monitoring, testing, or analytical data, and corrective action where required by subpart F and §§ 265.19, 265.90, 265.94, 265.191, 265.193, 265.195, 265.222, 265.223, 265.226, 265.255, 265.259, 265.260, 265.276, 265.278, 265.280(d)(1), 265.302-265.304, 265.347, 265.377, 265.1034(c)-265.1034(f), 265.1035, 265.1063(d)-264.1063(i), and 265.1064.

* * * * *

5. Section 265.221 is amended by revising the section heading and by revising paragraphs (a) and (c) to read as follows:

§ 265.221 Design and operating requirements.

(a) The owner or operator of each new surface impoundment unit on which construction commences after January 29, 1992, each lateral expansion of a surface impoundment unit on which construction commences after July 29, 1992, and each replacement of an existing surface impoundment unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system between such liners, and operate the leachate collection and removal system, in accordance with § 264.221(c), unless exempted under § 264.221(d), (e), or (f), of this chapter. "Construction commences" is as defined in § 260.10 of this chapter under "existing facility."

* * * * *

(c) The owner or operator of any replacement surface impoundment unit is exempt from paragraph (a) of this section if:

(1) The existing unit was constructed in compliance with the design standards of § 3004(o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act; and

(2) There is no reason to believe that the liner is not functioning as designed.

* * * * *

6. Paragraphs (a) and (b) of § 265.222 are transferred to § 265.221 and redesignated as paragraphs (f) and (g), respectively.

7. Section 265.222, is amended by revising, the section heading and adding paragraphs (a) through (c) and § 265.223 is added to read as follows:

§ 265.222 Action leakage rate.

(a) The owner or operator of surface impoundment units subject to § 265.221(a) must submit a proposed action leakage rate to the Regional Administrator when submitting the notice required under § 265.221(b). Within 60 days of receipt of the notification, the Regional Administrator will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this section; or extend the review period for up to 30 days. If no action is taken by the Regional Administrator before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

(b) The Regional Administrator shall approve an action leakage rate for surface impoundment units subject to § 265.221(a). The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(c) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under § 265.226(b), to an average daily flow rate (gallons per acre per day) for each sump. Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and if the unit closes in accordance with § 265.228(a)(2), monthly during the post-closure care period when monthly monitoring is required under § 265.226(b).

§ 265.223 Response actions.

(a) The owner or operator of surface impoundment units subject to § 265.221(a) must submit a response action plan to the Regional Administrator when submitting the proposed action leakage rate under § 265.222. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

(1) Notify the Regional Administrator in writing of the exceedence within 7 days of the determination;

(2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(3) Determine to the extent practicable the location, size, and cause of any leak;

(4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:

(1)(i) Assess the source of liquids and amounts of liquids by source,

(ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(2) Document why such assessments are not needed.

8. Section 265.226 is amended by revising the section heading and adding new paragraph (b) to read as follows:

§ 265.226 Monitoring and inspection.

* * * * *

(b)(1) An owner or operator required to have a leak detection system under § 265.221(a) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(2) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

(3) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Regional Administrator based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump. The timing for submission and approval of the proposed "pump operating level" will be in accordance with § 265.222(a).

9. Section 265.228 is amended by redesignating paragraphs (b)(2) and (3) as paragraphs (b)(3) and (4) respectively, and by adding a new paragraph (b)(2) to read as follows:

§ 265.228 Closure and post-closure care.

* * * * * * *

(b) * * *

(2) Maintain and monitor the leak detection system in accordance with §§ 265.221(c)(2)(iv) and (3) of this chapter and 265.226(b) and comply with all other applicable leak detection system requirements of this part;

* * * * * * *

10. Section 265.254 is revised, including the section heading, to read as follows:

§ 265.254 Design and operating requirements.

The owner or operator of each new waste pile on which construction commences after January 29, 1992, each lateral expansion of a waste pile unit on which construction commences after July 29, 1992, and each such replacement of an existing waste pile unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners, and operate the leachate collection and removal systems, in accordance with §

264.251(c), unless exempted under § 264.251(d), (e), or (f), of this chapter; and must comply with the procedures of § 265.221(b). "Construction commences" is as defined in § 260.10 of this chapter under "existing facility".

11. New §§ 265.255, 265.259, and 265.260 are added to read as follows:

§ 265.255 Action leakage rates

(a) The owner or operator of waste pile units subject to § 265.254 must submit a proposed action leakage rate to the Regional Administrator when submitting the notice required under § 265.254. Within 60 days of receipt of the notification, the Regional Administrator will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this section; or extend the review period for up to 30 days. If no action is taken by the Regional Administrator before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

(b) The Regional Administrator shall approve an action leakage rate for surface impoundment units subject to § 265.254. The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(c) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly flow rate from the monitoring data obtained under § 265.260, to an average daily flow rate (gallons per acre per day) for each sump. Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period.

§ 265.259 Response actions.

(a) The owner or operator of waste pile units subject to § 265.254 must submit a response action plan to the Regional Administrator when submitting the proposed action leakage rate under § 265.255. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak determination system exceeds the action leakage rate for any sump, the owner or operator must:

(1) Notify the Regional Administrator in writing of the exceedence within 7 days of the determination;

(2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(3) Determine to the extent practicable the location, size, and cause of any leak;

(4) Determine whether waste receipts should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:

(1)(i) Assess the source of liquids and amounts of liquids by source,

(ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(2) Document why such assessments are not needed.

§ 265.260 Monitoring and inspection.

An owner or operator required to have a leak detection system under § 265.254 must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

12. Section 265.301 is amended by revising the section heading and by revising paragraphs (a) and (c) to read as follows:

§ 265.301 Design and operating requirements.

(a) The owner or operator of each new landfill unit on which construction commences after January 29, 1992, each lateral expansion of a landfill unit on which construction commences after July 29, 1992, and each replacement of an existing landfill unit that is to commence reuse after July 29, 1992 must install two or more liners and a leachate collection and removal system above and between such liners, and operate the leachate collection and removal systems, in accordance with § 264.301(d), (e), or (f), of this chapter. "Construction commences" is as defined in § 260.10 of this chapter under "existing facility".

* * * * * * *

(c) The owner or operator of any replacement landfill unit is exempt from paragraph (a) of this section if:

(1) The existing unit was constructed in compliance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act; and

(2) There is no reason to believe that the liner is not functioning as designed.

* * * * * * *

13. Paragraphs (a), (b), (c), and (d) of § 265.302 are transferred to § 265.301 and redesignated as paragraphs (f), (g), (h), and (i), respectively.

14. Section 265.302, is amended by revising the section heading and adding paragraphs (a) through (c) and new §§ 265.303 and 265.304 are added to read as follows:

§ 265.302 Action leakage rate.

(a) The owner or operator of landfill units subject to § 265.301(a) must submit a proposed action leakage rate to the Regional Administrator when submitting the notice required under § 265.301(b). Within 60 days of receipt of the notification, the Regional Administrator will: Establish an action leakage rate, either as proposed by the owner or operator or modified using the criteria in this section; or extend the review period for up to 30 days. If no action is taken by the Regional Administrator before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

(b) The Regional Administrator shall approve an action leakage rate for surface impoundment units subject to § 265.301(a). The action leakage rate is the maximum

design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding 1 foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g., slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(c) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under § 265.304 to an average daily flow rate (gallons per acre per day) for each sump. Unless the Regional Administrator approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the post-closure care period when monthly monitoring is required under § 265.304(b).

§ 265.303 Response actions.

(a) The owner or operator of landfill units subject to § 265.301(a) must submit a response action plan to the Regional Administrator when submitting the proposed action leakage rate under § 265.302. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in paragraph (b) of this section.

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

(1) Notify the Regional Administrator in writing of the exceedence within 7 days of the determination;

(2) Submit a preliminary written assessment to the Regional Administrator within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

(3) Determine to the extent practicable the location, size, and cause of any leak;

(4) Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

(5) Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

(6) Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Regional Administrator the results of the analyses specified in paragraphs (b)(3), (4), and (5) of this section, the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Regional Administrator a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in paragraphs (b)(3), (4), and (5) of this section, the owner or operator must:

(1)(i) Assess the source of liquids and amounts of liquids by source,

(ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

(2) Document why such assessments are not needed.

§ 265.304 Monitoring and inspection.

(a) An owner or operator required to have a leak detection system under § 265.301(a) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(b) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

(c) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Regional Administrator based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump. The timing for submission and approval of the proposed "pump operating level" will be in accordance with § 265.302(a).

15. Section 265.310 is amended by redesignating paragraphs (b)(2), (3), and (4) as paragraphs (b)(3), (4), and (5), respectively, and by adding a new paragraph (b)(2) to read as follows:

§ 265.310 Closure and post-closure care.

* * * * *

(b) * * *

(2) Maintain and monitor the leak detection system in accordance with §§ 264.301(c)(3)(iv) and (4) of this chapter and 265.304(b), and comply with all other applicable leak detection system requirements of this part;

* * * * *

PART 270-EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

1. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

2. Section 270.4 is amended by revising paragraph (a) to read as follows:

§ 270.4 Effect of a permit.

(a) Compliance with a RCRA permit during its term constitutes compliance, for purposes of enforcement, with subtitle C of RCRA except for those requirements not included in the permit which:

(1) Become effective by statute;

(2) Are promulgated under part 268 of this chapter restricting the placement of hazardous wastes in or on the land; or

(3) Are promulgated under part 264 of this chapter regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units. The leak detection system requirements include double liners, CQA programs, monitoring, action leakage rates, and response action plans, and will be implemented through the procedures of § 270.42 Class 1* permit modifications.

* * * * *

(3) Section 270.17 is amended by redesignating paragraphs (b)(2) and (3) as (b)(6) and (7) respectively; revising paragraph (b); introductory text; adding paragraphs (b)(2) through (b)(5); and revising paragraph (c) to read as follows:

§ 270.17 Specific Part B information requirements for surface impoundments.

* * * * *

(b) Detailed plans and an engineering report describing how the surface impoundment is designed and is or will be constructed, operated, and maintained to meet the requirements of §§ 264.19, 264.221, 264.222, and 264.223 of this chapter, addressing the following items:

(1) * * *

(2) The double liner and leak (leachate) detection, collection, and removal system, if the surface impoundment must meet the requirements of § 264.221(c) of this chapter. If an exemption from the requirements for double liners and a leak detection, collection, and removal system or alternative design is sought as provided by § 264.221(d), (e), or (f) of this chapter, submit appropriate information;

(3) If the leak detection system is located in a saturated zone, submit detailed plans and an engineering report explaining the leak detection system design and operation, and the location of the saturated zone in relation to the leak detection system;

(4) The construction quality assurance (CQA) plan if required under § 264.19 of this chapter;

(5) Proposed action leakage rate, with rationale, if required under § 264.222 of this chapter, and response action plan, if required under § 264.223 of this chapter;

* * * * *

(c) A description of how each surface impoundment, including the double liner system, leak detection system, cover system, and appurtenances for control of overtopping, will be inspected in order to meet the requirements of § 264.226(a), (b), and (d) of this chapter. This information must be included in the inspection plan submitted under § 270.14(b)(5);

* * * * *

4. Section 270.18 is amended by revising paragraphs (c) introductory text, (c)(1) and (d) to read as follows:

§ 270.18 Specific Part B information for waste piles.

* * * * *

(c) Detailed plans and an engineering report describing how the waste pile is designed and is or will be constructed, operated, and maintained to meet the requirements of §§ 264.19, 264.251, 264.252, and 264.253 of this chapter, addressing the following items:

(1)(i) The liner system (except for an existing portion of a waste pile), if the waste pile must meet the requirements of § 264.251(a) of this chapter. If an exemption from the requirement for a liner is sought as provided by § 264.251(b) of this chapter, submit detailed plans, and engineering and hydrogeological reports, as appropriate, describing alternate designs and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

(ii) The double liner and leak (leachate) detection, collection, and removal system, if the waste pile must meet the requirements of § 264.251(c) of this chapter. If an exemption from the requirements for double liners and a leak detection, collection, and removal system or alternative design is sought as provided by § 264.251(d), (e), or (f) of this chapter, submit appropriate information;

(iii) If the leak detection system is located in a saturated zone, submit detailed plans and an engineering report explaining the leak detection system design and operation, and the location of the saturated zone in relation to the leak detection system;

(iv) The construction quality assurance (CQA) plan if required under § 264.19 of this chapter;

(v) Proposed action leakage rate, with rationale, if required under § 264.252 of this chapter, and response action plan, if required under § 264.253 of this chapter;

* * * * *

(d) A description of how each waste pile, including the double liner system, leachate collection and removal system, leak detection system, cover system, and appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of § 264.254(a), (b), and (c) of this chapter. This information must be included in the inspection plan submitted under § 270.14(b)(5);

* * * * *

5. Section 270.21 is amended by revising paragraphs (b) introductory text, (b)(1) and (c) to read as follows:

§ 270.21 Specific Part B information requirements for landfills.

* * * * *

(b) Detailed plans and an engineering report describing how the landfill is designed and is or will be constructed, operated, and maintained to meet the requirements of §§ 264.19, 264.301, 264.302, and 264.303 of this chapter, addressing the following items:

(1)(i) The liner system (except for an existing portion of a landfill), if the landfill must meet the requirements of § 264.301(a) of this chapter. If an exemption from the requirement for a liner is sought as provided by § 264.301(b) of this chapter, submit detailed plans, and engineering and hydrogeological reports, as appropriate, describing alternate designs and operating practices that will, in conjunction with location aspects, prevent the migration of any hazardous constituents into the ground water or surface water at any future time;

(ii) The double liner and leak (leachate) detection, collection, and removal system, if the landfill must meet the requirements of § 264.301(c) of this chapter. If an exemption from the requirements for double liners and a leak detection, collection, and removal system or alternative design is sought as provided by § 264.301(d), (e), or (f) of this chapter, submit appropriate information;

(iii) If the leak detection system is located in a saturated zone, submit detailed plans and an engineering report explaining the leak detection system design and operation, and the location of the saturated zone in relation to the leak detection system;

(iv) The construction quality assurance (CQA) plan if required under § 264.19 of this chapter;

(v) Proposed action leakage rate, with rationale, if required under § 264.302 of this chapter, and response action plan, if required under § 264.303 of this chapter;

* * * * *

(c) A description of how each landfill, including the double liner system, leachate collection and removal system, leak detection system, cover system, and appurtenances for control of run-on and run-off, will be inspected in order to meet the requirements of § 264.303(a), (b), and (c) of this chapter. This information must be included in the inspection plan submitted under § 270.14(b)(5);

* * * * *

6. Section 270.42 is amended by adding the following to Appendix I:

§ 270.42 Permit modification at the request of the permittee.

* * * * *

Appendix I To § 270.42.-Classification of Permit Modification

Modification	Class

* * * * *

B. * * *

7. Construction quality assurance plan:

a. Changes that the CQA officer certifies in the operating record will provide equivalent or better certainty that the unit components meet the design specifications.

b. Other changes	1 2

* * * * *

H. * * *

6. Modifications of unconstructed units to comply with §§ 264.221(c), 264.222, 264.223, and 264.226(d)	*1
7. Changes in response action plan:	
a. Increase in action leakage rate	3
b. Change in a specific response reducing its frequency or effectiveness.	3
c. Other changes	2

* * * * *

J. * * *

7. Modifications of unconstructed units to comply with §§ 264.251(c), 264.252, 264.253, 264.254(c), 264.301(c), 264.302, 264.303(c), and 264.304.	*1
8. Changes in response action plan:	
a. Increase in action leakage rate	3
b. Change in a specific response reducing its frequency or effectiveness.	3
c. Other changes	2

---

* * * * *

>>>> § 271 has not been included because it is not required as part of a State's Hazardous Waste Program. <<<<

[FR Doc. 92-1655 Filed 1-28-92; 8:45 am]

BILLING CODE 6560-50-M

End of Federal Register article

DIALOG Accession Number: 02241155 Supplier Number: 920700839

Federal Register

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristic; Corrections

Volume: 57 Issue: 133 Page: 30657
CITATION NUMBER: 57 FR 30657
Date: FRIDAY, JULY 10, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 261
NUMBERS: EPA/OSW-FRL-4151-2; RIN 2050-AA78
DATES: Effective: 19920710
Appeared in FR: 19900329
CONTACT INFORMATION: RCRA-Superfund Hotline, 800-424-9346,, 202-260-3000; or; Dave Topping, 202-260-7737
ACTION: Final rule; corrections
INTERNAL DATA: (FR Doc. 92-15967 Filed 7-9-92; 8:45 am)
Word Count: 937

SUMMARY: On March 29, 1990, the Environmental Protection Agency (EPA) promulgated a rule (55 FR 11798) to revise the existing toxicity characteristics (TC) used to identify certain wastes defined as hazardous; these wastes are regulated under subtitle C of the Resource Conservation and Recovery Act (RCRA) due to their potential to leach significant concentrations of specific toxic constituents. In the preamble, the exclusion from subtitle C regulation for arsenical-treated wood and wood products was revised inappropriately. This rule corrects that revision. Today's rule also deletes two additional references in the Code of Federal Regulations (CFR) to the Extraction Procedure (EP) Toxicity Characteristic and replaces them with references to the TC.

TEXT:

40 CFR Part 261

(EPA/OSW-FRL-4151-2)

RIN 2050-AA78

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristic; Corrections

AGENCY: Environmental Protection Agency, (EPA).

ACTION: Final rule; corrections.

SUMMARY: On March 29, 1990, the Environmental Protection Agency (EPA) promulgated a rule (55 FR 11798) to revise the existing toxicity characteristics (TC) used to identify certain wastes defined as hazardous; these wastes are regulated under subtitle C of the Resource Conservation and Recovery Act (RCRA) due to their potential to leach significant concentrations of specific toxic constituents. In the preamble, the

exclusion from subtitle C regulation for arsenical-treated wood and wood products was revised inappropriately. This rule corrects that revision. Today's rule also deletes two additional references in the Code of Federal Regulations (CFR) to the Extraction Procedure (EP) Toxicity Characteristic and replaces them with references to the TC.

EFFECTIVE DATE: The revision is effective July 10, 1992.

FOR FURTHER INFORMATION CONTACT: For general information about this notice, contact the RCRA/Superfund Hotline at (800) 424-9346 (toll free) or (202) 260-3000 in the Washington, DC metropolitan area. For information on specific aspects of this notice, contact Dave Topping, Waste Identification Branch, Office of Solid Waste (OS-332), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 260-7737.

SUPPLEMENTARY INFORMATION:

A. Background

On March 29, 1990 (55 FR 11798), EPA promulgated a rule to revise the existing toxicity characteristics used to identify certain wastes defined as hazardous; these waste are regulated under subtitle C of RCRA. This rule broadened the scope of the hazardous waste regulatory program and fulfilled specific statutory mandates under the Hazardous and Solid Waste Amendments of 1984. The existing Extraction Procedure was replaced by the Toxicity Characteristic Leaching Procedure (TCLP), and additional constituents were added to the list that could cause a waste to be hazardous under the toxicity characteristic. Technical corrections to this rule were published on June 29, 1990 (55 FR 26986), August 2, 1990 (55 FR 31387), and September 27, 1990 (55 FR 39409).

B. Arsenical-Treated Wood

Today's rule corrects an error made at the time of promulgation of the final Toxicity Characteristic (TC) rule. The 1990 rule amended the preexisting exclusion from the characteristic of EP Toxicity to arsenical-treated wood and wood products. Previously, 40 CFR 261.4(b)(9) excluded from the definition of hazardous waste those discarded arsenical-treated wood or wood products that failed the test for EP toxicity characteristic (EPTC) and were not hazardous for any other reason, if the waste was generated by persons who utilize the arsenical-treated wood and wood products for these materials' intended end use.

When the TC was promulgated, EPA revised that provision to reflect the new characteristics. However, the Agency unintentionally narrowed the scope of the exclusion by rewording the provision so that only arsenical-treated wood and wood products that failed the TC "solely for arsenic" would be excluded.

Therefore, arsenical-treated wood and wood products that failed the TC for other EP constituents (e.g., chromium) would not become regulated as hazardous waste. However, EPA had not intended to change the scope of the arsenical-treated wood exclusion. As noted in the preamble (55 FR 11805), EPA had intended only to replace references to the EPTC with the TC. Today's rule, therefore, corrects the arsenical-treated wood and wood products exclusion by excluding these materials from RCRA subtitle C if they exhibit the TC for any of the EP constituents but are not hazardous for any other reason and are used for their intended purpose.

C. Other Technical Corrections

Today's rule also corrects the regulatory language in 40 CFR 261.4(b)(6)(ii) and 265.301(d)(1) by deleting references to the Extraction Procedure (EP) Toxicity Characteristic and by correctly referencing the TC. 40 CFR 261.4(b)(6)(ii) contains the list of specific chromium bearing wastes that are not hazardous wastes if they do not exhibit the TC or other characteristics of hazardous waste. Also, the technical correction in 40 CFR 265.301(d)(1) applies to the double liner design requirements for landfills at interim status facilities. This correction makes the requirements identical to those for permitted facilities, as found in 40 CFR 264.301(e)(1).

D. Rulemaking Procedures

Because the revisions in this notice correct inadvertent errors or omissions from the 1990 TC rule and are not substantive changes in the scope or content of the affected provisions, public notice and comment on these revisions is necessary. See 5 U.S.C. 553(b)(3)(B). For the same reasons, an immediate effective date is appropriate. 5 U.S.C. 553(d).

Richard J. Guimond,
Deputy Assistant Administrator, Solid Waste and Emergency Response.

For the reasons set out in the preamble, chapter I of title 40 of the Code of Federal Regulations is amended as follows:

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6922, and 6938.

2. Section 261.4 is amended by revising paragraph (b)(6)(ii) introductory text to read as follows:

Sec. 261.4 Exclusions.

* * * * *

(b) * * *
(6) * * *
(ii) Specific waste which meet the standard in paragraphs (b)(6)(i) (A), (B), and (C) (so long as they do not fail the test for the toxicity characteristic for any other constituent, and do not exhibit any other characteristic) are: * * *

3. Section 261.4 is amended further by revising paragraph (b)(9) to read as follows:

Sec. 261.4 Exclusions
* * * * *

(b) * * *
(9) Solid waste which consists of discarded arsenical-treated wood or wood products which fails the test for the Toxicity Characteristic for Hazardous Waste Codes D004 through D017 and which is not a hazardous waste for any other reason if the waste is generated by persons who utilize the

arsenical- treated wood and wood product for these materials' intended end use.

* * * * *

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

4. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

5. Section 265.301 is amended by revising paragraph (d)(1) to read as follows:

Sec. 265.301 Design requirements.

* * * * *

(d) * * *
(1) The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such waste does not contain constituents which would render the wastes hazardous for reasons other than the Toxicity Characteristic in Sec. 261.4 of this chapter, with EPA Hazardous Waste Number D004 through D017; and
* * * * *

(FR Doc. 92-15967 Filed 7-9-92; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 1006 2002 3002 3017 3014 3005 3004 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-463 SEC. 7 -- Used Oil Recycling Act of 1980
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-616 SEC. 245 -- Hazardous and Solid Waste Amendments of 1984

DIALOG(R)File 180:Federal Register

Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris
Volume: 57 Issue: 160 Page: 37194
CITATION NUMBER: 57 FR 37194
Date: TUESDAY, AUGUST 18, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR 148, 260, 261, 262, 264, 265, 268, 270, 271
NUMBERS: FRL-4132-4; RIN 2050-AD36
DATES: Effective: 19920630
Effective: 19921116
Effective: 19920218
CONTACT INFORMATION: RCRA Hotline, 800-424-9346,, 703-920-9810,; or; Waste Treatment Branch, 703-308-8434,; or; Capacity Programs Branch, 703-308-8440
ACTION: Final rule
INTERNAL DATA: (FR Doc. 92-15997 Filed 8-17-92; 8:45 am)
Word Count: 87054
SUMMARY: The Environmental Protection Agency (EPA) is finalizing treatment standards under the land disposal restrictions (LDR) program for certain hazardous wastes listed after November 8, 1984, pursuant to a proposed consent decree filed with the District Court that established a promulgation date of June 1992 (EDF v. Reilly, Civ. No. 89-0598, D.D.C.). EPA is also finalizing revised treatment standards for debris contaminated with listed hazardous waste or debris that exhibits certain hazardous waste characteristics (hereinafter referred to as hazardous debris), and several revisions to previously promulgated standards and requirements. These actions are being taken as part of the RCRA Reform Initiative, and are expected to facilitate implementation of the LDR program.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 260, 261, 262, 264, 265, 268, 270 and 271

(FRL-4132-4)

RIN 2050-AD36

Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is finalizing treatment

standards under the land disposal restrictions (LDR) program for certain hazardous wastes listed after November 8, 1984, pursuant to a proposed consent decree filed with the District Court that established a promulgation date of June 1992 (EDF v. Reilly, Civ. No. 89-0598, D.D.C.). EPA is also finalizing revised treatment standards for debris contaminated with listed hazardous waste or debris that exhibits certain hazardous waste characteristics (hereinafter referred to as hazardous debris), and several revisions to previously promulgated standards and requirements. These actions are being taken as part of the RCRA Reform Initiative, and are expected to facilitate implementation of the LDR program.

EFFECTIVE DATES: This final rule is effective on June 30, 1992, except for Secs. 148.17(a), 260.10, 261.3(c)(2)(ii)(C), 268.2, 268.5, 268.7, 268.9, 268.36(a), 268.40, 268.41, 268.42, 268.43, 268.45, 268.46, 268.50, 270.14, 270.42, 270.72, and 271.1, which are effective November 16, 1992; and Secs. 262.34, 264.110, 264.111, 264.112, 264.140, 264.142, part 264 subpart DD, 265.110, 265.111, 265.112, 265.140, 265.142, 265.221, and part 265 subpart DD, which are effective February 18, 1993.

ADDRESSES: The official record for this rulemaking is identified as Docket Number F-92-CD2F-FFFFF, and is located in the EPA RCRA Docket, room 2427, 401 M Street SW., Washington, DC 20460. The docket is open from 9 a.m. to 4 p.m., Monday through Friday, except on Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. A maximum of 100 pages from the docket may be copied at no cost. Additional copies cost $.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424-9346 (toll free) or (703) 920-9810 locally. For information on treatment standards for newly listed wastes or hazardous debris, contact the Waste Treatment Branch, Office of Solid Waste (OS-322W), U.S. Environmental Protection Agency, 401 M St., SW., Washington, DC 20460, (703) 308-8434. For information on capacity determinations or national capacity variances, contact the Capacity Programs Branch, Office of Solid Waste (OS-321W), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (703) 308-8440.

SUPPLEMENTARY INFORMATION:

Outline

I. Background

A. Summary of the Hazardous and Solid Waste Amendments of 1984

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, allow hazardous wastes to be land disposed only if they satisfy either of two conditions: (1) They can either be treated, or otherwise satisfy, the requirement of section 3004(m), which provision requires EPA to set levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized; or (2) they can be land disposed in units satisfying the so-called no-migration standard in sections 3004 (d)(1), (e)(1), and (g)(5). Land disposal includes any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave. RCRA section 3004(k).

EPA was required to promulgate land disposal prohibitions and treatment standards by May 8, 1990 for all wastes that were either listed or identified as hazardous at the time of the 1984 amendments, a task EPA completed within the statutory timeframes. RCRA section 3004 (d), (e), and (g). EPA is also required to promulgate prohibitions and treatment standards for wastes identified or listed after the date of the 1984 amendments (wastes referred to in this notice as "newly listed and identified wastes") within six months after the listing or identification takes effect. RCRA section 3004(g)(4).

EPA has filed with the District Court a proposed consent decree that would put the Agency on a schedule for adopting prohibitions and treatment standards for newly identified and listed wastes. The promulgation date for

the newly identified and listed wastes dealt with in this rule is set for June 1992. (EDT v. Reilly, Civ. No. 89-0598, D.D.C.)

The land disposal restrictions are effective upon promulgation. RCRA section 3004(h)(1). However, the Administrator may grant a national capacity variance from the effective date and establish a later effective date (not to exceed two years) based on the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available. RCRA section 3004(h)(2). The Administrator may also grant a case-by-case extension of the effective date for up to one year, renewable once for up to one additional year, when an applicant(s) successfully makes certain demonstrations. RCRA section 3004(h)(3). See 55 FR 22526 (June 1, 1990) for a more detailed discussion on national capacity variances and case-by-case extensions.

In addition to prohibiting land disposal of hazardous wastes, Congress prohibited storage of any waste which is prohibited from land disposal unless such storage is solely for the purpose of the accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal. RCRA section 3004(j). The provision applies, of course, only to storage which is not also defined as land disposal in section 3004(k).

B. Pollution Prevention (Waste Minimization) Benefits

EPA's progress over the years in improving environmental quality through its media-specific pollution control programs has been substantial. Over the past two decades, standard industrial practice for pollution control concentrated to a large extent on "end-of-pipe" treatment or land disposal of hazardous and nonhazardous wastes. EPA believes that reducing or eliminating discharges and/or emissions to the environment through the implementation of environmentally sound recycling and source reduction practices sometimes offer more cost effective ways of achieving environmental goals.

The Agency has identified a number of waste streams where environmentally sound recycling has been identified as BDAT. For example, we are promulgating today in section IV.C alternate treatment standards for electroplating sludges (F006) and spent pickle liquor (K062), based on high temperature metals recovery (HTMR). The Agency has determined that many of these wastes have sufficient concentrations of metals (nickel and chromium), with low concentrations of interfering chemicals, to be amenable for recovery in HTMR units. Moreover, the Agency is granting a generic exclusion for F006 and K062 HTMR nonwastewater residuals, provided that these residuals meet designated concentration levels, are disposed of in Subtitle D units, and exhibit no characteristics of hazardous waste. (This exclusion is similar to the one that was promulgated on August 8, 1991 for K061. See 56 FR 41164, August 19, 1991.) The Agency expects that these provisions will encourage more generators to choose treatment technologies for their wastes which also recover some materials for reuse. In addition, treatment standards for the newly listed petroleum refining wastes (F037 and F038) are based on some recovery technologies (critical fluid extraction and thermal desorption), as well as on incineration.

II. Summary of Final Rule

Today's final rule is the first rulemaking adopting treatment standards

for newly identified and listed wastes as outlined in the consent decree described above.

Before discussing the final rule, EPA notes that certain aspects of the rule could be affected by the recently proposed rule (57 FR 21450, May 20, 1992) dealing with the question of when wastes are hazardous, concentration levels and circumstances when wastes are not hazardous, as well as circumstances when land disposal prohibitions might and might not apply. At present, however, the mixture and derived from rules remain in effect (57 FR 7628, March 3, 1992), and so apply to the rule adopted today. In addition, as explained in more detail later in the preamble, the Agency is codifying the so-called contained-in policy with respect to contaminated debris, and the preamble likewise explains how and when debris can be a hazardous waste based on application of this principle.

A. Newly Listed Wastes

EPA has promulgated a number of hazardous waste listings since enactment of HSWA in 1984. Section III of today's rule describes the treatment and/or recycling technologies that have been identified as BDAT for 20 of these listings and finalizes LDR treatment standards based on BDAT. Wastes included in today's rule include petroleum refining wastes (F037 and F038), wastes from the production of unsymmetrical dimethylhydrazine (K107-K110), wastes from the production of dinitrotoluene and toluenediamine (K111 and K112), wastes from the production of ethylene dibromide (K117, K118, and K136), wastes from the production of ethylenebisdithiocarbamic acid (K123-K126), wastes from the production of methyl bromide (K131 and K132), and several organic U wastes (U328, U353, and U359). Future proposals will include newly listed wastes not covered in today's rule. Soil contaminated with the newly listed wastes for which standards are finalized today will be addressed in a future proposal.

B. Changes to Current Regulations

The Agency is finalizing revisions to the existing treatment standards for organic constituents in F001-F005 wastes, involving conversion from TCLP standards to standards based on total concentrations. In addition, the Agency is finalizing the conversion of wastewater standards for 24 F and K waste codes based on wastewater treatment data for the constituents of concern.

EPA is also finalizing alternate treatment standards for F006 and K062, and is also extending the K061 generic exclusion published on August 19, 1991 (56 FR 41164) to certain F006 and K062 wastes. The generic exclusion levels have been slightly revised to reflect a somewhat different fate and transport model, the EPA Composite Model for Landfills (EPA CML).

EPA is also revising the notification and certification for prohibited characteristic wastes and clarifying existing rules regarding the status under part 268 of wastes listed solely because they exhibit a characteristic.

Finally, EPA is establishing a new waste management unit known as a containment building. EPA is indicating that containment buildings are not land disposal units, so that hazardous wastes may be managed in such units without first meeting treatment standards.

C. Hazardous Debris

Debris contaminated with listed prohibited wastes is already subject to the LDR treatment standards for those wastes, as is debris exhibiting a hazardous waste characteristic for which EPA has promulgated treatment standards.

Today, the Agency is revising the treatment standards for such debris. The Agency is also finalizing treatment standards for debris that is contaminated with those newly listed wastes for which standards are promulgated in this rule. This rule does not identify or list any debris as hazardous, and so does not bring any additional debris into the subtitle C management system.

Only hazardous debris that is currently subject to subtitle C standards is covered by today's rule. The Agency is requiring hazardous debris to be treated prior to land disposal, using specific technologies from one or more of the following families of debris treatment technologies: Extraction, destruction, or immobilization. In the alternative, hazardous debris may continue to be handled in accordance with the Agency's contained-in policy, and so may be land disposed if it no longer "contains" a hazardous waste.

To ensure effective treatment of debris (i.e., treatment sufficient to constitute BDAT), treatment must be performed in accordance with specified performance standards (see new Table 1 in today's rule). The consequence of performing this treatment would be two-fold. Not only would the debris no longer be prohibited from land disposal, but EPA would consider the treated debris to no longer be or contain a hazardous waste provided a destruction or extraction technology is used for all debris types/contaminant combinations and provided that the treated debris does not exhibit any characteristic of hazardous waste. Such treated debris could, therefore, be reused, returned to the natural environment, or disposed of in a subtitle D facility.

Residuals generated from the treatment of debris contaminated with listed wastes would still be hazardous wastes by virtue of the derived-from rule and would be subject to the hazardous waste management system. The Agency is today requiring that residuals generated from the treatment of hazardous debris be subject to the numerical treatment standards for the wastes contaminating the debris. A detailed discussion is provided in section V.G.

Finally, the Agency considered and rejected proposing numerical standards for hazardous debris because of the difficulty of sampling hazardous debris.

However, based on numerous comments to the proposed rule, EPA is allowing people the option of treating debris to meet the existing treatment standards. Such debris would remain hazardous waste under the derived-from rule, unless delisted.

III. Detailed Discussion of Final Rule: Newly Listed Wastes

Since the enactment of HSWA in 1984, EPA has promulgated a number of hazardous waste listings under 40 CFR part 261 subpart D and has expanded the number of wastes covered under 40 CFR part 261 subpart C. This section of today's rule describes the treatment and/or recycling technologies that

have been identified as BDAT for 20 of these "newly listed" wastes. The Agency is finalizing treatment standards under 40 CFR 268.41, .42, and .43 for these wastes based on the transfer of performance data from treating other hazardous wastes that have been determined to be similar or more difficult to treat than these wastes.

This section does not, however, finalize treatment standards for the following newly identified or listed hazardous wastes: Those recently identified under the TC rule (D018-D043); characteristic wastes generated by mineral processing activities; spent potliners from aluminum manufacturing (K088); and listed wastes from wood preserving (F032, F034, and F035). These wastes, as well as wastes from coking operations and chlorotoluene production, will be addressed in subsequent Federal Register notices.

Before discussing these new treatment standards, the Agency wishes to clarify one point as to its methodology in establishing treatment standards.

The Agency has explained in a number of past preambles that it accounts for treatment process variability in establishing treatment standards, and does so by applying a statistically derived variability factor to the mean concentration of constituent concentrations in treatment residues from the model BDAT technologies (see 55 FR 22539 as an example). This variability factor, EPA has explained, is derived through a quantitative procedure that determines the statistical 99th percentile for the treatment standard.

Some commenters have inferred from this explanation that the treatment standards can only be achieved 99 percent of the time even by properly operated treatment units. This is an incorrect inference, although EPA acknowledges that some of its preamble language has promoted this reading. In fact, EPA expects the treatment standards to be achievable 100 percent of the time by properly operating facilities. Data points above the 99th percentile of the statistical model would in fact represent extreme departures from the mean and almost certainly reflect quality control problems in operation of the treatment technology. All of the data used in establishing treatment standards are actually much lower than 99th percentile values, as well as values in excess of that 99th percentile. (In addition, as EPA has already explained, for standards based on combustion technology, the technology routinely reduces waste concentrations to lower than detection values, yet the treatment standards nevertheless apply a variability factor to a numerical detection limit, resulting in treatment standards that are "greater than the achievable levels (which are at or below the detection limits) and should be easily met by a well-designed, well-operated incineration system."

A. Recent Petroleum Refining Wastes (F037 and F038)

F037--Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: Oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in storm water units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in 40 CFR Sec. 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in

aggressive biological treatment units) and K051 wastes are not included in this listing

F038--Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: Induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in storm water units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in Sec. 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing

F037 and F038 are hazardous wastes generated by facilities in the petroleum refining industry. Detailed technical descriptions of the specific processes or operations that generate these two wastes can be found in 45 FR 74884, May 19, 1980; 55 FR 46354, November 2, 1990; 56 FR 21955, May 13, 1991; and the associated listing background document.

EPA is today promulgating treatment standards for F037 and F038; these standards are the same as those proposed on January 9, 1992 (57 FR 958). (The specific regulated constituents and treatment standards for these wastes are listed in the tables at the end of this section). Since EPA is promulgating concentration levels as the treatment standards for wastewater and nonwastewater forms of F037 and F038, any treatment technology capable of reaching the treatment standards can be used except for impermissible dilution.

EPA's rationale and technical details for promulgating today's treatment standards can be found later in this section of the preamble and in the Final BDAT Background Document for F037 and F038. However, in summary, commenters to the January 9, 1992, proposal generally concurred with EPA's assertion that F037 and F038 have similar treatment characteristics to those of K051 and K048 (as well as other petroleum wastes). Most commenters also supported the transfer of available K048-K052 performance data from K048 to F038 and from K051 and K049 to F037. In fact, new data submitted to EPA in response to the May 30, 1991, Advance Notice of Proposed Rulemaking (ANPRM) and the January 9, 1992, proposal corroborates EPA's transferring of existing K048- K052 performance data to F037 and F038. These new data show that there are other technologies in addition to incineration and solvent extraction that are capable of achieving the treatment standards for the regulated constituents of concern in petroleum wastes believed as difficult to treat as F037 and F038.

The majority of commenters also supported EPA's proposal for regulating the same constituents in F037 and F038 that are regulated in K051 and K048. These commenters agreed with EPA that adoption of the proposal should reduce the administrative requirements and compliance efforts required for the petroleum wastes.

1. Regulated Constituents

EPA proposed regulating up to 18 BDAT List hazardous constituents that are

known to be present in wastewater or non-wastewater forms of F037 or F038 as well as additional hazardous constituents likely to be present in F037 and F038 because they are known to be present in K048 and K051. (See discussion in January 9, 1992, proposed rule, 57 FR 962.)

One commenter who generates petroleum wastes such as API and DAF sludges, submitted data characterizing "four K sludges and five potential refinery F waste sludges from five surface impoundments." The commenter believes that these data do not support the inclusion of most of the constituents of concern associated with the LDRs.

EPA is not persuaded to change its proposed approach. The fact that the commenter's presumably untreated K or F sludges do not show certain constituents at or above detection levels should not be construed as an indication that those undetected constituents were absent. EPA's treatment studies on petroleum wastes have shown, in fact, that it is not unusual for hazardous constituents to go undetected in untreated wastes due to analytic matrix interferences and, later on, be measured in the treated wastes when the interferences are removed by treatment. In addition, several members of the regulated community responding to the ANPRM of May 30, 1991, commented that F037 and F038 wastes are likely to show variabilities in chemical and physical composition and in the treatment characteristics for the same K or F wastes from one refinery to another.

EPA is therefore promulgating treatment standards for all those constituents proposed for regulation. Regulating the same constituents present in K048 and K051 should reduce the administrative requirements and compliance efforts for all of these petroleum wastes. (See Response to Technical Comments Background Document for additional discussion.)

2. Treatment Standards for Wastewaters

EPA proposed to transfer the treatment standards for organics in wastewater forms of F037 and F038 from the F039 wastewater treatment standards (multi- source leachate). These F039 wastewater treatment standards were also proposed as a revision to K048 and K051. All commenters supported this proposal. As a result, EPA is promulgating these wastewater treatment standards for F037 and F038.

For metals in wastewater forms of F037 and F038, the treatment standards are based on chromium reduction followed by lime and sulfide precipitation and vacuum filtration. For cyanides in wastewater forms of F037 and F038, the treatment standards are based on incineration. Levels of cyanide were measured, in fact, in K048 incineration scrubber waters. EPA does not expect any constituents in F037 and F038 to interfere or behave differently from those constituents in K048-K052 or from the other wastes from which performance data were transferred.

3. Treatment Standards for Nonwastewaters

EPA is promulgating the treatment standards for F037 and F038 nonwastewaters that were proposed. In particular, the treatment standards proposed for the metals in nonwastewater forms of F037 and F038 were based on stablization of K048-K052 solvent extraction residuals; thus, these standards are set as concentrations measured in waste extracts (as measured by the TCLP). Similarly, EPA proposed for cyanide in nonwastewater forms of F037 and F038 treatment standards based on incineration of K048 and K051. Owing to the similarities in waste composition of F037 and F038 to

K048-K052, stabilization is considered BDAT for the metals in F037 and F038 nonwastewaters and incineration is considered BDAT for cyanide in F037 and F038 nonwastewaters.

The proposed treatment standards for the organics in nonwastewater forms of F037 and F038 were based on the incineration and solvent extraction of K048- K052. Owing to the similarities in waste composition of F037 and F038 to K048-K052, EPA has determined that incineration and solvent extraction are also BDAT for F037 and F038. The majority of the commenters supported this determination by EPA. In doing so, EPA is applying the same approach as used to develop treatment standards for the K048-K052 wastes in the Third Third rule. In essence, allowing somewhat more lenient treatment standards than those based on performance of incineration alone, which standards nevertheless result in substantial reductions in waste toxicity and also allow for hydrocarbon recovery, furthering statutory resource recovery objectives.

EPA's modified methodology of June 1, 1990, incorporates protocols that take into account several concerns that were expressed by members of the regulated community and hazardous waste treatment industry at that time with regard to the use and the applicability of hydrocarbon recovery technologies for the whole spectrum of petroleum refining wastes. EPA also adopted the modified statistical analysis for determining which technology performs best so as not to preclude the use of one or more hydrocarbon recovery technologies that can significantly reduce levels of toxic organics in these wastes, and also recover some of the wastes' hydrocarbon values.

After evaluating comments on the Third Third proposal, EPA determined that it was appropriate to promulgate treatment standards based on both incineration and hydrocarbon recovery technologies. EPA concluded further that although treatment standards based on solvent extraction may be somewhat higher (i.e., less stringent) than those based on incineration, solvent extraction was still providing substantial treatment to the organics of concern. In addition, EPA determined that solvent extraction provided the benefit of recovering valuable oil, and this benefit could also be provided by other available hydrocarbon recovery technologies such as thermal distillation. (See 55 FR 22596, June 1, 1990). This same reasoning applies to the F037/F038 wastes that are the subject of today's rule.

4. Response to Major Comments

The Agency is responding in this preamble to a number of the major comments received in response to the January 9, 1992, proposal. The major issues raised and addressed in this section are:

** Grab versus Composite Samples.

** Must the Treatment Standards for Nonwastewater Organics be More Stringent?

Other comments received by the Agency, including the review of new performance data, are addressed by the Agency in the Response to Technical Comments Background Document that is available in the docket associated with this rulemaking.

a. Grab versus Composite Samples. The American Petroleum Institute (API)

and the National Petroleum Refiners Association (NPRA) are both trade associations that represent most members of the petroleum refining regulated community. API and NPRA support EPA's proposed treatment standards for the organics in wastewater forms of F037 and F038. Since the majority of the treatment performance data are based on composite samples from wastewater treatment processes, API and NPRA urged the Agency to enforce the applicable treatment standards for wastewater forms based on composite samples and not on grab samples.

EPA in fact, enforces treatment standards based on the sampling analysis protocol used (i.e., grab or composite) to support promulgation of the standard, Secs. 268.41(a), 268.43(a). EPA's proposal mistakenly stated in the preamble tables that enforcement of these wastewater treatment standards would be based solely on grab samples for all the regulated constituents. EPA is correcting this error in the final rule. (See 268.41 and 268.43).

b. Should the Treatment Standards for Nonwastewater Organics be More Stringent? TDI Thermal Dynamics (formerly Southdown Thermal Dynamics) resubmitted comments on a thermal process that enables the recovery of valuable organics from petroleum wastes while reducing the volume of wastes needing land disposal. TDI's data are based on the treatment of K048, K049, and K051 by a thermal distillation patented process referred to by the commenter as "HT-5 Process." TDI's data show that all the proposed organic treatment standards can be achieved, indeed, potentially surpassed, through use of this technology.

Another treatment company, Retec, also submitted comments in support of the proposed treatment standards. Retec's comments include performance data from an "8,000 gallon prototype unit" and some "field data" that have treated sludges of K048, K050, K051, F037, and F038 by biological treatment. Retec refers to its biological treatment process as the "bioslurry process." These data show that most of the constituents of concern can be treated to achieve (or, in some cases, surpass) the treatment standards.

The two commenters' ultimate point is that their technologies remove more toxics than the proposed levels and should therefore be the basis for the promulgated standards.

Comments submitted by TDI and the Natural Resources Defense Council (NRDC) also state that EPA's proposed F037 and F038 treatment standards are not protective of human health and the environment and so do not satisfy the RCRA section 3004(m) criteria requiring substantial reduction in the toxicity of the waste so that threats to human health and the environment are minimized.

TDI believes, in fact, that their "HT-5 Process", the CF Systems' five-path process, and fluidized incineration meet the 3004(m) criteria and that data from these three processes should support promulgation of more stringent standards. TDI and NRDC also urged EPA to promulgate treatment standards that are pursuant to EPA's protocols to establish "best" treatment and that conform to Congressional intent in section 3004(m).

EPA has reviewed comments from TDI and NRDC. Based on this review, EPA is not persuaded to promulgate more stringent standards. EPA also believes (contrary to TDI's and NRDC's positions) that today's promulgated treatment standards provide substantial treatment of F037 and F038 wastes.

First, EPA is not persuaded by NRDC's comments that, by setting treatment standards for F037 and F038 based on "less effective treatment technologies such as incineration (and solvent extraction), (EPA) may diminish the market and the availability of HT-5 for mixed wastes." Even if this were a relevant consideration, which it most likely is not, today's promulgated treatment standards are expressed as a concentration-based level for all of the (organic) constituents regulated in nonwastewater forms of F037 and F038. EPA has clearly emphasized that today's standards do not preclude the use of other treatment or recovery technologies.

The actual issue is whether the statute requires that technology-based treatment standards be optimized, i.e., be technology-forcing, in all cases (always assuming that the jurisdictional minimize threat level is not yet reached), or whether treatment that results in substantial reduction of waste toxicity is sufficient.

Technology-based treatment standards are permissible as a means of achieving the statutory objective of treatment that minimizes threats given the current uncertainty in determining what that level is (see 55 FR 6641, February 26, 1990) and HWTC v. EPA, 886 F. 2d 355, 362 (D.C. Cir. 1989).
(However, technology standards are not the only means to achieve the statutory objectives. For example, the Agency recently proposed concentration levels that could serve as "minimize threat levels", which could require modification of a purely technology-based approach to establishing treatment standards (57 FR 21450, May 20, 1992.)) However, these technology-based standards need not be technology forcing. Rather, the Agency has stated that treatment standards are to be based on the use of available technologies that are capable of substantially reducing the threats that the wastes may pose when they are land disposed (55 FR 6641).

The legislative history confirms that Congress did not necessarily envision section 3004(m) treatment standards to be technology-forcing, such as these the commenters advocate. Rather, such standards were intended to require the use of generally available effective types of treatment (see 125 Cong. Rec.
S9178, July 25, 1984, statement of Senator Chaffee introducing the amendment that became section 3004 (m)):

The requisite levels (or) methods of treatment established by the Agency should be the best that has (sic) been demonstrated to be available. This does not require a BAT-type process as under the Clean Air or Clean Water Acts which contemplates technology-forcing standards. The intent here is to require utilization of available technologies in lieu of continued land disposal without prior treatment. (Congressional Record of July 25, 1984, S9178).

Thus, standards based on use of "best" treatment technologies need not be limited to optimally performing treatment (as under the Clean Water Act), but include available types of treatment that substantially reduce wastes' toxicity and short-term and long-term threats the wastes could pose when land disposed.

In light of this legislative intent, and the fact that BDAT for F037 and F038 wastes is based on the performance of two commercially available treatment technologies that provide substantial treatment to petroleum wastes that are as difficult to treat as F037 and F038, EPA believes that

the BDAT Methodology adopted in this rulemaking is justified and allowed under 3004(m). Detailed discussions of EPA's data analysis and rationale can be further found in the Final BDAT Background Document for F037 and F038.

TDI also argued that EPA's approach is inconsistent with the Agency's own promulgated methodology for establishing treatment standards. To some extent, this argument reprises the point just addressed. (For example, the commenter's point that use of Analysis of Variability protocols show that performance of its technology to be superior really raises the further question of whether treatment standards must therefore be based on performance of that technology). In any case, EPA used the same revised methodology it adopted in developing the treatment standards for K048-K052 wastes in the Third Third rule.

TDI submitted comments regarding EPA's Methodology and Protocols for Developing BDAT Treatment Standards for F037/F038 wastes. TDI disputes EPA's evaluation of their performance data and, in particular, EPA's determination of the proposed treatment standards for organics in nonwastewater forms of F037 and F038. TDI submitted a report entitled Analysis of U.S. EPA's Proposed Land Disposal Restrictions for F037 and F038 Newly Listed Petroleum Refining Wastes. On the basis of this report, TDI believes EPA has violated its own "standard protocol procedures", and, after reanalyzing all the performance data, TDI urged EPA to withdraw the proposed treatment standards.
TDI's comments (and TDI's technical report) seem to indicate that TDI analyzed the F037 and F038 proposal's performance data based on EPA's protocols and statistical procedures found in the Final Best Demonstrated Available Technology (BDAT) Background Document for Quality Assurance/Quality Control Procedures and Methodology of October 23, 1991. TDI reviewed the available performance data based on analyses and methodologies that EPA employs when developing treatment standards that are based on destruction or immobilization treatment technologies.

However, the QA/QC document clearly states that when EPA identifies the potential for developing treatment standards based on recovery or recycling technologies, EPA may choose to modify its methodology in developing BDAT treatment standards (EPA also used modified methodologies in the promulgation of amended organic treatment standards for K048-K052, in the Third Third final rule, and the recent final rule for K061, High Zinc Subcategory nonwastewaters. A brief description of each of EPA's modified approaches is presented in the October 23, 1991, document (see pp. 3-12--3-17, of the October 23, 1991, Quality Assurance/Quality Control Document)). This is exactly what EPA is doing here; see the Proposed BDAT Background Document for F037 and F038 for the explanation.

BDAT Treatment Standards for F037
(Nonwastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/kg)
Anthracene	28
Benzene	14
Benzo(a)anthracene	20
Benzo(a)pyrene	12
Bis(2-ethylhexyl)phthalate	7.3
Chrysene	15
Di-n-butyl phthalate	3.6
Ethylbenzene	14

Naphthalene 42
Phenanthrene 34
Phenol 3.6
Pyrene 36
Toluene 14
Xylenes (total) 22
Cyanides (total) 1.8

Regulated constituent Maximum for any single grab sample--TCLP (mg/l)

Chromium (total) 1.7
Nickel 0.20

BDAT Treatment Standards for F037
(Wastewaters)

Line No.	Regulated constituent
1.	Acenaphthene
2.	Anthracene
3.	Benzene
4.	Benzo(a)anthracene
5.	Benzo(a)pyrene
6.	Bis(2-ethylhexyl)phthalate
7.	Chrysene
8.	Di-n-butyl phthalate
9.	Ethylbenzene
10.	Fluorene
11.	Naphthalene
12.	Phenanthrene
13.	Phenol
14.	Pyrene
15.	Toluene
16.	Xylenes (total)
17.	Regulated constituent
18.	Cyanides (total)
19.	Chromium (total)
20.	Lead

(...Table continues...)

Line No.	Maximum for any 24 composite sample--Total composition (mg/l)
1.	0.059
2.	0.059
3.	0.14
4.	0.059
5.	0.061
6.	0.28
7.	0.059
8.	0.057
9.	0.057
10.	0.059
11.	0.059
12.	0.059
13.	0.039
14.	0.067
15.	0.080
16.	0.32

17. Maximum for any single grab sample--Total composition (mg/l)

18. 0.028
19. 0.20
20. 0.037

BDAT Treatment Standards for F038
(Nonwastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/kg)
Benzene	14
Benzo(a)pyrene	12
Bis(2-ethylhexyl)phthalate	7.3
Chrysene	15
Di-n-butyl phthalate	3.6
Ethylbenzene	14
Naphthalene	42
Phenanthrene	34
Phenol	3.6
Pyrene	36
Toluene	14
Xylenes (total)	22
Cyanide (total)	1.8

Regulated constituent	Maximum for any single grab sample--TCLP (mg/l)
Chromium (total)	1.7
Nickel	0.20

BDAT Treatment Standards for F038
(Wastewaters)

Line No.	Regulated constituent
1.	Benzene
2.	Benzo(a)pyrene
3.	Bis(2-ethylhexyl)phthalate
4.	Chrysene
5.	Di-n-butyl phthalate
6.	Ethylbenzene
7.	Fluorene
8.	Naphthalene
9.	Phenanthrene
10.	Phenol
11.	Pyrene
12.	Toluene
13.	Xylenes (total)
14.	Regulated constituent
15.	Cyanides (total)
16.	Chromium (total)
17.	Lead

(...Table continues...)

Line No.	Maximum for any 24 composite sample--Total composition (mg/l)
1.	0.14
2.	0.061
3.	0.28
4.	0.059
5.	0.057

6. 0.057
7. 0.059
8. 0.059
9. 0.059
10. 0.039
11. 0.067
12. 0.080
13. 0.32

14. Maximum for any single grab sample--Total composition (mg/l)

15. 0.028
16. 0.20
17. 0.037

B. Wastes from the Production of Unsymmetrical

Dimethylhydrazine (K107, K108, K109, and K110)
K107--Column bottoms from product separation from the production of 1,1-dimethylhydrazine from carboxylic acid hydrazides
K108--Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazides from carboxylic acid hydrazine
K109--Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazides from carboxylic acid intermediates
K110--Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine from carboxylic acid hydrazide intermediates

EPA proposed on January 9, 1992 (57 FR 965) to establish treatment standards for these wastes expressed as required methods of treatment. As was discussed in the preamble to the proposed rule, these wastes are being regulated despite the fact that EPA is not aware of facilities generating them. For nonwastewater forms of these wastes, the required method of treatment was incineration. For wastewater forms, the required methods of treatment were incineration or, alternatively, chemical oxidation followed by carbon adsorption. The basis for expressing the proposed treatment standards as required methods of treatment was that these wastes are relatively unstable in water resulting in difficulties in accurate quantification in treatment residues. (See 57 FR 965.)
The wastewater standards promulgated today for these wastes differ from the proposed standards in that EPA is adding biodegradation followed by carbon adsorption, (BIODEG fb CARBN) to the methods designated as method-of- treatment standards for K107-K110 wastewaters in tables 1 and 2 of 40 CFR 268.42. The Agency is adding this standard to be consistent with other sections of this rulemaking, where in response to comments supporting the use of biodegradation as an alternative method of treatment, the Agency is promulgating biological treatment as equivalent to chemical oxidation. The Agency is including biodegradation plus carbon adsorption for these hydrazine wastes based on hydrolysis data indicating that hydrazines break down rapidly in water.

The definition of BIODEG as a technology-based standard for listed wastewaters calls for operating the unit such that "a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals." EPA believes that this provision allows permitting and compliance authorities enough control over the BIODEG unit so that

biodegradation can be designated BDAT for these wastes, which are known to hydrolyze rapidly to compounds amenable to biological degradation.

EPA received no comments on its proposed treatment standards for the nonwastewater forms of these wastes. Therefore, the Agency is promulgating the treatment standards for K107-K110 nonwastewaters as proposed: incineration (INCIN) as a method of treatment.

C. 2-Ethoxyethanol Wastes (U359)

EPA is promulgating methods of treatment for 2-ethoxyethanol wastes (U359), whose generation and characteristics are described in the proposed rule preamble (57 FR 968). The promulgated standards differ somewhat from the proposed standards; first, EPA is adding biodegradation followed by carbon adsorption, (BIODEG fb CARBN) to the methods designated as method-of- treatment standards for U359 wastewaters in Tables 1 and 2 of 40 CFR 268.42.

The proposed wastewater treatment standard was incineration or chemical oxidation followed by biological treatment or carbon adsorption. Second, EPA is promulgating also fuel substitution (FSUBS) as an alternative standard to incineration (INCIN) for U359 nonwastewaters. (See 57 FR 969.)

EPA had proposed methods-of-treatment as standards, rather than concentration-based numerical standards, because this waste is relatively unstable in water, resulting in difficulties in accurate quantification in treatment residuals. Several commenters, however, requested that the Agency set concentration-based standards for 2-ethoxyethanol wastes and suggested several innovative analytical methods to quantify 2-ethoxyethanol. EPA acknowledges that 2-ethoxyethanol can be quantified by direct injection methods (i.e. those not requiring a purge step in the analytical procedure).

EPA is, nevertheless, promulgating methods of treatment as standards because EPA has only limited treatability data for 2-ethoxyethanol to serve as a basis for calculating numerical treatment standards. EPA's decision to change the wastewater standards to include biodegradation followed by activated carbon adsorption is consistent with the revision in this rule of the K107- Kl10 wastewater standards allowing BIODEG as a method-of-treatment based on the waste components' extreme instability in water.

The definition of BIODEG as a technology-based standard for listed wastewaters calls for operating the unit such that "a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals." EPA believes that this provision allows permitting and compliance authorities adequate control over the BIODEG unit so that biodegradation can be designated BDAT for these wastes since 2-ethoxyethanol is known to hydrolyze rapidly to ethanol, which is known to be amenable to biological treatment.

EPA is promulgating incineration (INCIN) as a method-of-treatment standard for U359 nonwastewaters as proposed, but is also including fuel substitution (FSUBS) as an alternative. EPA is adding FSUBS because 2-ethoxyethanol is a readily oxidizable carbon, hydrogen, and oxygen compound that will not release undesirable combustion products such as halogen acids, nitrogen, or sulfur dioxides.

D. Wastes From the Production of Dinitrotoluene and Toluenediamine (K111

and K112, U328 and U353)

K111--Product wash waters from the production of dinitrotoluene via nitration of toluene
K112--Reaction byproducts from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene
U328--Ortho-toluidine
U353--Para-toluidine

EPA proposed on January 9, 1992, to establish treatment standards for these wastes expressed as required methods of treatment. The proposed rule discussed the generation and characteristics of these wastes in greater detail (57 FR 965). For nonwastewater forms of these wastes, the required method of treatment was incineration. For wastewater forms, the required methods of treatment were incineration or, alternatively, chemical oxidation followed by carbon adsorption. The basis for expressing the proposed treatment standards as required methods of treatment was that many constituents of these wastes are relatively unstable in water resulting in difficulties in accurate quantification in treatment residues. (See 57 FR 965)
The Agency is finalizing the proposed standards with two substantive changes for K111, K112, U328, and U353: First, EPA is replacing the proposed methods-of-treatment standards for K111 wastewaters and nonwastewaters with concentration-based standards numerically equal to the F039 standards for 2,4-dinitrotoluene and 2,6-dinitrotoluene. Second, EPA is adding biodegradation followed by carbon adsorption (BIODEG fb CARBN) to the methods of treatment specified as treatment standards for K112, U328, and U353 wastewaters in Tables 1 and 2 of 40 CFR 268.42.

In particular, data from one commenter indicated that the concentrations of 2,4-dinitrotoluene and 2,6-dinitrotoluene in K111 wastewaters and nonwastewaters are sufficiently high such that treating the K111 wastes to the F039 treatment standards for these constituents should be an acceptable surrogate to ensure that the other constituents are treated to acceptably low levels.

The other constituents include nitrocresols, nitrophenols, and nitrobenzoic acid; since reliable analytical methods are not available to quantify these constituents in waste matrices, the Agency will not set concentration-based treatment standards for them. By setting concentration-based standards for the quantifiable components of K111 wastewaters and nonwastewaters, EPA is allowing the use of any treatment system (other than impermissible dilution) that meet these numbers for the dinitrotoluenes.

Data from this same commenter also indicated that biological treatment can achieve significant reductions in the concentration of toluenediamines in K112 wastewater streams. Based on the commenter's data demonstrating substantial reductions in K112 wastewater toluenediamine concentrations in the course of biological treatment, EPA is adding biodegradation (BIODEG) to the set of methods-of-treatment designated as treatment standards for K112 wastewaters.

EPA believes, in addition, that o-toluidine and p-toluidine, the listing components of U328 and U359, are sufficiently chemically similar to toluenediamines that the treatment standards for K112 should also apply to U328 and U359 wastes. EPA is, therefore, including BIODEG among the

methods- of-treatment standards promulgated for U328 and U359 wastewaters.

The definition of BIODEG as a technology-based standard for listed wastewaters calls for operating the unit such that "a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals." EPA believes that this provision allows permitting and compliance authorities adequate control over the BIODEG unit so that biodegradation can be designated BDAT for these wastes, which have been documented to amenable to biological treatment.

EPA is promulgating treatment standards for K112, U328 and U359 nonwastewaters as proposed: incineration (INCIN) as a method of treatment.

BDAT Treatment Standards for K111
(Nonwastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/kg)
2,4-Dinitrotoluene	140
2,6-Dinitrotoluene	28

BDAT Treatment Standards for K111
(Wastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/l)
2,4-Dinitrotoluene	0.32
2,6-Dinitrotoluene	0.55

E. Wastes From the Production of Ethylene Dibromide (K117, K118 and K136) and Wastes From the Production of Methyl Bromide (K131 and K132)

K117--Wastewater production from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethylene.

K118--Spent adsorbent solids from purification of ethylene dibromide via bromination of ethylene dibromide via bromination of ethylene.

K136--Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethylene.

K131--Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.

K132--Spent adsorbent and wastewater separator solids from the production of methyl bromide.

With one exception, today's rule promulgates the treatment standards for ethylene dibromide wastes (K117, Kl18 and K136) and methyl bromide wastes (K131 and K132) that the Agency proposed in the January 9, 1992 proposed rule, where it discussed the generation and characteristics of these wastes

(57 FR 966-967). These are concentration-based standards numerically equal to the FO39 standards for the constituents of these wastes; the BDAT Background Document for U and P Wastes and Multi-Source Leachate (F039) (volumes A and C) describes how each standard was calculated. The nonwastewater standards (volume C) are based on the results of a series of incineration tests performed by the Agency in the course of developing treatment standards for earlier land disposal restrictions rulemakings. The wastewater standards (volume A) are based on data collected by EPA's Office of Water and Office of Research and Development and reflect a variety of industrial wastewater technologies. Technologies used to develop the wastewater numbers promulgated here include steam stripping, activated sludge, and air stripping.

The one change that EPA is making is as follows: EPA proposed treatment standards for "1,1,2-tribromomethane" in the January 9, 1992, notice (57 FR 996 and 997). (This was a misprint for 1,1,2-tribromoethane, a constituent present in the ethylene dibromide process waste stream K118). At the time of the proposed rule, EPA was considering adding 1,1,2-tribromoethane to its BDAT List of constituents known to be amenable to quantification in waste matrices with existing SW-846 methods. EPA has since decided not to add 1,1,2-tribromoethane to the BDAT List and is consequently not promulgating treatment standards for this compound.

As a result of soliciting data on the proposed standards in the May 30, 1991, Advance Notice of Proposed Rulemaking and then in the January 9, 1992, Proposed Rule, EPA received comments from the two facilities believed to generate all of these waste streams. Both supported the use of steam stripping for treating brominated wastewaters. One of the two commenters submitted data characterizing the results of steam stripping groundwater that had become contaminated with ethylene dibromide and several other brominated and chlorinated compounds. Because these data did not clearly identify corresponding influent and effluent streams, they could not be used to evaluate the performance of the system in terms of contaminant removal.

This commenter also endorsed the incineration-based numerical treatment standards for nonwastewater forms of these wastes. A second commenter objected, however, to the incineration-based nonwastewater standards. In particular, the commenter claimed that bromine forms corrosive hydrogen bromide in incinerator combustion chambers. This commenter, the sole generator of K118, reported difficulties in incinerating a batch of K118 nonwastewater at a commercial facility and requested that EPA base all treatment standards for organobromine wastes on steam stripping.

The Agency acknowledges that there may be difficulties in incinerating brominated wastes (even though one commenter explicitly endorses incineration-based standards for K117, K118, K131, and K132 nonwastewaters).

In the absence of performance data on an alternative process for nonwastewaters, EPA is promulgating the incineration-based nonwastewater standards that were originally proposed. Steam stripping, and any other forms of waste treatment other than impermissible dilution, may also be used to achieve the numerical treatment standards regardless of which technology served as the basis of the standards. Furthermore, the regulated community has options, including applying for treatability or capacity variances, for overcoming technical difficulties in treating especially problematic batches of wastes.

BDAT Treatment Standards for K117, K118, and K136 (Nonwastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/kg)
Ethylene dibromide	15.0
Bromomethane	15.0
Chloroform	5.6

BDAT Treatment Standards for K117, K118, and K136 (Wastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/l)
Ethylene dibromide	0.028
Bromomethane	0.11
Chloroform	0.046

BDAT Treatment Standards for K131 and K132 (Nonwastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/kg)
Bromomethane (methyl bromide)	15

BDAT Treatment Standards for K131 and K132 (Wastewaters)

Regulated constituent	Maximum for any single grab sample--Total composition (mg/l)
Bromomethane (methyl bromide)	0.11

F. Wastes From the Production of Ethylenebisdithiocarbamic Acid (K123, K124, K125, and K126)

K123--Process wastewater (including supernatants, filtrates and wash waters) from the production of ethylenebisdithiocarbamic acid and its salts.

K124--Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.

K125--Purification solids (including filtration, evaporation and centrifugation solids) from the production of ethylenebisdithiocarbamic acid and its salts.

K126--Baghouse dust and floor sweepings in milling and packaging operations from the production of ethylenebisdithiocarbamic acid and its salts.

EPA is promulgating the treatment standards as proposed for ethylenebisdithiocarbamic acid wastes (EDBC) (K123-K126). The preamble in the proposed rule describes the generation and characteristics of these wastes in greater detail (57 FR 967). The Agency proposed incineration (INCIN) as a method of treatment as the treatment standard for K123-K126 nonwastewaters and incineration or chemical oxidation followed by biological treatment or carbon adsorption (INCIN or CHOXD) for K123-K126 wastewaters. EPA received no comments challenging these treatment standards.

Although EPA is expanding the set of methods of treatment as standards to include BIODEG by itself for the methyl hydrazine wastes K107-K110, the toluenediamine waste K112, the toluidine wastes U326 and U353, and 2-ethoxyethanol U359, EPA is not adding BIODEG alone to the set of methods of treatment for the EDBC wastewaters. For each of the cases where EPA is today adding BIODEG to the list of promulgated methods of treatment as standards, EPA has either treatability data documenting successful treatment of these wastes or their close analogues in a biological unit or data demonstrating that these wastes readily hydrolyze to simple, relatively nontoxic compounds known to be readily amenable to biological degradation. In the absence of any such data about EDBC waste amenability to hydrolysis or biodegradation, EPA chooses not to include BIODEG as a primary method of treatment for EDBC wastewaters.

IV. Detailed Discussion of Final Rule: Changes to Existing Regulations

A. Revisions to the F001-F005 Spent Solvents Treatment Standards

F001--The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of 10 percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005 and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F002--The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho- dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F003--The following spent nonhalogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl

alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent nonhalogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the-above nonhalogenated solvents, and a total of 10 percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F004--The following spent nonhalogenated solvents: Cresol and cresylic acid and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

F005--The following spent nonhalogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.

The Agency is promulgating revised treatment standards for solvent wastewaters of F001-F005 wastes as proposed in the January 9, 1992 notice (57 FR 969-971).

1. Regulatory Background

a. Listing Definitions. On May 19, 1980 (45 FR 33119), the Environmental Protection Agency (EPA) listed 26 commonly used organic solvents as hazardous wastes when spent or discarded. The solvents were listed as EPA Hazardous Waste Nos. F001, F002, F003, F004, and F005. These listed wastes included certain spent halogenated and nonhalogenated solvents, including still bottoms from the recovery of these solvents.

On December 31, 1985 (50 FR 53315), the Agency promulgated an amendment to the listings to include mixtures containing a total of 10 percent or more (by volume) of one or more of the listed solvents (the 10 percent threshold always applied to solvent mixtures before use). The Agency believed that establishing a threshold level below the minimum solvent concentration typically used in solvent formulations would bring the majority of solvent mixtures used in commerce into the hazardous waste management system, while excluding dilute mixtures. The Agency also clarified in the December 31, 1985, Federal Register (50 FR 53315), that the listings cover only those solvents that are used for their "solvent" properties, i.e., to solubilize (dissolve) or mobilize other constituents. Manufacturing process wastes where solvents were used as reactants or ingredients in the formulation of commercial chemical products are not covered by the listing.

The definition of the spent solvents listing did not include four solvents that were added to the F001-F005 listing on February 25, 1986 (51 FR 40607): Benzene, 2-ethoxyethanol, 2-nitropropane, and 1,1,2-trichloroethane .

b. F001-F005 Treatment Standards. The Agency promulgated treatment standards for the F001-F005 spent solvent wastes on November 7, 1986 (51 FR 40593). The Agency also promulgated a requirement that compliance with the treatment standard be measured in the waste extract as measured by the Toxicity Characteristic Leaching Procedure (TCLP).

This approach was taken because useful data were not available on total constituent concentrations in treated residuals, and as a result, the TCLP data were considered to be the best measure of performance.

Since that time EPA has based treatment standards for all organic constituents on the total constituent concentration analysis found in the treated waste. EPA has based this decision on the fact that the best demonstrated available treatment (BDAT) for organic wastes generally destroy the hazardous organic constituents. Accordingly, treatment should reflect the extent to which the various organic compounds have been destroyed or the total amount of constituent remaining after treatment.

c. Methylene Chloride Standard Revised. As part of the First Third Rule, the Agency revised and promulgated the treatment standard for methylene chloride in F001-F005 wastewaters from the pharmaceutical industry (53 FR 31152). The revised treatment standard was based on the transfer of wastewater treatment data from steam stripping of methylene chloride. Compliance with this treatment standard is measured by a total constituent analysis.

d. Setting Treatment Standards for Four (4) "Newly Listed" Constituents (51 FR 6737, February 25, 1986). In the Third Third rule (55 FR 22576), the Agency promulgated treatment standards for 1,1,2-trichloroethane, benzene, 2- ethoxyethanol, and 2-nitropropane in F002 and F005 spent solvents. (EPA did not amend the previously promulgated treatment standards for the other solvent constituents in F002 and F005). The concentration-based treatment standards for 1,1,2-trichloroethane and benzene in wastewater forms were based on performance data generated from: biological treatment, steam stripping, carbon adsorption, liquid extraction, and others. The concentration-based treatment standards promulgated for 1,1,2-trichloroetha ne and benzene in nonwastewater forms were based on performance data from incineration. These treatment standards are measured by total constituent analysis. EPA had also determined that the available data were insufficient to establish concentration-based treatment standards for wastewater and nonwastewater forms of F005 containing 2-nitropropane and 2-ethoxyethanol and instead promulgated methods of treatment as the treatment standards. Again, EPA is not revising this previously promulgated treatment standard.

2. Overlap Between F001-F005 Solvents and Other BDAT Standards.

Many of the solvent constituents that are regulated in F001-F005 wastes are also regulated in the First, Second, and Third Third rules, as discussed in the preamble to the January 9, 1992 proposed rule (57 FR 970).

In the November 22, 1989 proposed rule for the Third Third wastes, EPA proposed two alternative sets of concentration-based treatment standards for wastewater forms for the majority of the U and P listed wastes, many of which are solvent constituents found in F001-F005 wastes. One set of treatment standards was based on the concentration of each constituent in

incinerator scrubber water; whereas, the second set of treatment standards was based on wastewater treatment performance data for each constituent. On the basis of comments received, the Agency promulgated treatment standards based on wastewater treatment performance data. These treatment standards were promulgated on June 1, 1990 (55 FR 22601).

The Agency also proposed treatment standards for nonwastewater forms of U and P listed wastes on November 22, 1989 (54 FR 48372). In the final Third Third rule, the Agency promulgated treatment standards for approximately 75 constituents, establishing either concentration-based standards, or incineration as a method of treatment as BDAT.

Treatment standards for several F and K listed wastes containing the same solvent constituents as are present in F001-F005 solvent wastes were also promulgated in the Third Third rule as discussed in the January 9, 1992 proposed rule (57 FR 970).

3. Comments Received on the January 9, 1992 Proposed Rule

The Agency received a number of generally favorable comments on the proposed approach--that is, most commenters supported revising the nonwastewater treatment standards from the existing TCLP standards to standards based on total concentrations. Hazardous Waste Treatment Council (HWTC) expressed concerns, however, with regard to meeting concentration based standards for five constituents: chlorobenzene, n-butyl alcohol, o-cresol, ethyl acetate, and nitrobenzeneone. EPA acknowledges HWTC's concerns with regard to potential analytical difficulties in the analysis of these five constituents. EPA has, in fact, addressed this issue in the June 1, 1990 final rule (55 FR 22541). If the treater uses incineration to treat these wastes and achieves a non-detect level within an order of magnitude of the promulgated treatment standards, then they are considered to have achieved the standard (see 55 FR 22541, June 1, 1990).

Most of HWTC's problem constituents would be able to comply with the treatment standard after the order of magnitude allowance is taken into account. One constituent, o-cresol, according to the data submitted by HWTC, appears to exceed the proposed treatment standard. After reviewing available incineration and combustion data for this constituent, EPA believes the proposed treatment standards (and the one order of magnitude allowance) are reasonable and achievable. In fact, the Agency has promulgated treatment standards for o-cresol in K019, F039 and U052 at a level of 5.6 ppm with detection limits of less than 2.0 ppm. Also, o-cresol is a regulated constituent in K052, whose treatment standard of 6.2 ppm is based on a detection limit of 2.2 ppm which was based on treatment data submitted from industry (55 FR 22594). EPA is therefore, promulgating today, treatment standards for each one of the five constituents as proposed on January 9, 1992 (57 FR 971).

4. Final Approach

The Agency is promulgating revised treatment standards for both nonwastewater and wastewater forms of F001-F005 wastes as proposed. (See the Table at end of this section for specific treatment levels.) The methodology used to develop the treatment standards for both nonwastewater and wastewater forms of F039 (multisource leachate) was used to determine the revised treatment standards for the F001-F005 spent solvents. These

revisions do not, however, include the four solvents that were added to the solvents listings: benzene, 2-ethoxyethanol, 2-nitropropane, and 1,1,2-trichloroethane.
Treatment standards for these constituents were promulgated in the Third Third final rule in accordance with the previously mentioned methodology.

Today's rule does not include revised treatment standards for nonwastewater forms of carbon disulfide, cyclohexanone, or methanol based on total constituent analysis. These three constituents are not well suited for total constituent analysis, and, in fact, are more appropriately analyzed by the TCLP methodology. The Agency did not propose to revise the existing TCLP treatment standards, for these three constituents, in the January 9, 1992 rulemaking. The Agency is retaining the existing TCLP standards for these three constituents in F001-F005 nonwastewaters in today's rulemaking. (TCLP treatment standards for these three constituents appear in a table at the end of this section).

Because the Agency does not want to require unnecessary and burdensome testing, the TCLP test will only have to be performed if the waste includes only one, two or all three of these constituents. If the waste contains any of these three constituents along with any of the other 26 constituents found in F001-F005 for which the Agency is promulgating treatment standards based on total constituents analysis, only the total analysis need be performed. It is assumed that after treatment is performed, for these organic constituents, and the total constituent standards are achieved, that these three constituents will also have been treated.

a. Revisions to the Standards for Cresols. In the Solvents and Dioxins rule, the Agency promulgated BDAT treatment standards for "cresols." At that time, the Agency did not distinguish between the various isomers that are present in cresols. As a result, the Agency promulgated a concentration-based treatment standard for cresol wastewaters of 2.82 mg/l based on the performance of activated carbon adsorption. For nonwastewaters, the Agency had no data on TCLP extracts of residues from the incineration of cresols (cresylic acid) to use in the development of the treatment standard. EPA, instead, used chemical structure as the basis for transferring the treatment data from methyl ethyl ketone to cresols (cresylic acid) in spent solvents.
The treatment standard of 0.75 mg/l for nonwastewaters is based on the transferred data.

In the Third Third rule, EPA promulgated treatment standards for U052. U052 is listed as "cresols (Cresylic acid). U052 typically contains various levels of ortho-cresol, meta-cresol, and para-cresol. Analytical methods are usually reported for o-cresol (CAS No. 95-48-7) and a combination of m- and p- cresols, because m-cresol and p-cresol cannot generally be distinguished by analytical methods. Thus, the Agency promulgated concentration-based standards for U052 based on an analysis for o-cresol and the mixture of m- cresol and p-cresol.

Based on this, the Agency is today modifying the current treatment standards for the constituent "cresols" in F001-F005 wastes as proposed. (57 FR 970, January 9, 1992).

b. Modification to the Regulatory Placement of F001-F005 Standards. In today's rule, EPA is promulgating revised treatment standards for solvent wastewaters (F001-F005) in Table CCW (40 CFR 268.43) as proposed. (The

following treatment standards for wastewaters are based on F039 wastewater data, and for nonwastewater is based on incineration data).

Promulgated BDAT Treatment Standards for F001-F005 Spent Solvent Wastes
(Wastewater; Total Concentration)

Regulated constituent	Wastewater (mg/l)
Acetone	0.28
n-Butyl alcohol	5.6
Carbon disulfide	0.014
Carbon tetrachloride	0.057
Chlorobenzene	0.057
Cresol(m- and p- isomers)	0.77
o-Cresol	0.11
Cyclohexanone	0.36
1,2-Dichlorobenzene	0.088
Ethyl acetate	0.34
Ethyl benzene	0.057
Ethyl ether	0.12
Isobutyl alcohol	5.6
Methanol	5.6
Methylene chloride	/1/ 0.089
Methyl ethyl ketone	0.28
Methyl isobutyl ketone	0.14
Nitrobenzene	0.068
Pyridine	0.014
Tetrachloroethylene	0.056
Toluene	0.08
1,1,1-Trichloroethane	0.054
Trichloroethylene	0.054
1,1,2-Trichloro-1,2,2,-trifluoroethane	0.057
Trichloromonofluoromethane	0.02
Xylenes (total)	0.32

/1/ The methylene chloride treatment standard for wastewaters generated from pharmaceutical plants is 0.44 mg/l.
NA: Not applicable.

Promulgated BDAT Treatment Standards for F001-F005 Spent Solvent Wastes
(Nonwastewater; Total Concentration)

Regulated constituent	Nonwastewater (mg/kg)
Acetone	160
n-Butyl alcohol	2.6
Carbon disulfide	/1/ NA
Carbon tetrachloride	5.6
Chlorobenzene	5.7
Cresol(m- and p- isomers)	3.2
o-Cresol	5.6
Cyclohexanone	/1/ NA
1,2-Dichlorobenzene	6.2
Ethyl acetate	33
Ethyl benzene	6.0
Ethyl ether	160
Isobutyl alcohol	170
Methanol	/1/ NA

Methylene chloride	33
Methyl ethyl ketone	36
Methyl isobutyl ketone	33
Nitrobenzene	14
Pyridine	16
Tetrachloroethylene	5.6
Toluene	28
1,1,1-Trichloroethane	5.6
Trichloroethylene	5.6
1,1,2-Trichloro-1,2,2,-trifluoroethane	28
Trichloromonofluoromethane	33
Xylenes (total)	28

/1/ These treatment standards are based on TCLP, not total constituent concentration (see following table with TCLP treatment standards).
NA: Not applicable.

Promulgated BDAT Treatment Standards for F001-F005 Spent Solvent Wastes (Nonwastewater; Toxicity Characteristic Leaching Procedure)

Regulated constituent	Nonwastewater (mg/l)
Carbon disulfide	4.8
Cyclohexanone	0.75
Methanol	0.75

B. Conversion of Wastewater Standards Based on Scrubber Water

K015--Still bottoms from the distillation of benzyl chloride
K016--Heavy ends or distillation residues from the production of carbon tetrachloride
K018--Heavy ends from the fractionation column in ethyl chloride production
K019--Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production
K020--Heavy ends from the distillation of vinyl chloride in vinyl chloride production
K023--Distillation light ends from the production of phthalic anhydride from naphthalene
K024--Distillation bottom tars from the production of phthalic anhydride from naphthalene
K028--Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane
K030--Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene
K048--Dissolved air flotation (DAF) float from the petroleum refining industry
K049--Slop oil emulsion solids from the petroleum refining industry
K050--Heat exchanger bundle cleaning sludge from the petroleum refining industry
K051--API separator sludge from the petroleum refining industry
K052--Tank bottoms (leaded) from the petroleum refining industry
K087--Decanter tank tar sludge from coking operations
K093--Distillation light ends from the production of phthalic anhydride from ortho-xylene
K094--Distillation bottoms from the production of phthalic anhydride from ortho-xylene

U028--Bis(2-ethylhexyl)phthalate
U069--Di-n-butyl phthalate
U088--Diethyl phthalate
U102--Dimethyl phthalate
U107--Di-n-octyl phthalate
U190--Phthalic anhydride (measured as Phthalic acid)

On November 22, 1989 (54 FR 48372), EPA proposed as part of the Third Third rule concentration-based treatment standards for numerous listed wastes based on the performance of incineration. For the wastewaters, the treatment standards were based on the concentration of the constituents of concern in incineration scrubber waters. In the final rule (55 FR 22520), however, EPA altered its approach to setting these standards and promulgated treatment standards for wastewaters based on actual wastewater treatment data for the constituents of concern. This change was adopted for a number of reasons.

First, it was stated in the final rule for the Second Third wastes (54 FR 26629) and reiterated in the final rule for Third Third wastes (55 FR 22577) that when the Agency had appropriate wastewater treatment data from well- designed and well-operated wastewater treatment units it preferred to use those data rather than scrubber water data to develop wastewater treatment standards. This is because incineration is not a normal treatment method for wastewaters. In addition, alternative standards were proposed in the Third Third notice for multisource leachate (F039) wastewaters based on a transfer of performance data from various sources. Second, commenters on the proposed Third Third rule had urged the Agency to develop treatment standards for wastewater forms based on residues from wastewater treatment technologies rather than incineration scrubber waters. Commenters on previous rules had also stated that when EPA had performance data from technologies treating wastewaters containing the same or similar constituents that EPA should use it to develop treatment standards.

The Agency reviewed all of the aforementioned data during the Third Third comment period and promulgated constituent-specific concentration-based standards. Detailed information on the development of the wastewater treatment standards can be found in the background document titled Final Best Demonstrated Available Technology (BDAT) Background Document for U and P Wastes and Multi-Source Leachates (F039), Volume A: Wastewater Forms of Organic U and P Wastes and Multi-Source Leachates (F039) for Which There Are Concentration-Based Treatment Standards. (This document can be found in the RCRA docket for the Third Third final rule).

As part of the First Third and Second Third rules, EPA promulgated treatment standards for wastewater forms of 23 K and U wastes (i.e., K015, K016, K018, K019, K020, K023, K024, K028, K030, K048, K049, K050, K051, K052, K087, K093, K094, U028, U069, U088, U102, U107, and U190). These wastewater treatment standards were based on data from incineration scrubber waters.

Upon review of all available data and comments, the Agency believes that BDAT for these wastewaters is better represented by concentration-based treatment standards based on actual wastewater treatment technologies rather than scrubber waters generated from incineration. Therefore, the Agency is today promulgating concentration-based treatment standards for these wastewaters as proposed. The wastes affected by this change come primarily from three general treatability groups: chlorinated organics, petroleum wastes, and phthalate wastes. The Agency believes that this change is consistent with the changes made to the wastewater standards in

the final Third Third rule. It should be noted, however, that any technology not otherwise prohibited (e.g., impermissible dilution) may be used to meet the concentration-based treatment standards for these wastewaters, including incineration.

Finally, during the development of the Third Third rule, the Agency determined that for pentachloroethane (a regulated constituent in K018, K028, and K030), complications arose in terms of how reliably the constituent could be quantified (55 FR 22611). As such, the Agency made a decision to promulgate a method (or methods) of treatment, rather than a constituent- specific standard. Today, EPA is deleting pentachloroethane from further regulation in the wastewater forms of K018, K028, and K030, as discussed in the January 9, 1992 proposed rule. Treatment of other constituents will act as reliable surrogates for the treatment of pentachloroethane in these wastes.

Promulgated Treatment Standards for Various F and K Wastewaters

Waste code and regulated organic constituent	Revised standard (mg/l)
K015:	
Anthracene	0.059
Benzal chloride	0.28
Benzo(b and/or k)fluoranthene	0.055
Phenanthrene	0.059
Toluene	0.080
K016:	
Hexachlorobenzene	0.055
Hexachlorobutadiene	0.055
Hexachlorocyclopentadiene	0.057
Hexachloroethane	0.055
Tetrachloroethene	0.056
K018:	
Chloroethane	0.27
Chloromethane	0.19
1,1-Dichloroethane	0.059
1,2-Dichloroethane	0.21
Hexachlorobenzene	0.055
Hexachlorobutadiene	0.055
Pentachloroethane	NA
1,1,1-Trichloroethane	0.054
Hexachloroethane	0.055
K019:	
bis(2-chloroethyl)-ether	0.033
Chlorobenzene	0.057
Chloroform	0.046
1,2-Dichloroethane	0.21
p-Dichlorobenzene	0.09
Fluorene	0.059
Hexachloroethane	0.055
Naphthalene	0.059
Phenanthrene	0.059
1,2,4,5-Tetrachlorobenzene	0.055
Tetrachloroethene	0.056
1,2,4-Trichlorobenzene	0.055
1,1,1-Trichloroethane	0.054
K020:	

1,2-Dichloroethane	0.21
1,1,2,2-Tetrachloroethane	0.057
Tetrachloroethene	0.056
K023: Phthalic anhydride (measured as phthalic acid)	0.069
K024: Phthalic anhydride (measured as phthalic acid)	0.069
K028:	
1,1-Dichloroethane	0.059
Trans 1,2-Dichloroethane	0.054
Hexachlorobutadiene	0.055
Hexachloroethane	0.055
Pentachloroethane	NA
1,1,1,2-Tetrachloroethane	0.057
1,1,2,2-Tetrachloroethane	0.057
Tetrachloroethene	0.056
1,1,1-Trichlorethane	0.054
1,1,2-Trichloroethane	0.054
K030:	
o-Dichlorobenzene	0.088
p-Dichlorobenzene	0.09
Hexachlorobutadiene	0.055
Hexachloroethane	0.055
Pentachloroethane	NA
1,2,4,5-Tetrachlorobenzene	0.055
Tetrachloroethene	0.056
1,2,4-Trichlorobenzene	0.055
K048:	
Benzene	0.14
Benzo(a)pyrene	0.061
Bis(2-ethylhexyl)-phthalate	0.28
Chrysene	0.059
Di-n-butyl phthalate	0.057
Ethylbenzene	0.057
Fluorene	0.059
Napthalene	0.059
Phenanthrene	0.059
Phenol	0.039
Pyrene	0.067
Toluene	0.080
Xylenes (total)	0.32
K049:	
Anthracene	0.059
Benzene	0.14
Benzo(a)pyrene	0.061
Bis(2-ethylhexyl)-phthalate	0.28
Carbon disulfide	0.014
Chrysene	0.059
2,4-Dimethylphenol	0.036
Ethylbenzene	0.057
Napthalene	0.059
Phenanthrene	0.059
Phenol	0.039
Pyrene	0.067
Toluene	0.080
Xylenes (total)	0.32
K050:	
Benzo(a)pyrene	0.061
Phenol	0.039

K051:	
Acenaphthene	0.059
Anthracene	0.059
Benz(a)anthracene	0.059
Benzene	0.14
Benzo(a)pyrene	0.061
Bis(2-ethylhexyl)-phthalate	0.28
Chrysene	0.059
Di-n-butyl phthalate	0.057
Ethylbenzene	0.057
Fluorene	0.059
Napthalene	0.059
Phenanthrene	0.059
Phenol	0.039
Pyrene	0.067
Toluene	0.080
Xylenes (total)	0.32
K052:	
Benzene	0.14
Benzo(a)pyrene	0.061
o-Cresol	0.11
p-Cresol	0.77
2,4-Dimethylphenol	0.036
Ethylbenzene	0.057
Naphthalene	0.059
Phenanthrene	0.059
Phenol	0.039
Toluene	0.080
Xylenes (total)	0.32
K087:	
Acenaphthalene	0.059
Benzene	0.14
Chrysene	0.059
Fluoranthene	0.068
Indeno(1,2,3-cd)pyrene	0.055
Naphthalene	0.059
Phenanthrene	0.059
Toluene	0.080
Xylenes (total)	0.32
K093: Phthalic anhydride (measured as Phthalic acid)	0.069
K094: Phthalic anhydride (measured as Phthalic acid)	0.069
U028: Bis(2-ethylhexyl)-phthalate	0.28
U069: Di-n-butyl phthalate	0.057
U088: Diethyl phthalate	0.2
U102: Dimethyl phthalate	0.047
U107: Di-n-octyl phthalate	0.017
U190: Phthalic anhydride (measured as phthalic acid)	0.069
NA: Not applicable.	

C. Revisions to Treatment Standards for K061, K062, and F006

With two exceptions, the Agency is promulgating as proposed the treatment standards for the iron and steel process wastes K061 and K062 and the electroplating waste F006. The January 9, 1992, proposed rule (57 FR 975-977) contained three major provisions for K061, K062, and F006: (1) Removing the Low Zinc and High Zinc subcategories for K061 electric arc furnace dust wastes and establishing the high zinc subcategory

nonwastewater standards for all K061 nonwastewaters regardless of zinc level; (2) setting alternative treatment standards for K062 and F006 nonwastewaters with recoverable amounts of nickel and chromium; and (3) excluding from regulation as a hazardous waste nonwastewater residues generated from high-temperature metals recovery (HTMR) treatment of F006 and K062 provided the residues meet the designated generic exclusion levels, they are disposed of in a subtitle D unit, and they do not exhibit one or more of the hazardous waste characteristics.

One of the two changes the Agency has made between proposal and promulgation consists of basing the promulgated generic exclusion on a different fate-and-transport model than the proposed exclusion and thus promulgating different exclusion levels for several contaminants. The second change is that EPA is promulgating neither treatment standards nor exclusion levels for vanadium, thus effectively deleting vanadium from the K061, K062, and F006 rulemaking.

The August 19, 1991 (56 FR 41164), final rule for K061 (electric arc dust) set numerical treatment standards for high-zinc K061 nonwastewaters based on the performance of high-temperature metals recovery units. This final rule also promulgated a generic exclusion from the derived-from rule for nonwastewater residues generated from HTMR processing of K061 wastes.

Today's rule extends both the HTMR-based treatment standards and the generic exclusion criteria for HTMR residues to K062 (steel finishing pickle liquor) and F006 (electroplating wastewater treatment sludges) nonwastewaters.

1. Removal of the Low Zinc Subcategory for K061 Wastes

The Agency is today transferring the treatment standards promulgated for high-zinc (greater than 15 percent) K061 nonwastewaters (56 FR 41164, August 19, 1991) to low-zinc K061 nonwastewaters; by doing this, the Agency eliminates the low- vs. high-zinc categories and regulates all K061 nonwastewaters with the same numerical treatment standards and generic exclusion levels. The promulgated treatment standards are based on the performance of high-temperature metals recovery (HTMR); however, since these are concentration-based standards, any technology, including stabilization, that meets the treatment standards can be used.

2. Alternative Treatment Standards for F006 and K062 Nonwastewaters Based on High Temperature Metals Recovery (HTMR)

The Agency is promulgating alternative treatment standards for K062 and F006 nonwastewaters as proposed. These treatment standards, based on HTMR, are the same as those promulgated in August 1991 for "high-zinc" nonwastewaters and the standards promulgated in this rule for all K061 nonwastewaters.

EPA is also promulgating a new regulatory section (40 CFR 268.46) for any treatment standards serving as alternates for compliance with standards in 40 CFR 268.41, 268.42 and 268.43.

The alternative treatment standards for F006 includes standards for cyanides. Although the Agency has no HTMR performance data for cyanide, EPA

believes (as discussed in the proposed rule at 57 FR 975) that HTMR treats cyanide to a level comparable to incineration. Since no commenters challenged this belief and there is no reason to believe HTMR units will not destroy cyanide as efficiently as incineration, EPA is promulgating alternative cyanide standards for F006 developed from incinerator performance. The HTMR- based alternative treatment standards are higher numerically for several constituents (chromium in K062; cadmium, nickel and silver in F006) than the original stabilization-based standards. These higher numbers are acceptable to the Agency as alternative treatment standards because the HTMR-based alternatives regulate more constituents than the original stabilization-based standards, and also because they express the Agency's preference for recycling methods.

3. Generic Exclusion of F006 and K062 HTMR Nonwastewater Residues

EPA is promulgating generic exclusion levels for nonwastewater residues generated from HTMR of F006 and K062 in rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/ electric furnace combinations, or industrial furnaces. These residues can go into subtitle D units if the residues meet the generic exclusion levels for all constituents and these residues that do not exhibit any of the hazardous characteristics. The Agency received a variety of comments on the generic exclusion for all K061, K062, and F006 HTMR residues. Some of the comments supported this extension of the generic exclusion: Others objected to the exclusion levels and to the Agency's decision to limit the generic exclusion to HTMR residues.

Although the vertical and horizontal spread (VHS) model was the basis for calculating the proposed generic exclusion levels, EPA indicated in the January 9, 1992 proposed rule preamble that it also was considering basing exclusion levels on an alternative model, the EPA Composite Model for Landfills (EPACML) (see 57 FR 976; see also 56 FR 67197, December 30, 1991 for adopting use of the model in site specific delistings). Most commenters discussed the EPACML alternative and urged the Agency to use it rather than the VHS model to develop generic exclusion levels for this rule.

The most salient consequence of the change in models from VHS to EPACML is that EPACML generic exclusion levels for arsenic and zinc are higher than the BDAT standards in the HTMR-based alternative treatment standards for K062 and F006 and in the HTMR-based BDAT standards for K061. EPA retained the EPACML- based generic exclusion numbers regardless of their values relative to HTMR BDAT standards because the generic exclusion is independent from BDAT in such a way that EPA has no reason to adjust generic exclusion levels in order to reconcile them with BDAT standards when the numerical values differ significantly for a particular compound. The different, and occasionally overlapping, sets of numbers for BDAT standards and generic exclusion levels reflect the fact that these are two different sets of regulatory controls on HTMR residues from K061, K062, F006. BDAT standards apply to residuals from treatment of hazardous waste--which are themselves still hazardous wastes because of the derived-from rule intended for land disposal. They reflect the best level of performance that treatment technology can provide and they apply to hazardous wastes concentrations of contaminants determined (by the model) to pose minimal health risks when the waste is disposed in a unit permitted under RCRA Subtitle D. A generic exclusion takes a waste out of the hazardous-waste universe because when a waste meets generic exclusion

levels the exclusion essentially exempts it from subtitle C management.

The Agency also received a number of significant comments on the proposal to grant a generic exclusion for residues from HTMR processing of F006 and K062 nonwastewaters. Many commenters favored the proposed exclusion. Waste Management Inc., (WMI) and the Hazardous Waste Treatment Council (HWTC) objected, however, on several grounds.

WMI submitted comments similar to those it previously submitted for the K061 high-zinc subcategory rule. In particular, the commenter objected to the generic exclusion for a number of reasons. First, there are relatively few HTMR treaters of F006 and K062; site-specific delistings are a more appropriate alternative. Second, excluding slag to be used as a road-base material is an inappropriate application of the VHS. Third, EPA based the exclusion decision on inadequate data regarding the different types of HTMR processes that are potentially subject to the exclusion and on inadequate data on the fate of organic species that may be present in the feedstocks.

Fourth, the VHS model to exclude K061 did not consider exposures from runoff or wind dispersion. Fifth, there is concern about unaddressed air emissions problems with the HTMR processes themselves.

The Agency responded to the substantive issues in these comments in the K061 high-zinc subcategory final rulemaking. EPA's position remains that, although the generic exclusion may affect a small number of facilities at the time of promulgation, other HTMR facilities may be constructed in the future.

More important, however, EPA's generic exclusion decision in regard to these wastes depends on the potential hazard (e.g., waste volume, composition) of the waste generated, not on the number of facilities generating the waste.

In today's final rule, the Agency is using EPACML instead of the VHS model to represent more accurately the groundwater hydraulics at landfills. EPACML predicts the potential for groundwater contamination from wastes that are co- disposed with municipal solid waste in an unlined land disposal unit and is, therefore, an appropriately conservative methodology for evaluating the risk from landfilled HTMR residue. In addition, as in the August 19, 1991 rule for K061, the Agency is limiting the generic exclusion to F006 and K062 HTMR residues, among other things, disposed of in a subtitle D unit and thus is not evaluating the appropriateness of EPACML for quantifying the safety of any use constituting a disposa1 scenario such as-use as roadbase.

Consequently, this generic exclusion does not cover material to be used as a product.

The Agency disagrees with the comment that inadequate data were collected from the different types of HTMR processes that are potentially subject to exclusion. In determining the BDAT treatment levels, the Agency reviewed all the treatment performance data available from various HTMR processes. (These data are available in the Background Document supporting this rulemaking).

EPA then calculated the final treatment standards based on the data from well-designed and well-operated HTMR processes. Thus, EPA believes that it has adequately characterized the performance of the major HTMR processes with respect to achieving the BDAT treatment levels. EPA notes further that since the exclusion levels are essentially risk-based numbers (i.e., the numbers are based either on the model or are the slightly lower technology-based numbers), the issue of the sufficiency of treatment

performance characterization data does not affect the validity of the generic exclusion standards. To address the Agency's intent to establish "minimize threat levels" which could require modification of the purely technology-based BDAT standards, EPA is evaluating the alternatives proposed in the Hazardous Waste Identification Rule (HWIR) (see 57 FR 21450, May 20, 1992).

In response to the commenter's concern about the fate of organic species in the feed to HTMR processes, the Agency remains convinced that, considering that HTMR units operate at higher temperatures and longer residence times than incinerators, that HTMR units will destroy organic constituents as well as incinerators. All available data showed no quantifiable levels of organic constituents in treated residues, confirming EPA's engineering opinion; nor do the processed wastes typically contain appreciable concentrations of organics. (The Agency notes that while developing the BDAT treatment standards for nonwastewater HTMR K061 residues it investigated whether toxic organic constituents were present in the HTMR residues. The available treatment performance data did not indicate the presence of BDAT list organic constituents at detectable levels). In addition, as part of its delisting petition request for residual slag from treatment of K061 waste by HTMR, Horsehead Resource and Development Company (HRD) analyzed residual slag samples for sixteen polycyclic aromatic hydrocarbon (PAHs) constituents most likely to be products of incomplete combustion. None of the sixteen PAHs was detected in any of the samples generated from coke-fired and coal-fired processing.

WMI objected that using the VHS model to generate generic exclusion levels for K061, K062, and F006 is not appropriate because it only considered contaminant transport in groundwater and excludes exposures from run-off or wind dispersion.

As already indicated, the Agency has chosen to limit the scope of the current generic exclusion to slag disposed of in a subtitle D unit. The Agency is confident that the EPACML is appropriate for a land disposal scenario and is therefore finalizing the generic exclusion for F006 and K062 residues from HTMR processes with the condition that such disposal occur. See the discussion of the EPACML model at 56 FR 32993, July 18, 1991.

The Hazardous Waste Treatment Council (HWTC) also objected to the Agency's proposal to include F006 and K062 residues resulting from HTMR processing in the generic exclusion. HWTC was concerned that the exclusion was an automatic, self-implementing process requiring neither analytical verification nor review by EPA or the public. Section IV.E. of today's rule describes EPA's revised recordkeeping requirements for generically excluded HTMR K061, K062, and F006 residues (and characteristic wastes). This section explains EPA's choice of a tracking and handling system for generically excluded wastes.

With respect to the issue concerning air emissions, the Agency notes that all existing HTMR units use baghouses, wet scrubbers, or some other form of air pollution control device (APCD) to capture particulate matter present in the off-gases. These units may also be addressed pursuant to amended section 112 of the Clean Air Act. The amended section 112 requires the application of maximum achievable control technology (MCAT) controls to major sources of hazardous air pollutants, plus further risk-based controls (if necessary) at a later time. Therefore, EPA does not believe that these

units need also be subject to the BIF regulations (see 56 FR 7142, February 21, 1991 for further discussion on EPA's basis for not regulating air emissions from these units under subtitle C).

Another issue was HWTC's objection to EPA's granting a generic exclusion for HTMR residuals from processing F006 and K062 while denying the exclusion for other non-HTMR recycling and treatment technologies treating F006 and K062.

The Agency based the decision to grant a generic exclusion for HTMR residues only for the following reasons: The generic exclusion will only apply to those nonwastewater residues generated by HTMR processes and not to other non-HTMR processes, such as hydrometallurgical processes or stabilization. The Agency currently lacks sufficient data to evaluate the residues from hydrometallurgical processes or to develop an appropriate sampling and analysis methodology for residues from hydrometallurgical processes.

The Agency presented the reasons for not generically excluding stabilized residues in the August 19, 1991 K061 high zinc final rule (56 FR 41173). The HTMR residues demonstrate consistent leaching behavior whereas stabilized matrices do not. The chemical bonding that occurs in the high temperature and oxidation/reduction conditions within the HTMR units is inherently different from the bonding that forms the basis of cementitious and pozzolanic stabilization. In addition, the kinetics of the reaction forming the bonds in these HTMR processes are superior in terms of immobilizing metals to the kinetics of bond formation in cementitious reactions because they are faster.
(Common forms of cement are not typically considered set until after a minimum of 72 hours and often not considered fully cured until after 28 days). Furthermore, stabilization is highly matrix-dependent and prone to chemical interference. Most commercial stabilization facilities develop special mixes to control curing time and/or product integrity.

EPA reminds the regulated community that it is not prohibiting stabilization as treatment for K061, K062, and F006 waste, and that facility- specific delisting remains an option for stabilized K061, K062, and F006 wastes. Because of the inherent differences between HTMR and stabilization stated above and because existing data do not support a generic exclusion for stabilized K061, K062, and F006 wastes, the Agency chooses not to extend generic exclusion to these stabilized residues.

D. Vanadium: Treatment Standards and Appendix VIII

The Agency is deferring the expansion of the list of inorganic constituents in appendix VIII and is not including vanadium in the treatment standards.
These remain technical issues that EPA has not yet resolved in the brief time allocated in promulgating today's regulations. The proposed HWIR (57 FR 21450, May 20, 1992) identified exclusion criteria for Vanadium, and the Agency is continuing to assess how to address Vanadium in HWIR and future Land Disposal Restrictions.

Because of concerns about Vanadium's low volatility and consequent tendency to accumulate in slag residual, the August 19, 1991, rule for high-zinc K061 nonwastewaters reserved vanadium rather than set a numerical

treatment standard. Data reviewed by the Agency for the high-zinc rule since that time does not support setting a treatment standard for vanadium. EPA is therefore not promulgating treatment standards for vanadium in K061 nor promulgating vanadium standards in alternative standards for K062 and F006 wastes in this rule.

Final Generic Exclusion Levels for K061 and K062 HTMR Residues (Nonwastewaters)

Regulated constituent	Maximum for any single composite sample--TCLP (mg/l)
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

Final Generic Exclusion Levels for F006 HTMR Residues (Wastewaters)

Regulated constituent	Maximum for any single composite sample--TCLP (mg/l)
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

Regulated constituent	Maximum for any single composite sample--(mg/kg)

Cyanide (Total)	1.8

Final Treatment Standards for K061
(Low and high zinc subcategories, nonwastewaters)

Regulated constituent	Maximum for any single composite sample--TCLP (mg/l)
Antimony	2.1
Arsenic	0.055
Barium	7.6.
Beryllium	0.014
Cadmium	0.19
Chromium (Total)	0.33
Lead	0.37
Mercury	0.009
Nickel	5.0
Selenium	0.16
Silver	0.30
Thallium	0.078
Zinc	5.3

Treatment Standards for K062
(Nonwastewaters)

Regulated constituent	Alternative treatment standards based on HTMR performance maximum for any single composite sample--TCLP (mg/l)	Treatment standards based on stabilization maximum for any single grab sample--TCLP (mg/l)
Antimony	2.1	NA
Arsenic	0.055	NA
Barium	7.6	NA
Beryllium	0.014	NA
Cadmium	0.19	NA
Chromium (Total)	0.33	0.094
Lead	0.37	0.37
Mercury	0.009	NA
Nickel	5.0	NA
Selenium	0.16	NA
Silver	0.30	NA
Thallium	0.078	NA
Zinc	5.3	NA

NA--Not Applicable.

Treatment Standards for F006
(Nonwastewaters)

	Alternative treatment standards based on	Treatment

Regulated constituent	HTMR performance maximum for any single composite sample--TCLP (mg/l)	standards based on stabilization maximum for any single grab sample--TCLP (mg/l)
Antimony	2.1	NA
Arsenic	0.055	NA
Barium	7.6	NA
Beryllium	0.014	NA
Cadmium	0.19	0.066
Chromium (Total)	0.33	5.2
Lead	0.37	0.51
Mercury	0.009	NA
Nickel	5.0	0.32
Selenium	0.16	NA
Silver	0.30	0.072
Thallium	0.078	NA
Zinc	5.3	NA

Regulated constituent	Alternative treatment standards based on HTMR performance maximum for any single composite sample (mg/kg)	Treatment standards based on alkaline chlorination maximum for any single grab sample (mg/kg)
Cyanides (Total)	1.8	590
Cyanides (Amenable)	NA	30

NA--Not Applicable.

E. Notification and Certification for Characteristic Wastes

The Agency is finalizing a revision to the recordkeeping requirements for certain wastes that meet LDR standards and are treated to nonhazardous levels. The change in notification and certification requirements affects two groups of wastes: characteristic wastes that meet LDR standards and are treated below the regulatory levels established for characteristic wastes, and K061, K062, and F006 residues from high temperature metal recovery that meet the generic exclusion levels and do not exhibit any hazardous waste characteristics. As proposed (see 57 FR 977), the Agency will no longer require the generator or treater to submit to EPA or an authorized state a notification and certification for each off-site shipment of these wastes. Instead, amended Sec. 268.9(d) and Sec. 261.3(c)(2)(ii)(C) now require that the generator or treater prepare the notification and certification for the initial shipment only, place one copy in the generator's or treater's own files, and send another copy to the appropriate EPA region or authorized state. The documentation must be retained by the generator or treater for at least five years. The generator's or treater's records must be updated if the process or operation generating the waste changes and/or if the subtitle D facility receiving the waste changes; however, the generator or treator need only notify EPA or an authorized state on an annual basis (at the end of the calendar year but no later than December

31) if the process or operation generating the waste changes or if the subtitle D facility receiving the waste changes. The document must include the name and address of the subtitle D facility receiving the waste, a waste description, applicable treatment standards, and a certification that the standards have been met. For K061, K062, and F006 residues from high temperature metal recovery, the recordkeeping requirements in Sec. 261.3(c)(2)(ii)(C) supersede those in Sec.
268.7(a)(6).

The Agency proposed this change because the existing requirements appeared to pose an unnecessary paperwork burden. It did not appear necessary for EPA or the states to be notified concerning every shipment of characteristic wastes and K061, K062, and F006 residues treated to nonhazardous levels; yet, at the same time, EPA and the states still need to be able to verify such treatment when conducting inspections of waste management operations. The Agency requested comment on the paperwork burden of the existing requirements, on its proposal, and on several alternative requirements that would also reduce the recordkeeping burden (see 57 FR 977).

Several commenters described the existing burden as "significant" or "onerous." One commenter said the requirement is especially burdensome for facilities with multiple shipments per day and is unnecessary since the waste is deemed nonhazardous. Another commenter stated that one of its plants had submitted over 1300 identical notification and certification documents in an eighteen-month period as a result of the Sec. 268.9(d) requirement. Still other commenters said the existing requirement is not onerous, since facilities can use fill-in-the-blank type forms.

The majority of commenters, however, supported the requirement being finalized today. Those who supported the requirement promulgated today interpreted it to require a reasonable level of recordkeeping while providing readily available information to allow identification of the subtitle D facilities receiving the waste. Several of these commenters said the alternative proposals were overly burdensome without providing attendant benefits.

Commenters who supported the existing recordkeeping requirements argued that submittal of a certification to EPA is the only incentive for generators to ensure that excluded waste going to subtitle D units is properly treated.
One commenter argued that the new proposal would weaken the RCRA system of cradle-to-grave protection. Another commenter advocated notification to the subtitle D facility receiving the waste, because only the generator or treater has sufficient information to determine if it meets the land disposal restrictions.

After considering all comments, EPA is finalizing the proposed revision because it is confident that there is little need for documentation of every shipment of the identical nonhazardous waste, nor is there a need for EPA or states to be informed of each shipment for disposal, as long as the information is available to inspectors. As for requiring notification of subtitle D facilities receiving the waste, EPA remains concerned that such a requirement would be counterproductive (see discussion at 55 FR 22662 to 22663).

F. Wastes Listed Because They Exhibit a Characteristic

In the January 9, 1992 proposed rule, EPA proposed a clarifying change to the existing regulations dealing with the applicability of land disposal prohibitions to wastes that are listed solely because they exhibit a non-toxic characteristic of hazardous wastes (see 57 FR 978). An example are the non-chlorinated solvents listed as F003 for which EPA promulgated numerical treatment standards in 1986. EPA had previously stated that such wastes cannot be diluted to meet the treatment standards and that these wastes must be treated to meet the part 268 treatment standards (56 FR 3871, January 31, 1991; 57 FR 978). Put another way, the land disposal prohibitions would apply at the point of generation for such wastes. EPA's proposed clarification was that the same principles apply with respect to mixtures of wastes listed because they exhibit a characteristic and other solid wastes (57 FR 978).

Upon reviewing this issue further, however, EPA realized that the principle appeared inconsistent (or could be read to be inconsistent), with respect to wastewaters listed because they exhibit a characteristic, with the rules adopted in the Third Third regulation regarding management of characteristic wastewaters. In the Third Third regulation, EPA applied prohibitions at the point of disposal for wastes that are hazardous because they exhibit a characteristic and are disposed in non-hazardous Class I injection wells; the Agency also applied dilution prohibitions at the point of disposal for most characteristic wastewaters managed in wastewater treatment systems ultimately discharging pursuant to sections 307 or 402 of the Clean Water Act. See Secs. 148.1(d), 268.3(b); and 55 FR 22656-22659 (June 1, 1990). This would indicate that wastewaters which are listed because they exhibit a characteristic would not be prohibited from disposal by underground injection provided they do not exhibit a characteristic when they are injected. In addition, such wastewaters can permissibly be diluted to meet the treatment standards before management in surface impoundments, provided the impoundments are part of treatment systems that are discharging pursuant to Clean Water Act requirements and provided the waste does not exhibit a characteristic when placed in an impoundment.

After considering this issue, and after soliciting and receiving further public comment on the point, EPA is interpreting its rules so as to be consistent with the approach of the Third Third rule with respect to wastewaters that exhibit a characteristic for the reasons set out in that rule. Thus, prohibitions for wastewaters that are listed solely because they exhibit a characteristic will apply at the point of disposal as explained above. Put another way, EPA is reading the existing rules in Secs. 148.1 and 268.3(b) as applying to wastewaters that are listed solely because they exhibit a non-toxic characteristic.

The Agency is not reconsidering, or reopening, the issue of treatment standards for nonwastewaters that are listed because they exhibit a characteristic. Thus, such wastes cannot be land disposed until treated to meet the applicable treatment standards, and cannot be diluted to meet those treatment standards (56 FR 3871). This would also be true of mixtures involving such listed wastes, since otherwise the prohibitions would have no real meaning.

Finally, with respect to wastewaters, the Agency recognizes that the issue of the legality of the Agency's application of prohibitions for

characteristic wastewaters at the point of disposal has been submitted for judgment to a panel of the District of Columbia Circuit Court as part of the litigation over the Third Third rule (Chemical Waste Management v. EPA, No.
90-1230). The Agency's action today clarifying that the same rules apply to wastewaters listed because they exhibit a characteristic and other characteristic wastewaters thus would be subject to the decision reached in this litigation.

G. Storage and Treatment in Containment Buildings

In some cases, hazardous wastes prohibited from land disposal must be stored for short periods of time to facilitate recycling, recovery, treatment, or transport off site to meet LDR standards; treatment may also be performed while these materials are being stored. Some of these non-liquid hazardous wastes are generated in large volumes (often in batches), and may not be amenable to management in RCRA tanks or containers. These wastes are sometimes stored or treated on concrete pads or similar floors inside buildings.

EPA currently classifies this type of management unit as an indoor waste pile, which EPA considers to be a land disposal unit based on the statutory definition of land disposal in section 3004(k). See 52 FR 40605 (November 7, 1986). Lead slags and spent potliners from primary aluminum production are examples of hazardous wastes that are amenable to management in such units because of their volume or bulk; contaminated debris may also be managed in such units. EPA believes that management of a hazardous waste inside a unit designed and operated to contain the hazardous waste within the unit--akin to storage in a RCRA tank or container--does not pose the types of potential harms or uncertainties Congress sought to address in defining land disposal, as it did in RCRA section 3004(k). These include uncertainties regarding containment of hazardous constituents placed on the land and the potential for persistence, toxicity, mobility and bioaccumulation of hazardous wastes placed on the land. A unit designed, constructed, and operated to contain the hazardous waste within it may, moreover, fulfill the congressional goal of waste management that is protective of human health and the environment. See section 3004(d)(1)(A)-(C) and 1003(a)(5).

EPA is today promulgating standards allowing management of hazardous wastes, including but not limited to lead slags, spent potliners, and contaminated debris within units, to be termed "containment buildings", which will not be considered placement on the land and thus not constitute land disposal as defined in section 3004(k) of RCRA. To allow storage and treatment of prohibited wastes in containment buildings, EPA today is establishing a new definition of containment building, amending the existing definition of pile to exclude containment buildings, and including containment buildings within those units covered by Sec. 268.50 as permissible for storage of prohibited wastes (since these buildings are no longer land disposal units), albeit subject to the prohibition on extended storage. EPA is also establishing specific design and operating standards for such units under Secs. 264 and 265, and allowing generators' containment buildings to be eligible under Sec. 262.34 for the 90-day generator provisions if their unit(s) meets all of the technical requirements for containment buildings (refer to discussion on 90-day applicability upcoming in this section).

Under today's rule, all containment buildings--both permitted and unpermitted--must achieve the same level of performance. Accordingly, EPA today is promulgating standards that require containment buildings operating under the part 265, subpart DD interim status standards to be designed, operated, and maintained to meet the same design and operating requirements as permitted containment buildings. These are either the design and operating standards in subparts DD of parts 264 or 265.

Virtually all public comments supported the establishment of this new type of management unit. The rule promulgated today incorporates only minor changes from the proposed rule.

To provide adequate time for design and construction of containment buildings, the effective date for these provisions shall be February 18, 1993. However, owner/operators who wish to begin operating containment buildings under these provisions prior to the effective date may do so provided that they notify the Regional Administrator of their intent, and they comply with the requirements of subpart DD prior to beginning operation.

1. Containment Buildings Are Not Land Disposal Units

The final rule indicates that containment buildings are not land disposal units. Thus, prohibited wastes can be stored in containment buildings without first meeting a treatment standard.

We explain below in detail how containment buildings are defined. However, the key features for determining that they are not land disposal units are that wastes are stored indoors in a secure structure (securely walled, roofed, and floored) that is designed to provide containment comparable to that provided by tanks or containers. EPA sees no statutory command precluding Agency discretion to define such units as not involving land disposal, nor did any commenter suggest that the Agency was barred from this determination. Moreover, storage in such units does not raise the types of environmental concerns and uncertainties (see section 1002(b)(7) and 3004(d)(1)(A)-(C)) that Congress sought to address in requiring hazardous wastes to be pretreated before being land disposed. Also, by defining containment buildings as not involving land disposal, the Agency is preventing the anomaly of bulk hazardous wastes not amenable to tank storage, yet requiring storage before treatment, being unable to be legally stored because non-tank or container storage would be defined as land disposal. An example is battery parts and groups that must be staged before being smelted.
(55 FR 22637.) Accordingly, EPA is exercising its discretion to define containment buildings as not being land disposal units.

2. Definition of Containment Building

EPA today defines in Sec. 260.10 a new unit, "containment building," as a "hazardous waste management unit that is used to store or treat hazardous waste under the provisions of subpart DD of parts 264 and 265." Subpart DD of parts 264 and 265 enumerates the design and operating standards for these units that ensure containment comparable to that of a RCRA tank or container.
EPA is also modifying the definition of "waste pile" to exclude these

units.

Under today's rule, a containment building unit is not defined as land disposal pursuant to RCRA section 3004(k) if the unit meets the requirements of Sec. 264.1100 and Sec. 265.1100. The unit must, among other things, be completely enclosed and have self-supporting walls, a primary barrier, designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling equipment in the unit, a secondary containment system (unless the unit manages non-liquid wastes only or has obtained a variance from the secondary containment standard), a liquid collection system, and controls for fugitive dust. The floors, walls, and roof of the unit must be constructed of man-made materials with sufficient structural strength to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit. The unit also must be designed and operated to prevent tracking of materials out of the unit.

3. Applicability of the 90-Day Accumulation Exclusion in Sec. 262.34

a. Containment Buildings Are Eligible for 90-Day Status. Under Sec. 262.34, a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status provided he complies with the requirements of subpart I, J, or W of 40 CFR part 265, among other requirements. To date, EPA has limited applicability of this 90-day provision to generators' containers, tanks, or drip pads (see 55 FR 50450, December 6, 1990). EPA today is extending the 90-day generator exemption in Sec. 262.34 to include containment buildings. The extension of the 90-day generator exemption to containment buildings is consistent with the application of the 90-day generator exemption to similar types of hazardous waste storage units, e.g., tanks and containers.

Commenters to the proposed rule overwhelmingly supported the extension of the 90-day generator exemption to these units. Some commenters also suggested that EPA extend this exemption to all containment buildings; others suggested extending this exemption beyond 90 days. The 90-day generator provision is premised on the need to avoid undue interference with generators' production processes (45 FR 2730, February 26, 1980) and stands as a narrow exception to otherwise applicable permitting requirements. This rationale does not appear to apply to off-site facilities. Therefore, the Agency is not extending its applicability in today's rule. However, EPA notes that extensions may be granted to the 90-day time period under existing rules when certain specific circumstances apply (see 55 FR 50450, December 6, 1990).

Specific to the comments suggesting that EPA extend the 90-day generator provision to all containment buildings including off-site facilities, EPA is not taking action in today's rule. EPA will, however, take comment on a proposal to expand the 90-day generator exemption to all containment buildings in the upcoming proposal for petroleum contaminated debris to be deferred from the TC. At that time, the Agency will evaluate whether the Agency's narrow exemption for 90-day units to generators should be expanded to off-site units for all tanks, containers, and containment buildings.

b. Documenting Compliance with 90-Day Limitations. In the proposed rule, EPA requested comment on whether generators who store or treat hazardous waste in containment buildings pursuant to the 90-day accumulator

provisions should be required to maintain on site, for the operating life of the containment building, a description of the procedures ensuring that no waste remains in the containment building for more than 90 days. EPA proposed that documentation of each waste removal be required in the generator's on-site files recording, at a minimum, the quantity of waste removed and the date and time of removal. EPA also noted that certain operations, for example, the continuous processing of wastes or blending of wastes, might complicate the generator's ability to determine when a particular waste volume ceased to be present within the containment building. EPA requested public comment on how best to ensure and document generator compliance with the requirement limiting the time waste may be accumulated within the containment building to 90 days or less.

Several commenters suggested a "mass balance" approach wherein the volume removed from a containment building over the course of 90 days would be required to be at least equal to the amount placed in the unit during that period to ensure compliance with the time limit. EPA does not believe that this would be adequate. While such an approach might ensure that the average residence time of wastes in the unit is less than 90 days, it could not assure that all wastes reside in the unit for less than that period.

Instead, EPA agrees with commenters who suggested that documented procedures ought to assure that each volume of waste resides in the unit for no more than 90 days. This requirement could be met in two ways: (1) By documenting that the unit is emptied at least once every 90 days, or (2) by having and documenting (in writing) the procedures in place to ensure that wastes in the unit are segregated by age and that no portion of the stored wastes is allowed to remain beyond the time limit. As part of that latter demonstration, owner/operators must document that the nature of their hazardous waste management operation is consistent with respecting that 90-day limit. For example, a generator who plans to use such a unit to accumulate waste for off-site shipment on a monthly basis should be able to meet this test; one who ships waste off site semi-annually could not do so. Given the statute's normal permitting scheme as well as the constraints on extended storage in section 3004(j), EPA believes this degree of assurance of actual waste turnover is justified.

EPA does not seek to require documentation of each individual addition or removal of waste from the unit; rather, the required written documentation must show that procedures are in place to ensure that individual additions and removals of wastes are consistent with the 90-day time limit for each portion of the wastes managed in the unit. However, if the generator cannot meet the 90-day time limit or if a hazardous waste is stored or treated in an off-site containment building, the unit must have interim status or a permit in accordance with existing regulations.

c. Reclassification of Regulated Units to 90-Day Status. EPA anticipates that some currently operating units that have been previously classified as waste piles will be converted to containment buildings as a result of today's rule. It is possible that there may be (or have been) releases of hazardous wastes from such units. When this rule was proposed, EPA raised the issue of whether unit-specific corrective action authority under RCRA should be retained for new units and for existing interim status or permitted units that subsequently become 90-day generators with containment buildings as their only RCRA activity. EPA pointed out that, even without RCRA corrective action authority, generators would still be liable for any releases under CERCLA.

Several commenters suggested that some or all units converted to containment buildings should not be subject to corrective action. While the Agency understands these commenters' concerns, the Agency believes that unit- specific corrective action is an appropriate part of the standards for containment buildings to remediate releases that conceivably occur or may occur from the unit. Such standards are a routine part of every standard for a RCRA hazardous waste management unit, including 90-day generator units.

See, e.g. Sec. 265.196 (corrective action for tanks including 90-day tanks) and Sec. 265.443(m) (corrective action for drip pads including 90-day drip pads). The Agency knows of no legal or policy justification for excluding these units from corrective action requirements (i.e., not redressing hazardous waste releases from such units).

However, new units operating under the 90-day generator provision will not trigger facility-wide corrective action under RCRA by themselves under the terms of today's rule, because no permit is required for their operations and the units have never had interim status or permits (see RCRA sections 3004(u) and 3008(h)). These units, however, must remediate unit-specific releases as just discussed, and also would be solid waste management units if the facility requires a RCRA permit for other units.

For previously regulated units, EPA expects that the "unit" for the purpose of corrective action will include the entire structure, or the entire portion of the structure operated, when the containment building is a part of a larger structure.

As noted above, 90-day containment buildings must meet the same substantive standards as permitted and interim status units. This includes a requirement of obtaining certification by a professional engineer that the unit is designed and constructed to meet the requirements for containment buildings and must maintain such certification at the facility (Sec. 262.34(a)(1)(iv)).

The subject of such certifications is discussed at greater length below.

Generators planning to convert to or install containment buildings in advance of the effective date for these requirements are required to place certifications for these units in the facility's operating record no later than 60 days from the date of initial operation of the unit as a containment building. After February 18, 1993, PE certification is required prior to operation of the unit.

4. Containment Building Requirements

The specific requirements for a containment building restrict the types of hazardous wastes that may be stored or treated in the unit and specify performance standards for the design and operation of the unit to ensure a measure of protection of human health and the environment greater than that provided by an indoor waste pile, and substantially equivalent to that provided by a RCRA tank or container. See subpart DD, parts 264 and 265.

a. Acceptable Wastes. Many commenters supported EPA's proposal to allow dry wastes or wastes with "very small quantities" of free liquids to be managed in containment buildings. Comments were divided on whether the term "very small" used in the proposal required an explicit definition or implied an unnecessary and arbitrary limit on the amount of liquid included

in a hazardous waste to be managed in a containment building. Today's rule states that wastes managed in containment buildings not be liquid in form (i.e., flow under their own weight to fill the vessel in which they are placed, or contain so much liquid that they are readily pumpable) or release such large quantities of liquid into the unit that liquid removal systems cannot prevent accumulation of liquid to significant depths. (These liquid wastes can, of course, be managed in tanks and containers that are inside containment buildings.)

EPA developed the containment building standards so that owner/operators could store or treat hazardous wastes that are not liquid in form, and which are not amenable to management in tanks or containers (perhaps because the waste occurs in a bulky form, or because it is produced in great volume.) This can facilitate owner/operator compliance with the prescribed BDAT standards. However, any waste that is non-liquid in form can also be stored/ treated in containment buildings even if the waste already comply with the land disposal restriction standards. The standards discussed below will ensure that these wastes will not pose a hazard to human health or the environment when managed in containment buildings.

Prior to incorporating these concepts into this rule, EPA considered developing a Policy Directive whereby certain hazardous wastes, i.e., aluminum spent potliners, recycled lead batteries, and possibly electric arc furnace dusts, were definitively identified as candidates for management within containment buildings. Although EPA believed wastes that are non- liquid in form could also be managed more practicably in containment buildings rather than tanks or containers, information on such wastes remained lacking. EPA considered two options regarding hazardous wastes eligible for management in these units: (1) All hazardous wastes, including contaminated debris; and (2) only contaminated debris and certain additional bulky, high volume hazardous wastes that EPA currently understands cannot be practicably stored/treated in tanks or containers. Public comments on the proposed rule stated that EPA should not limit eligibility to debris and certain bulky, high volume hazardous wastes or to specific waste codes, and that a specific limitation on the amount of liquid included in the waste was also not appropriate.

EPA sees no reason to restrict eligibility to only those hazardous wastes for which EPA has data available or to only prohibited wastes. When designed, constructed, and operated in accordance with the standards being promulgated today, a containment building managing hazardous waste that is non-liquid in form will ensure protection of human health and the environment.

Example: A secondary lead smelting facility recovers lead from battery plates and groups taken from lead-acid batteries. One of the steps involved in this process, battery cracking, necessarily generates wet lead-bearing materials. For process efficiency, among other reasons, free liquids are removed to the extent feasible prior to staging the materials for furnace feed. However, some residual free liquid remains and cannot be removed easily. In this example, the overall form of the material is non-liquid, even though some amount of free liquid remains despite attempts to remove it.

These wastes are eligible for management in containment buildings.

Example: A facility is cleaning up an area containing contaminated soil.

The excavated soil contains water in the soil matrix, and is at or near the point of saturation. Visual inspection of the soil reveals that the

amount of free liquid expected to be released in a containment building is very small in comparison with the total volume of the waste and the liquids management capacity of the unit. This material may be managed in a containment building.

b. Acceptable Activities. Containment buildings can be used to store hazardous waste for such activities as treatment (including recovery or other recycling) or transport off site to meet LDR treatment standards. As noted elsewhere in today's rule, wastes may be treated in containment buildings as well as stored in them. Examples of such treatment could include some of the technologies discussed in appendix I to this preamble for treatment of contaminated debris. Many of these technologies require the use of liquid. In many cases, such treatment would be conducted in tanks or containers within such buildings, and the existing standards for tanks and containers would apply. For example, a method for treating hazardous debris could include treatment in a tank within a containment building followed by storage for a short-period in the containment building. In this example, treatment in the tank would be regulated under the RCRA tank standards, while subsequent storage of the treated waste would be regulated under the containment building standards.

In other cases, treatment in tanks and containers as such may not be possible. For example, personnel may not be able to apply safely some of the prescribed debris treatment technologies to large bulky debris within a tank or container. Therefore, EPA is also allowing treatment that utilizes the addition of liquid as part of BDAT treatment in designated areas within containment buildings. Any drainage or accumulation of liquids applied to hazardous debris must comply with relevant regulations. EPA is requiring that liquids be removed from the containment building at the earliest practicable time in order to preserve the effectiveness of liquid containment systems (Sec. 264.1101(b)(2)(ii) and Sec. 265.1101(b)(2)(ii)).

c. Design and Operating Standards. EPA is promulgating the following design and operating standards for permitted units, units operated under interim status, and units under the 90-day accumulation exemption. In general, the design and operating standards are intended to ensure containment of waste equivalent (or, with regard to air emissions superior) to the containment achieved by tanks. Thus, the units must be designed to contain releases to land through primary and in some cases secondary containment systems, and to contain potential particulate emissions as well. The unit is also to be designed to prevent exposure of waste to precipitation and wind. As noted above, EPA is determining that these units are not engaged in land disposal based on designs for this level of containment. Moreover, the design and operating standards should ensure protection of human health and the environment (as do the tank standards).

Thus, to distinguish these units from waste piles--i.e., land disposal units--hazardous wastes managed in these units must be fully contained within the unit. As such, the unit must be completely enclosed with a floor, walls and a roof to prevent exposure to precipitation and wind (Sec. 264.1101(a)(1) and Sec. 265.1101(a)(1)). Many of the hazardous wastes currently managed in these waste piles may have significant volumes of fine particulates. EPA believes that enclosure within a structure, in conjunction with other measures to control fugitive dust emissions, will prevent the escape of these fine particulates from the unit. Although a number of commenters to the proposed rule did not believe complete enclosure to be necessary, EPA continues to regard this as key to ensuring

complete containment of wastes managed in these units, and thus distinguishing these units from land disposal units such as piles.

i. Floors, Walls, and Roof. The floor, walls, and roof of the unit must be constructed of man-made materials with sufficient structural strength to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit. Fragile barriers that would not withstand repeated contact with handling equipment used in the unit thus are not suitable, and units designed with such ineffective barriers would not be containment buildings. Operating events such as deliberate or accidental placement of materials against containment walls must be taken into account in designing and constructing the unit. Factors such as settlement, frost- heave, and exposure to wind force must also be considered. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. Because the intended use for these units is short-term storage or treatment, the unit must be designed to accommodate appropriate levels of loading and unloading activity during its operating lifetime. (See Sec.
264.1101(a)(2) and Sec. 265.1101(a)(2).)

ii. Primary and Secondary Containment. EPA is requiring several measures to ensure that hazardous wastes are managed in a fashion that ensures containment of contaminants and prevents releases into the environment. All containment buildings must be equipped with a primary barrier designed and constructed of materials to prevent hazardous wastes from being accidentally or deliberately placed on the land beneath or outside the unit. The design and construction of the primary barrier will vary depending on the type of waste to be managed in the unit. For containment buildings used to manage wastes without free liquids, the primary barrier may be a concrete floor if the wastes to be managed will not migrate into the concrete matrix.

Containment buildings used to manage wastes with even small amounts of free liquids must be provided with a primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier and a liquid collection and removal system that will minimize the accumulation of liquid on the primary barrier (Sec. 264.1101(b)(2) and Sec. 265.1101(b)(2)).

In this case, the primary barrier might be a steel or flexible membrane liner covered by a concrete wear surface. The liquid collection and removal system above the primary barrier should be designed, constructed, and operated to minimize the accumulation of liquids above the primary barrier. EPA expects that a minimum one degree slope for the primary barrier combined with appropriate means for collecting and removing liquids (e.g. troughs, drains, dikes, or sumps and/or pumps as necessary) will meet this goal. The determination of the presence of free liquids must be made using, for example, the paint filter test (EPA test method SW-86) if applicable, a visual examinations, or other appropriate means.

The primary barrier must be sloped to drain liquids or other wastes to the collection system, and to ensure that liquids are not released into any portions of the unit that are not provided with secondary containment. This latter requirement for separation between "wet" and "dry" areas of a containment building is discussed below in greater detail.

In all cases, the primary barrier must be designed to withstand the movement of personnel, wastes, and handling equipment in the unit. (See Sec.
264.1101(a)(4) and Sec. 265.1101(a)(4).) By this, EPA means that coatings or membranes that might be exposed to abrasion or tearing by personnel,

wastes, or equipment must be sufficiently durable to withstand that activity, be protected from it, or be scheduled for replacement on a regular basis as needed as part of the design of the unit. The primary barrier must be maintained to be free of cracks, gaps, corrosion, or other deterioration that could result in the significant release of hazardous waste.

Portions of containment buildings used to manage hazardous wastes containing free liquids must, in addition, be provided with secondary containment systems including (1) a secondary barrier and (2) a leak detection system. The secondary barrier must be designed and constructed of materials to prevent the migration of hazardous constituents into this barrier. The leak detection system, which lies below the primary barrier and above the secondary barrier, must be capable of detecting, collecting, and removing leaks of hazardous constituents through the primary barrier at the earliest practicable time. In keeping with the design standards for liners and leak detection systems (57 FR 3462), this may be achieved by installation of a system that is, at a minimum: (1) Constructed with a bottom slope of 1 percent or more; and (2) constructed of a granular drainage material with a hydraulic conductivity of 1x10-2 cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3x10-5 m2/sec or more. The secondary containment system must be constructed of materials that are chemically resistant to the waste managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building.

If only portions of a containment building are equipped with secondary containment, then "dry" areas (those without secondary containment) and "wet" areas (those areas with secondary containment) must be hydraulically separate. By this, EPA means that the containment building must be designed and operated so that liquids managed in "wet" areas are prevented from draining into "dry" areas by measures such as dikes, walls, trenches, differences in grade, etc. (See Sec. 264.1101(b)(3)(i) and Sec. 265.1101(b)(3)(i).) Wastes entering a "dry" area of the containment building, from a "wet" area of the unit must not contain more than de minimis amounts of free liquids (and a paint filter or equivalent test could be passed, if the physical form of the material would allow such a test to be performed).

In addition, today's rule clarifies that treatment of hazardous wastes within containment buildings may involve the addition of free liquids. As with any "wet" containment building areas, portions of containment buildings where wastes are treated with liquids must meet design standards that the Agency is promulgating today and that are equivalent to those applicable to tanks. These areas thus must be designed to prevent any release of liquids, wet materials, or liquid aerosols to other portions of the unit. In particular, treatment technologies involving liquids under high pressure such as high pressure washing must be restricted to dedicated cells or areas within the containment buildings designed and operated to prevent such releases. Barriers to such releases should be designed and constructed to be appropriate to the nature of the physical and chemical nature of the treatment to be performed, and should ensure proper control of wastes and moisture throughout the operating life of the unit. EPA notes that use of a number of treatment technologies including technologies specified elsewhere in today's rule may require barriers to movement of

moisture into unit walls equivalent to those generally required to prevent migration of hazardous constituents into the primary barrier.

For example, soil washing may be conducted in a treatment area of the containment building. After treatment, the soil is allowed to drain. While significant quantities of free liquid remain, the soil must be managed in "wet" areas with secondary containment. When only de minimis quantities free liquids remain the materials may be managed in "dry" areas without secondary containment.

EPA recommends, but is not requiring, that owner/operators of containment buildings consider providing the entire unit with secondary containment in order to guard against contaminant releases and their associated costs in the event of operator error, equipment failure, or other unanticipated circumstance.

EPA believes containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of Sec. 264.193(d)(1), i.e. that it is designed and operated to contain 100 percent of the capacity of the largest tank within its boundary, designed and operated to prevent run-on or infiltration of precipitation into the secondary containment system, free of cracks or gaps, and designed and installed to surround the tank completely and to cover all surrounding areas likely to come into contact with the waste. In addition, the containment building must meet the requirements of Sec. 264.193(b) and Sec. 264.193(c)(1) and (2) to be considered an acceptable secondary containment system for a tank.

iii. Waiver from and Delay of Compliance with Secondary Containment. Under today's rule, the Regional Administrator has the discretion to waive the secondary containment requirement for containment buildings or areas of containment buildings where the only liquids to be used in the unit are liquids that will be used to control dust or to otherwise protect worker health and safety in accordance with OSHA requirements. Thus, in some cases, the Regional Administrator may determine on a case-by-case basis that secondary containment is not necessary where liquids are used in this fashion. For 90-day units where owner/operators wish to use liquids to control dust or otherwise protect worker health and safety and do not believe that secondary containment is necessary, the owner or operator must make a demonstration that the use of liquids in such a manner will not result in the release of contaminants and have a professional engineer certify to the fact.

EPA is also allowing the option of a delayed compliance date for the secondary containment requirement. Existing units converting to containment buildings and which are equipped with a primary barrier and a liquid collection system may be granted up to a two-year delay for compliance with the secondary containment requirement if these units substantially meet all other standards spelled out in today's rule. This may be the case for some existing buildings currently surpassing the design requirements applicable to indoor waste piles but not having secondary containment.

To avail themselves of this extension, owner/operators must provide a written request to the Regional Administrator by February 18, 1993. This request must include a description of the unit and its operating practices with special reference to the design and performance of any existing

barrier layer(s), liquid collection and removal systems. Existing data and/or reports on materials, permeability, and drainage characteristics must be included, together with existing available quality assurance data on how the existing unit was constructed. It must describe specific plans including a schedule for retrofitting these units to meet the standards promulgated today.

The Regional Administrator will review this plan, and approve or provide comments. If owner/operators receive comments from the Regional Administrator, they will have 30 days to revise their submissions and respond to comments. The Regional Administrator will review the revised submission, and decide whether to grant up to a 2-year delay for secondary containment and may specify conditions for its approval. This decision will be based on whether the Regional Administrator has confidence that substantially meets the other standards in the rule, so that the unit will not release contaminants to the land prior to the required retrofit.

iv. Height of Waste in Unit. Another measure to ensure containment of hazardous waste managed in these units is today's requirement that the level of the waste inside the unit cannot exceed the height of the containment walls intended to come in contact with the hazardous waste. (See Sec. 264.1101(c)(1)(ii) and Sec. 265.1101(c)(1)(ii).) EPA considers it a necessary good housekeeping practice to prevent stored/treated hazardous waste from spilling over the walls of the unit and, in the case of certain hazardous wastes, to be able to contain any potential "landsliding" of material out of the unit. It is important to note that the walls referred to in this provision are those containment walls, or parts thereof, designed and constructed to be in contact with the hazardous waste and to support its weight. The following example highlights this distinction.

Example: A facility has constructed a containment building to accumulate its hazardous waste prior to conducting treatment to meet LDR standards. The unit has a reinforced concrete floor and 10-foot high reinforced concrete walls. The remainder of the sidewalls, built atop the concrete wall and extending to the roof, are constructed of steel framing with fiberglass panels. In this example, the hazardous waste stored/treated inside the unit must not be piled any higher than the 10-foot reinforced concrete walls. The remainder or upper portion of the walls are not designed to support the weight of the waste and may not provide adequate containment of the waste in the event of an unexpected shift in the position of a portion of the waste, i.e., hazardous waste could escape through the panel joints.

A number of commenters to the proposed rule had concerns with the prohibition on piling wastes above the height of the walls intended to contain them, noting correctly that many wastes can be formed into conical piles extending substantially above the height of walls which may be supporting a portion of their weight. EPA's reason for including this requirement is to assure that there was no possibility of accidentally overtopping the containment walls. Accordingly, today's rule retains this requirement. EPA notes, however, that this requirement is intended to apply only to those walls that could come into contact with the waste and are intended to contain the waste. The examples below clarify EPA's intent.

Example: If waste is stored in a room within the containment building, where the interior walls, i.e., the walls of that room, are designed to

support and/or contain hazardous wastes, those walls must meet the standards for containment walls. Exterior walls that could not come into contact with the waste would not have to meet those requirements in this case.

Example: If waste is stored in "stalls" within the containment building, where the walls that define the stalls are not designed and constructed to meet the requirements for containment walls, then the exterior walls must do so. Note, however, if the stalls are intended to separate wet and dry areas or to document that wastes are accumulated for less than 90 days, the stalls must be constructed to fulfill their function under normal operating conditions.

v. Standards for Doors and Other Openings. A related set of issues in the proposed rule refers to specifications for door and other wall openings used for equipment and personnel. EPA proposed that these doors and openings should be capable of providing the same level of structural support and containment as the rest of the wall, and invited public comment on specific standards for doors and openings that are part of a wall otherwise providing support and containment of hazardous waste managed within a containment building.

Today's rule departs somewhat from the proposed rule on these issues. In response to many public comments, EPA is clarifying that doors and other openings do not necessarily need to meet the same structural standards as walls. Depending on the nature of the wastes and the operations to be carried out in a particular unit, a relatively light-weight door may be adequate if: (1) It provides an effective barrier that controls fugitive dust emissions from the unit to meet the no visible emissions standard (see Sec.

264.1101(c)(1)(iv) and Sec. 265.1101(c)(1)(iv)), and (2) the unit is designed and operated in a fashion that assures that wastes will not actually come in contact with the door. This latter requirement could be satisfied, in many cases, by a set-back of wastes stored in the unit. As noted above, these requirements may be satisfied by either interior or exterior walls, subject to constraints posed by the way the waste is managed.

vi. Measures to Prevent Tracking. EPA believes routine handling of hazardous waste within many of these units demands the frequent, if not constant, presence of personnel and handling equipment, e.g., front-end loaders, cranes. As such, particularly when the hazardous waste includes small particulates or where handling of the hazardous waste generates dust, the potential for tracking hazardous waste out of the unit may be significant. Therefore, EPA is requiring that the owner/operator ensure the containment of hazardous waste within the unit with appropriate measures to prevent this. (See Sec. 264.1101(c)(1)(iii) and Sec. 265.1101(c)(1)(iii).) Wash-down of vehicles and equipment prior to exiting the unit and dedicating vehicles and equipment for the sole purpose of operating within the unit are examples of measures that owners/operators of these units could take when the potential exists for tracking of hazardous waste out of the unit. In addition, owner/operators must prevent tracking of water or wet materials from "wet" areas to "dry" areas.

vii. Control of Fugitive Dust Emissions. Because of the dusty nature of many of the hazardous wastes that may be managed in these units and the dusty conditions that can be caused by the handling of these wastes within the unit, EPA also is requiring that owner/operators control fugitive dust

emissions during normal operating conditions. (See Sec. 264.1101(c)(1)(iv) and Sec. 265.1101(c)(1)(iv).) EPA has revised these requirements from the proposed rule based on extensive public comment. Today's rule provides substantial additional flexibility to owner/operators in how they may achieve the required degree of control. However, EPA is also specifying the standard more rigorously, and clarifying the presumption that owner/operators must install and operate systems to control fugitive dust emissions unless they can demonstrate that the wastes to be managed in the unit will not release significant amounts of fine particulates from the building as they are handled or treated.

The proposed rule required a system whereby a negative pressure was maintained within the unit and particulates collected, e.g., by fabric filter or electrostatic precipitator. In response to public comments, today's rule provides greater flexibility in controlling fugitive dust, but more specificity in the degree of control that must be attained.

The final rule requires that there be no visible emissions through any unit openings. This state of no visible emissions must be maintained effectively at all times during routine and operating and maintenance conditions, including when vehicles and personnel are entering and exiting the containment building. This standard is based on current standards required by EPA's Air Office. A test method found in 40 CFR part 60 appendix A, Method 22--Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares--can be used to determine compliance with the no visible emissions requirement. It is a timed method where an observer, using a stopwatch, determines if for a given period of time a source has visible emissions. If used to meet these standards, negative pressure dust control systems should assure that the air flow through openings such as windows and doors is inward at all times. All dust control systems must be operated and maintained in accordance with sound air pollution control practices (these practices are described in more detail in 40 CFR part 60, subpart 292).

Techniques other than the maintenance of negative pressure may be utilized where they can be shown to maintain no visible emissions from openings in the unit. The owner or operator of a containment building is required to maintain control of fugitive dust emissions such that any unit openings (e.g., doors, windows, seams, vents, cracks, etc.) exhibit no visible emissions outside the containment building. Compliance with this requirement may include such measures as double door (airlock-type) entry designs. All units must have the certification of a professional engineer that any dust control system is designed to achieve the no visible emissions standard.

Notwithstanding any other requirements of subpart DD of parts 264 and 265, if the method of controlling fugitive dust emissions includes the application of liquids, the Regional Administrator has the discretion to waive the secondary containment requirement for containment buildings or areas of containment buildings where liquids will be used to control dust or to otherwise protect worker health and safety in accordance with OSHA requirements. (See Sec. 264.1101(e) and Sec. 265.1101(e).) EPA notes that the application of free liquids alone may not be sufficient to control fugitive dust emissions.

viii. Inspection Plan. To ensure the unit is operating as designed, EPA is requiring all owner/operators to have an inspection plan for all

containment buildings that establishes an inspection program that ensures maintenance of the structural integrity of the unit and prompt detection of any leaks or releases to the air, ground, or water. EPA is requiring an inspection schedule for these units whereby, at least every seven days, monitoring/leak detection equipment, the containment building, and the area surrounding the containment building is checked to ensure the unit is being properly operated and that no leaks/releases have occurred to the air, ground, or water. (See Sec. 264.1101(c)(4) and Sec. 265.1101(c)(4).) This is consistent with the existing inspection requirements for drip pads and for liner and leak detection systems. These observations must be recorded in the facility's operating record. In the event that a condition is detected that has led or could lead to a release of hazardous waste, the owner or operator must repair the condition within a reasonably prompt time following discovery in accordance with the standard procedures for similar units. (See Sec.
264.1101(c)(3) and Sec. 265.1101(c)(3).)

In response to comments on these inspection requirements, EPA points out in today's rule that these weekly inspections need not be unduly burdensome.

Electronic monitoring of liquid in secondary containment systems or of air pressure differentials between the inside and outside of a containment building are examples of relatively cost-effective monitoring techniques.

ix. Engineering Certification. In the proposed rule, EPA identified that it was considering but was not proposing a requirement for written certification by an independent registered professional engineer (e.g., one who is not an employee of the company, or of its parent or subsidiary.) The benefit of such a certification would be to ensure that any new or existing containment building is designed and constructed with sufficient structural integrity to safely manage and contain the hazardous waste. Public comment was divided on the appropriateness of requiring independent certification. EPA has decided not to require that this certification be made by an independent professional engineer. Since professional engineers are certified and licensed by States and thus have a substantial incentive to maintain their professional reputation, a professional engineer must certify that the containment building has been designed with sufficient structural integrity and is acceptable for storing and treating hazardous waste according to the standards specified by EPA. The assessment must show that the foundation, structural support, primary barrier, secondary containment system (where required), fugitive dust control system, and leak detection system are designed to meet today's standards and that the containment building has sufficient structural strength and compatibility with the waste to be stored or treated. (See Sec. 264.1101(c)(2) and Sec. 265.1101(c)(2).)

x. Temporary Containment Buildings. Finally, EPA is aware that in situations such as hazardous waste site remediation efforts, appropriately designed and operated containment buildings could serve to enhance the performance of bioremediation treatment technologies. It may not always be appropriate for containment buildings intended for temporary use to be constructed or operated in exactly the fashion outlined in today's rule. EPA plans to address temporary containment buildings in a future rulemaking.

d. Closure Requirements. Today's rule promulgates requirements for closure of containment buildings that are consistent with the closure requirements that apply to waste piles (Secs. 264.258 and 265.258) and tanks (Secs.
264.197 and 265.197). At closure, owners or operators of both permitted

and 90-day containment buildings will be required to clean close the units by removing all hazardous waste from the containment building and by removing or decontaminating all hazardous waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and managing them in accordance with the Subtitle C regulations.

If the unit containment building cannot be clean closed, the unit must satisfy the requirements for closure that apply to landfills under Sec. 264.310 or 265.310. For a discussion of the requirements for clean closure and the "remove or decontaminate" standard, see 52 FR 8504, March 19, 1987.

Owner/operators of interim status waste piles who wish to convert these units to interim status containment buildings need not necessarily clean close their units prior to conversion; closure requirements applicable to these units may be deferred until closure of the containment building.

5. Revised Definition of Pile

EPA today is revising the regulatory definition of pile to exclude containment buildings. Specifically, EPA is revising the definition of "pile" to explicitly exclude containment buildings that accumulate or treat prohibited wastes under the proposed requirements of Parts 264 and 265.

Although EPA has previously classified all roofed structures used to manage dry wastes as indoor waste piles, EPA believes that there are distinctions between indoor waste piles that constitute land placement and containment buildings.

Most commenters generally supported these changes as proposed, although a limited number of commenters suggested that EPA revise the definitions of "pile" and "tank" more extensively. EPA may refine those definitions further in separate action at a later date, but EPA believes that the definitions in today's rule (which are substantially similar to those in the proposed rule) identify the distinctions between the various types of units with sufficient clarity to indicate which are land disposal and which aren't.

Under existing Sec. 264.250, indoor waste piles are required to exclude liquids or material containing free liquids, be protected from surface water run-on, control dispersal of waste by means other than wetting, and not generate leachate through decomposition or other reactions. In contrast, the containment building design and operating standards provide a higher level of containment and are in many ways comparable to RCRA tanks--that is, the hazardous waste is contained during storage or treatment. For example, containment buildings must be fully enclosed, have weight-bearing walls and floor systems designed and constructed of materials to prevent migration of hazardous constituents, be equipped with a secondary containment system in areas where the hazardous waste contains significant quantities of free liquids, and be provided with fugitive dust emission controls. Whereas containment buildings are designed to manage moisture associated with non- liquid wastes, indoor waste piles are precluded from including any water whatsoever.

6. Amendment of Sec. 268.50 Storage Prohibition and Permit Requirements

Under existing Sec. 268.50, the storage of hazardous wastes prohibited

from land disposal is also prohibited unless, among other requirements, the waste is stored in tanks or containers on site solely for the purpose of the accumulation of such quantities of hazardous waste as are necessary to facilitate recovery, treatment, or disposal. At the time EPA adopted this provision, tanks and containers were the only types of storage units that did not also involve land disposal. Under today's rule, there will also be other types of storage units (i.e., containment buildings, subpart X storage units) not involving land disposal. There may also be other types of miscellaneous storage units in the future, which units would be regulated under subpart X.

EPA is thus promulgating this rule to conform Sec. 268.50 to include these units.

7. Amendments to the Permit Modification Procedures in Sec. 270.42

Today's rule also amends appendix I of Sec. 270.42 by adding section M which will classify permit modifications involving containment buildings. In addition, today's rule amends the modifications for waste piles by adding an item which classifies a modification to a waste pile to meet the standards for a containment building as a Class 2 modification. EPA believes that many facilities will make modifications to their permitted waste piles to meet the standards for containment buildings. For more information on these permit modification procedures, see 53 FR 37912, September 28, 1988.

EPA is also amending section I of appendix I of Sec. 270.42 to add item I.6, which allows permitted facilities to convert existing waste piles to containment buildings by submitting a Class 2 modification to the Agency. EPA believes that the public should have the opportunity to comment on the modification request, which the Class 2 procedures provide. However, EPA believes that this modification is not significant enough to warrant the Class 3 procedures because the unit is an existing unit, and the technical standards are more stringent for containment buildings than for waste piles.

Some of the hazardous debris treatment processes that were proposed as BDAT under Sec. 268.45 would take place in units that EPA proposed to define as containment buildings. To assist in the development of treatment capacity by permitted facilities to meet the requirements of this rule, the Agency proposed to change the criteria that must be met to grant a temporary authorization. The existing regulation at Sec. 270.42(e)(3)(ii)(B) allows approval of the request if the activity is necessary to treat or store restricted wastes in tanks or containers in accordance with part 268. Today's rule amends these criteria to include the treatment or storage of hazardous debris in containment buildings meeting the requirements in proposed subpart DD, parts 264 and 265.

8. Amendments to the Change During Interim Status Procedures in Sec. 270.72

Section 270.72(b)(6) lifts the reconstruction limit for changes to treat or store in tanks and containers hazardous waste subject to land disposal restrictions imposed by part 268, provided that such changes are made solely for the purpose of complying with part 268. EPA believes that this change should also apply to treatment or storage of hazardous wastes in containment buildings. Today's rule amends Sec. 270.72(b)(6) to make

treatment or storage in containment buildings as regulated under subpart DD, parts 264 and 265, exempt from the reconstruction limit.

9. Amendment of Sec. 268.7 Waste Analysis and Recordkeeping Requirements

Today's rule amends Sec. 268.7 Waste Analysis and Recordkeeping requirements to include the management or treatment of prohibited waste in containment buildings.

10. Revision of Sec. 260.10 Definition of Miscellaneous Unit

Today's rule also makes a conforming change to the Sec. 260.10 definition of a miscellaneous unit by excluding containment buildings from that definition.

H. Retrofitting Surface Impoundments Under Land Disposal Restrictions

1. Regulatory Background

On February 4, 1992, EPA proposed a rule reconciling apparent conflicts in statutory language regarding surface impoundments receiving newly identified and listed prohibited hazardous wastes that have not been treated to meet a treatment standard (57 FR 4170). EPA is taking final action on that proposal in this FR Notice because the issue is relevant to wastes (particularly F037/F038) for which standards are being adopted today. (EPA also discussed this issue in the proposal to this rule at 57 FR 999-1000.)

a. Issue. EPA has identified a conflict in the Resource Conservation and Recovery Act (RCRA) concerning the deadline by which surface impoundments managing wastes that are both newly identified or listed as hazardous (i.e., identified or listed after the date of enactment of HSWA) and prohibited from land disposal must come into compliance with the minimum technological requirements (MTRs) of section 3004 (o)(1)(A) and 3005(j)(1). The MTRs require surface impoundments to have a double liner with a leak detection system, and a ground-water monitoring system./1/ In a typical situation, an impoundment will be receiving a hazardous, prohibited wastewater or generating a hazardous, prohibited sludge in the impoundment. These wastes typically will not meet treatment standards when placed in impoundments. The statutory conflict arises because one set of provisions states that impoundments can receive untreated prohibited wastes only if they meet MTRs.

Moreover, it is assumed that the lack of MTR impoundments creates a shortage of treatment capacity, justifying a variance. A further potential problem exists because normally only MTR impoundments are allowed to receive restricted wastes subject to capacity variances. On the other hand, a different statutory provision allows impoundments up to four years to achieve compliance with MTRs (or to close). The conflict arises if the LDR prohibitions come into play before this four-year period expires.

NOTE /1/ EPA has stated that land disposal facilities newly regulated under subtitle C of RCRA as a result of a newly identified or listed hazardous waste must install a ground-water monitoring system within one year of the effective date of the listing or characteristic rule (55 FR

39409, September 27, 1990). This deadline will not change as a result of this final rule.

We now describe the relevant statutory provisions in more detail. Section 3005(j)(6) allows a four-year compliance period for meeting the surface impoundment MTRs after the promulgation of additional listings or characteristics of hazardous waste. At the end of the four-year period, the impoundment must either meet MTRs or cease receiving, treating, or storing hazardous waste (referred to as "closing" in this discussion). (Thus impoundments newly in the system are given the same four years to retrofit or close that existing impoundments receive. Section 3005(j)(1).) Congress thus acknowledged that retrofitting or closure is not a quick process, but rather one that requires time, thus tempering the need to protect the environment with an acknowledgement that there must be a reasonable period for changing operations./2/

NOTE /2/ Section 3005(j) is actually a series of deadlines connected with the retrofitting of surface impoundments. For those units that undoubtedly have to retrofit, the time period is four years, while those that may qualify for variances are subject to interim deadlines for application and action on the variance request, and then a period, if the variance is denied, to retrofit within the time remaining in the four-year period. There are also retrofit deadlines for units initially granted variances, but later found to be leaking. These units are given shorter periods (two or three years depending on the variance), but this is appropriate where there is an actual leak.

Section 3004(g)(4) requires EPA to prohibit newly identified or listed hazardous wastes from land disposal (i.e., promulgate treatment standards for all such wastes not disposed in no migration units) within six months of the date of the new listing or characteristic. Section 3004(h)(4), which also deals with land disposal restrictions, states that during a national capacity variance (which EPA issues if sufficient treatment capacity is unavailable nationwide) or case-by-case extension period (for individual facilities demonstrating that they are unable to find existing treatment but have a binding contractual commitment to provide treatment capacity), wastes not meeting the treatment standards may be placed in a surface impoundment only if the impoundment is in compliance with the MTRs./3/ Mobil Oil Corp. v. EPA, 871 F.2d 149 (D.C. Cir. 1989). Finally, section 3005(j)(11) states that only surface impoundments meeting MTRs, and that are dredged annually, may receive prohibited wastes that have not yet met a treatment standard.

NOTE /3/ RCRA sections 3004(h)(2) and 3004(h)(3) restrict the duration of national capacity variances and case-by-case extensions to a maximum of four years. If capacity becomes available sooner, it must be used.

As noted above, these provisions raise two sources of potential conflict. The first is how long non-MTR impoundments can continue to receive prohibited wastes (i.e., wastes not meeting a treatment standard and for which there is no capacity variance). Section 3005(j)(6) indicates four years while section 3005(j)(11) does not allow it. A second conflict occurs for impoundments managing wastes granted a national capacity variance or

case-by-case extension when treatment standards are promulgated, because it is unclear whether surface impoundments must be in compliance with the MTRs at that time (per section 3004(h)(4)) or four years after the promulgation of the new listing or characteristic.

b. History. This conflict was not apparent when Congress enacted the Hazardous and Solid Waste Amendments of 1984 (HSWA) or when EPA first implemented the land disposal restrictions, even though the earliest land disposal restrictions dates (24 months from the enactment of HSWA for solvents and dioxins and 36 months for the California list wastes) would appear to cut short the November 8, 1988 retrofit deadline (four years after HSWA enactment) for interim status surface impoundments if they received wastes for which EPA granted a capacity variance. The issue did not arise because EPA interpreted section 3004(h) differently at that time; rather than requiring an individual unit receiving restricted waste to meet the MTRs, EPA required only those units within the same facility that were otherwise subject to the MTRs to be in compliance. As a practical matter, that meant that only new, replacement, or expansion units had to meet the MTRs.

In the August 17, 1988 rule promulgating the land disposal restrictions for the First Third Scheduled Wastes (53 FR 31138), EPA changed its interpretation to require individual units to comply with the MTRs. That reinterpretation became effective four years after the enactment of HSWA and was upheld in Mobil Oil Corp. v. EPA, 871 F.2d 149 (D.C. Cir. 1989). There was no conflict at that time because the four-year retrofitting period ended at the same time that the revised interpretation took effect.

The conflict was mentioned in the Third Third proposal (54 FR 48499, November 22, 1989), which stated that if EPA issues a capacity variance for newly identified or listed hazardous wastes, it would have to reconcile the differences in sections 3005(j)(6) and 3004(h)(4). (The notice did not allude to potential conflicts with section 3005(j)(11) because it was assumed that the lack of MTR impoundments would give rise to circumstances justifying capacity variances, triggering the potential conflict with section 3004(h)(4).) Several commenters responded to this issue. Some stated that section 3005(j)(6) explicitly afforded four years to retrofit surface impoundments newly brought under subtitle C regulation. Another commented that the four years provided to retrofit surface impoundments managing regulated mineral processing wastes may not be adequate, and that the schedule should be determined site-specifically.

Others disagreed, however, that a conflict exists between sections 3004(h)(4) and 3005(j)(6). They argued that: (1) EPA's interpretation of section 3004(h)(4), rather than any inherent flaw in the statute, led to the apparent "conflict," and (2) the general language of section 3004(h)(4) cannot override the specific language of section 3005(j)(6), wherein the issue of newly identified or listed hazardous waste is addressed directly. EPA did not resolve this issue in the final Third Third land disposal restrictions rule, but rather left it for later resolution. EPA is taking this opportunity to resolve the conflict.

2. Agency Interpretation

a. How long can impoundments continue to be used to receive or generate newly identified or listed hazardous wastes? The first set of provisions

potentially in conflict are 3005(j)(6) and 3005(j)(11). As noted above, one provision allows four years to retrofit or close an impoundment, the other says that only MTR impoundments can receive prohibited wastes not meeting a treatment standard. Once EPA promulgates a treatment standard, the question is whether a non-MTR impoundment can receive prohibited wastewaters, and continue to generate prohibited sludges, i.e., whether these wastes can continue to be land disposed (section 3004(k)) within the non-MTR impoundment, assuming, as is almost certain, that the wastes do not meet the treatment standard when they are disposed in the impoundment./4/

NOTE /4/ The Agency adheres to its consistently held view that wastes generated in surface impoundments are land disposed within the meaning of section 3004(k). The Land Disposal Restrictions for Solvents and Dioxins final rule, which laid the foundation for future Land Disposal Restriction rules, stated that "residuals that exceed the treatment standards must be removed at least annually from the time the waste is first placed in the impoundment" (51 FR 40601, Nov. 7, 1986). Hence, it presupposed that sludges generated in surface impoundments would be regulated by the rule. This presupposition is also apparent at 53 FR 17581, Aug. 17, 1988, and 54 FR 26598, June 23, 1989. Certainly, generation of a sludge in an impoundment fits the definition of land disposal in section 3004(k): "any placement of such hazardous waste in a * * * surface impoundment * * *" In addition, since sludges are virtually never generated outside of impoundments and then put into them, any construction that sludges generated in impoundments are not also disposed in them would result in the overwhelming majority of impoundments managing hazardous wastes being outside the scope of the land disposal restrictions. This would undermine a principal Congressional purpose, since impoundments are singled out as the most environmentally adverse form of hazardous waste management unit. See, e.g., RCRA section 1002(b)(7); CMA v. EPA, 9 F.2d 158 (D.C. Cir. 1990). EPA has consistently taken into account the volumes of sludges generated in surface impoundments in the capacity determinations required for RCRA section 3004(h) (53 FR 17607, May 17, 1988; 53 FR 31191, Aug. 17, 1988; 54 FR 26636, June 23, 1989; 54 FR 48471, Nov. 22, 1989; and 55 FR 22632, June 1, 1990).

As noted below, the same question arises if one assumes that lack of existence of MTR impoundments triggers capacity variances, because Sec. 268.5(h) (codifying section 3004(h) (4)) indicates that only MTR impoundments are eligible to receive the restricted wastes subject to the variance (assuming impoundments disposal).

EPA believes that this set of provisions is in conflict, since any other reading means that Congress gave a four-year window for continued non-MTR impoundment use with one hand, and snatched it away with the other by means of section 3005(j)(11)./5/ The Agency is resolving this conflict by allowing interim status surface impoundments a four-year period (from the effective date of the waste identification or listing) to continue using the impoundment to receive prohibited wastewaters and generate prohibited sludges. This allows the period Congress appeared to deem typically necessary to close or retrofit an impoundment (see also section 3005(j)(1) where Congress provided the same four-year period for impoundments managing wastes identified or listed as hazardous on the date of enactment of the 1984 amendments).

NOTE /5/ The Agency does not believe it fruitful to argue about which provision is more specific. One is more specific with regard to dealing with newly listed waste, but the other is more specific in addressing the relationship of impoundments and the land disposal restriction provisions.

Although Congress' goal is not to put untreated wastes into non-MTR-compliant surface impoundments, it recognized that MTR compliance cannot be achieved immediately. Although the legislative history does not expressly articulate it, the structure of section 3005(j) shows that Congress thought that the goal of environmental protection (served by retrofitting) needed to be balanced against the goal of avoiding sudden disruptions and capacity losses in waste treatment and disposal that a six-month deadline could cause.
Congress felt that four years struck an appropriate balance.

Although EPA recognizes that not all impoundments will take four years to close or retrofit (see 57 FR at 4173-74 (Feb. 4, 1992)), an interpretation that would allow EPA to review individual determinations of whether a full four-year period is needed to close or retrofit (for example, through review of applications for case-by-case capacity extensions) appears unduly disruptive of plant waste management determinations (i.e., EPA or State officials second-guessing determinations of the necessary length of time to close or retrofit), and wasteful of Agency resources as well. In addition, Congress indicated that a four-year window was appropriate. Thus, the Agency is interpreting these provisions to state that non-MTR impoundments can remain operating for four years after the effective date of the waste identification or listing notwithstanding that they are receiving prohibited waste not meeting a treatment standard./6/

NOTE /6/ As noted above, another way of viewing this question is to say that the conditions for some form of treatment capacity variance are satisfied because even if treatment capacity exists outside the surface impoundment, wastes must continue to be land disposed in the impoundment for some period of time while the impoundment is closed or retrofitted. EPA would give the same answer (i.e., four years of continued use) if the question were conceptualized in terms of capacity variances.

This same potential conflict is raised in duplicative fashion during the period of a national or case-by-case capacity variance. Not only is there the conflict with section 3005(j)(11) as discussed above, but a conflict with section 3004(h)(4) as well, since under that provision (as implemented in section 268.5(h)) only MTR impoundments can receive wastes during the period of a capacity variance. EPA is resolving this conflict by allowing a four- year retrofit period for the same reasons given above. Thus, the Agency reads section 3005(j)(6) as an exception to the general rule of section 3004(h)(4) (and 3005(j)(11)); that is, surface impoundments newly brought into the subtitle C system by a new listing or characteristic have four years to retrofit even if they receive wastes subject to a national capacity variance or case-by-case extension. However, EPA notes that the potential conflict between statutory provisions exists whether or not treatment capacity exists outside of the surface impoundment (see fn. 6)./7/

NOTE /7/ Of course, prohibited sludges generated outside of impoundments could not be managed in a non-MTR impoundment in any case. If treatment

capacity is available for such sludges, it must be utilized. If treatment capacity is unavailable (i.e., there is a capacity variance in place for such wastes), the wastes must be disposed in an MTR landfill, or impoundment, or some other type of land disposal units such as land treatment (Sec.
268.5(h)).

b. Resolution where treatment capacity exists outside the surface impoundment. If treatment capacity exists outside the surface impoundment, however, a further issue exists with respect to sludges generated within a surface impoundment, since these sludges can be removed for treatment elsewhere. In the January 9, 1992 proposed rule, the Agency proposed to resolve these issues by requiring annual dredging of F037 and F038 sludges, plus requiring clean closure of the unit (assuming the unit would be closed rather than retrofitted). The proposal was premised on the logic that if retrofitted impoundments receiving wastes not meeting a treatment standards had to be dredged annually (because of section 3005(j)(11)), unretrofitted impoundments should be subject to the same standard if there was a means of treating the waste being removed. The proposed clean closure requirement was based on the notion that if treatment capacity exists, it should be used in preference to disposal in a non-MTR impoundment. In the Feb. 4 proposal, EPA also noted a general principle of requiring use of treatment capacity for wastes in section 3005(j)(6) impoundments where such treatment capacity exists. (57 FR 4170.)

Commenters noted that aspects of the proposal did not necessarily make environmental sense. They noted that an annual dredging requirement was unlikely to provide significant environmental benefit because the impoundments were likely to be closed in a short time in any event, when some sludge removal was likely. Before closure, the impoundment would be monitored and subject to corrective action requirements. In addition, an annual dredging requirement could interfere with on-going use of the impoundment.

With respect to clean closure, commenters pointed out (correctly) that this would entail removal not only of accumulated sludges but subsurface contaminated soils as well which are not the focus of the treatment requirements, and that forcing clean closure could interfere with otherwise available and potentially more cost-effective types of closure options.

EPA finds many of these comments persuasive and believes that the following interpretation best resolves these issues. First, EPA is not interpreting these provisions as necessitating annual dredging of accumulated sludges.

Either the impoundment will close in a short time (no more than four years), or it will be retrofitted and become subject to the annual dredging requirement in section 3005(j)(11) (as implemented by Sec. 268.4(a)(2)(ii)).

If the impoundment closes, EPA is interpreting the provisions to allow closure with wastes in place (unless the unit operator chooses to clean close the impoundment). Thus, under this reading, continued use of the impoundment would be allowed during the four-year retrofit/closure period (as explained in section 1 above), use of the impoundment during that time would not be disrupted by a dredging requirement, and the impoundment would be allowed to close with wastes in place. These are the same options that were available to impoundments in 1984 managing wastes already identified or listed as hazardous.

3. Technical Analysis

a. Introduction. Owners or operators of surface impoundments managing newly listed or characteristic hazardous wastes have several options for complying with the minimum technological requirements. Facilities may retrofit the surface impoundments with liners and leak detection systems in compliance with the requirements of section 3004(o)(1)(A)(i). Alternatively, facilities may replace their treatment surface impoundments with wastewater treatment tanks regulated under the Clean Water Act or may opt to close the surface impoundments and send the waste off-site.

EPA believes that very few facilities managing newly regulated wastes in surface impoundments will choose to retrofit their impoundments. For example, the Chemical Manufacturers Association (CMA) conducted an informal survey of 582 chemical manufacturing facilities in the fall of 1989 to obtain information about the management of "non-hazardous wastes" in surface impoundments. Twenty-seven facilities reported that 85 surface impoundments would be newly regulated as a result of the Toxicity Characteristic rule (55 FR 11798, March 29, 1990); of these 85, only 9 would be retrofitted with liners and leak detection systems. Replacing surface impoundments with tank systems was the most frequently planned method of compliance for the respondents to this survey. Past experience also indicates that surface impoundment owners or operators are more likely to replace their surface impoundments with tank systems than to retrofit the impoundments. RCRA section 3005(j)(1) required surface impoundments that were in existence and that qualified for interim status on the date of enactment of HSWA to come into compliance with the MTRs by November 8, 1988. Most facilities with surface impoundments replaced their impoundments with tanks in response to this deadline. Less than five percent of these facilities actually retrofitted their surface impoundments.

To support today's rulemaking, EPA undertook an analysis to determine how much time is needed for owners or operators of newly regulated surface impoundments to comply with the MTRs either by replacing the impoundments with wastewater treatment tanks exempt from RCRA subtitle C standards, or by retrofitting the surface impoundments with liners and leak detection systems according to the requirements of section 3004(o)(1)(A)(i). EPA collected information from a variety of sources, including facilities that have implemented these practices in the past or plan to do so in the future (e.g., in response to the TC), tank manufacturers, and engineers. The results were summarized in the proposed rule (57 FR 4170), and are available in the background document./8/

NOTE /8/ It should be noted that the potential statutory conflict at issue in this rulemaking is most immediately relevant to wastes newly regulated as a result of the Toxicity Characteristic (TC) rule (55 FR 11798, March 29, 1990). According to the regulatory impact analysis for the TC, about 730,000,000 metric tons per year of wastewaters managed in surface impoundments at over 2,000 facilities are estimated to exhibit the TC (U.S. EPA, OSW. U.S. EPA Background Document. Toxicity Characteristic Regulatory Impact Analysis. Final Report. March 1990). This potential conflict will also arise with respect to all future newly identified or listed hazardous wastes; however, the TC rule is used as an example throughout this section.

4. Conclusion

EPA found that the time needed to comply with the MTRs varies considerably based on case-by-case factors (e.g., current waste management practices, land availability) and regional factors (e.g., climate). According to EPA's information sources, six months appears not to be enough time to either retrofit a surface impoundment or replace the impoundment with a wastewater treatment tank. Replacing a surface impoundment with a tank frequently takes two to four years, and retrofitting a surface impoundment frequently takes two to three years.

EPA believes that most interim status surface impoundments managing wastes newly identified or listed as hazardous will be able to comply with the surface impoundment MTRs within four years of the date promulgating the listing or characteristic. Thus, the four-year period allowed in section 3005(j)(6) is a reasonable period within which to come into compliance.

V. Detailed Discussion of Final Rule: Hazardous Debris

A. Overview

The Agency is today promulgating a final rule for the treatment of hazardous debris. Until today, debris destined for land disposal that was contaminated with a prohibited RCRA hazardous waste or that exhibited a prohibited RCRA hazardous characteristic was subject to the treatment standard for that listed waste or characteristic. See, e.g., 55 FR 22649 and RCRA sections 3004 (d)(3) and (e)(3). Although hazardous waste debris (as well as contaminated media) is subject to the LDR prohibitions, there is no requirement that it have the same treatment standards as the wastes with which it is contaminated. Indeed, because hazardous debris may be a matrix significantly different from the underlying prohibited waste, it is appropriate as a technical matter to determine whether different treatment standards were appropriate.

Today, EPA is promulgating treatment standards for hazardous debris prohibited from land disposal. Under today's rule, hazardous debris must be treated by specified technologies based on the type of debris and type of contaminant(s) present or, as an alternative, meet the LDRs for the specified prohibited listed or characteristic waste with which it is contaminated.

EPA has specified a number of BDAT technologies for hazardous debris, with the choice of technology left up to the generator and/or treater managing the waste. The technologies include widely used treatment methods. EPA thus believes that it is preserving in this rule as much flexibility for the treatment of hazardous debris as possible.

Prohibited hazardous debris is defined generally as solid material (that is not a process waste) having a particle size of 60 mm or larger and that is intended for land disposal and exhibits a prohibited characteristic of hazardous waste or that is contaminated with a prohibited listed hazardous waste. Hazardous debris must be treated by one of the specified treatment technologies for each "contaminant subject to treatment" defined as: (1) The BDAT constituents for the listed waste that are subject to land disposal restriction standards (as found in Sec. 268.41 and 268.43); and (2) the RCRA hazardous waste constituent(s) for which the hazardous debris fails the Extraction Procedure toxicity characteristic, in addition to any

other characteristic which causes the debris to be hazardous (i.e., ignitability, reactivity). As an alternative, the generator of the hazardous debris may choose to treat the hazardous debris to the existing waste-specific treatment standards for the waste contaminating the debris. However, in choosing this alternative, the generator or treater would be required to sample and analyze the treated debris to ensure compliance with the treatment standards prior to disposal in a Subtitle C land disposal unit.

To ensure effective treatment, the treatment unit would be required to meet performance standards or design and operating conditions specified in the rule. In addition, the treatment unit would generally be subject to the Part 264 and 265 standards for treatment facilities to ensure protection of human health and the environment.

The rule addresses not only the issue of when hazardous debris is sufficiently treated, but the further question of when it is a hazardous waste. Under the rule, treated hazardous debris would be excluded from the definition of hazardous waste provided that: (1) The debris is treated to the performance or design and operating standards by an extraction or destruction technology rather than an immobilization technology /9/; and (2) the treated debris does not exhibit a characteristic of hazardous waste. If an immobilization technology is used, the treated debris would not be automatically deemed a nonhazardous waste. In addition, the Agency could determine on a case-by-case basis under today's rule that debris no longer "contains" hazardous waste and is excluded from Subtitle 6 regulation.

NOTE /9/ In the Phase II land disposal restrictions rule, the Agency will reopen and request comment on the issue of whether immobilized debris should be excluded from Subtitle C regulation. (See discussion in Section V.D.2.)

Residuals generated by the treatment of hazardous debris are subject to the numerical treatment standards for the waste contaminating the debris.

B. Definitions of Debris and Hazardous Debris

1. Definition of Debris

EPA is today defining debris as solid material exceeding 60 mm (2.5 inch) particle size that is: (1) A manufactured object; or (2) plant or animal matter; or (3) natural geologic material (e.g., cobbles and boulders), except that any material for which a specific treatment standard is provided in Subpart D, part 268, is not debris./10/ A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection. Process residuals such as smelter slag and residues from the treatment of waste (e.g., incinerator ash), wastewater, sludges, or air emissions residues (e.g., collected particulate matter) are not debris. We discuss below that debris must be intended for discard (i.e., rather than continued use), that debris must be a solid material, the rationale for selecting a 60 mm particle size criterion for debris (i.e., as opposed to the 9.5 mm particle size proposed) and for applying the size criterion to all debris (i.e., not just to geologic materials as proposed), the

rationale for regulating as debris mixtures of primarily debris and other materials, the rationale for not regulating process residuals as debris, and the rationale for regulating nonempty containers as hazardous waste subject to existing LDRs rather than as debris.

NOTE /10/ For example, lead acid or cadmium batteries are not debris because they are subject to specific treatment standards under Sec. 268.42.

a. Debris Must Be Discarded or Intended for Discard. Debris must of course be either a solid waste or media (e.g., boulders) that is discarded or intended for discard to be subject to the treatment standards in today's rule. Those commenters on the proposed rule expressing concern that the proposed rule in some way vitiated (or was intended to vitiate) this basic principle were mistaken. This means that such materials that might at some later time become debris, such as equipment or building structures, but that are still in use are not subject to the treatment standards. Such in-use material is not a solid waste because it has not been discarded or intended for discard, as these terms are used in Sec. 261.33 (i.e., likely abandoned, as defined in Sec. 261.2 (a)(2)(i) and (b))
Media debris (e.g., boulders) is also not subject to regulation as solid waste unless discarded or intended for discard and so is not automatically subject to the treatment standards.

Once debris becomes a solid waste by virtue of being discarded (including media debris that becomes subject to regulation as solid waste by virtue of being discarded), it is not necessarily subject to the treatment standards. For example, contaminated debris that is not actively managed after the effective date of the prohibitions (i.e., the effective date of the LDRs for the hazardous waste contaminating the debris) would not be subject to the standards. See 53 FR 31148 (Aug. 17, 1988). On the other hand, debris which is contaminated with hazardous waste disposed before the hazardous waste listing effective date and which is actively managed is subject to the prohibitions and so would have to be treated to satisfy the treatment standards promulgated today before the debris could be land disposed (assuming disposal will not occur in a no-migration unit). Chemical Waste Management v. EPA, 869 F. 2d 1526 (D.C. Cir. 1989).

b. Debris Must Be a Solid Material. The rule defines debris as a "solid material." This means solid in a literal sense as defined in a common dictionary. A solid material is a material that retains its volume at room temperature without the need for support by a container. Examples of solid materials that are debris if intended for discard and if their particle size is 60 mm (2.5 inches) or greater include: (1) Glass; (2) concrete (excluding cementitious or pozzolanic stabilized hazardous wastes); (3) masonry and refractory bricks; (4) nonintact containers /11/ e.g., crushed drums); (5) tanks; (6) pipes, valves, appliances, or industrial equipment; (7) scrap metal (as defined in 40 CFR 261.1(c)(6)); (8) animal carcasses; (9) tree stumps and other plant matter; (10) rock (e.g., cobbles and boulders); and (11) paper, plastic, and rubber. Not only is defining debris as solid material in accord with the common-sense view of what debris is, but, more importantly, it is geared to the treatment standards adopted today that ensure effective decontamination of solid materials by removal or destruction of hazardous waste. Clearly, if a liquid could be considered debris, the concept of cleaning off the outer surface to remove contamination does not make sense./12/

NOTE /11/ See discussion in section V.B.1.f of the text regarding regulation of intact and nonintact containers.

NOTE /12/ While most of the debris treatment methods are extraction methods, some methods destroy the hazardous constituents; although these would be applicable to liquid material, most of the treatment methods simply remove the contamination from the debris for subsequent detoxification treatment.

Even though debris must be a solid material, it may contain or be mixed with free liquids./13/ The liquids may be waste or ground or surface water that may be entrapped in the debris (e.g., in partially crushed containers (see discussion below on regulation of containers)) or may be still oozing from the debris if the debris was newly generated or newly excavated from a remediation site. (If liquids separate from hazardous debris prior to treatment of the debris, they must be managed as hazardous waste.) Liquids that are entrapped in debris will be effectively treated under today's treatment standards for extraction or destruction technologies. If an extraction technology is used, the toxic constituents in the liquid will be removed from the debris as a treatment residue and is subject to the LDRs for the waste contaminating the debris. If a destruction technology is used, the toxic constituents in the liquid should be destroyed.

NOTE /13/ To determine otherwise would result in large quantities of solid materials being subject to the existing LDRs for the waste contaminating the materials. Those solid materials would be very difficult to sample representatively to document compliance with the LDRs. Further, the solid materials would be readily amenable to the debris treatment standards promulgated today notwithstanding the presence of free liquids, and hence appropriately classified as debris.

We note, however, that debris that is immobilized prior to land filling may not contain free liquids as provided by Secs. 264.314 and 265.314. Thus, free liquids (including liquids in crushed containers) cannot be present in debris that is macroencapsulated or sealed, and cannot be present in debris that has been micorencapsulated.

c. Debris Has a Particle Size Larger Than 60 mm. Today's rule defines debris as solid material with a particle size of 60 mm (2.5 inches) or greater. We discuss below the rationale for increasing the particle size to 60 mm from the proposed 9.5 mm particle size, the rationale for applying the size criterion to all debris, not just to geologic matter as proposed, the rationale for defining 60 mm or larger clumps of fine-grained materials (e.g., clumps of compacted clay) as nondebris material, and how the particle size criterion is to be implemented.

(1) Rationale for Increasing the Particle Size of Debris From 9.5 mm to 60 mm. The Agency is today defining debris as solid material with a particle size of 60 mm (2.5 inches) or greater for a number of reasons: (a) Fine grain materials (e.g., soil, glass cullet) are not amenable to the surface removal technologies specified in today's rule and are not commonly thought of as debris; (b) fine grain materials are likely to be amenable to the

treatment technologies that were the basis for the LDRs for the waste contaminating the material; (c) fine grain materials, unlike large particle size materials, can be reasonably sampled for analysis to document compliance with the concentration-based LDRs for the waste contaminating the material; (d) material normally considered to be soil should be subject to the Agency's planned LDRs for contaminated soil rather than defined as debris /14/; (e) the selection of a 60 mm particle size criterion is within the range of reasonable particle sizes the Agency could have selected for defining debris; and (f) many commenters suggested a larger particle size, and the only commenters that suggested a particular size suggested 60 mm.

NOTE /14/ We note that numerous commenters were concerned that the proposed particle size criterion of 9.5 mm would inappropriately define most soil as debris. (We note further that the proposed rule could have been interpreted to define as debris geologic material that was comprised of only one particle (e.g., a rock) with a particle size of 9.5 mm or greater. Thus, fine grain soil containing one 9.5 mm or greater sized rock could have been considered debris. The final rule addresses mixtures by defining as debris mixtures of primarily debris with other materials. See discussion in the text in Section V.B.1.d).

We note that a number of commenters suggested that the Agency consider raising the particle size breakpoint as the Agency is doing here. Two commenters suggested an alternative sieve size of 60 mm, stating that existing soil-washing equipment such as rotary screens and wet vibratory screens are capable of handling particles sizes of several inches, and the suggested 60 mm cut-off size would result in more soil being subject to the existing LDRs which require sampling and analysis to document compliance with concentration-based treatment standards.

While the Agency believes that it could have selected other particle sizes, the Agency selected the 60 mm (2.5 inch) particle size from the range of 9.5 mm (3/8 inch) to 200 mm (8 inches) because: (1) It is a commonly used sieve size that is commercially available, (2) it would define as soil pebbles and smaller particles, and define as debris cobbles and boulders /15/ in accord both with common understanding and with materials most amenable to effective treatment by the methods adopted today; and (3) it meets the criteria discussed above (e.g., smaller particle size material can be readily sampled to document compliance with the numerical LDR treatment standards for the waste contaminating the material)./16/ In addition, this size object is normally readily amenable to effective treatment by the methods specified in today's rule.

NOTE /15/ See the May 11, 1992, memorandum from Kerry Rice, Radian to Mark Mercer, EPA, entitled "Particle Size Definitions and Sieve Sizes"; and the May 18, 1992, memorandum from Peter Shields, Radian, to Mark Mercer, EPA, entitled "Sieves with Openings Greater than Four Inches".

NOTE /16/ We note that the Agency is considering proposing Phase II land disposal restrictions that would establish treatment standards for contaminated soil. In that proposal, the Agency is considering requesting comment in particular on whether soils with a particle size between 9.5 mm and 60 mm can be effectively treated under those proposed standards.

(2) Rationale for Applying the Particle Size Criterion to All Debris. The Agency has broadened the particle size test to apply to all debris, not just to geologic debris as proposed. We believe that the reasons enumerated above for increasing the particle size to 60 mm apply equally to applying the particle size to all debris (e.g., small particle size objects--e.g., glass, metal fragments--can be readily sampled representatively to document compliance with the LDRs for the waste contaminating the material).

(3) Compacted Clumps of Fine Grained Materials are not Defined as Debris. The Agency is basing the size criterion on the particle size of the solid material rather than the sieve size to ensure that 60 mm (or larger) compacted clumps of materials with a particle size less than 60 mm are not defined as debris. The most common example is clayey soil. Clay particles are extremely cohesive and can form clumps during normal excavation and handling operations. The contaminated debris treatment methods are not intended to clean clumps of clay. Clumps of agglomerated clay soil are subject to the treatment standards for the waste contaminating the soil.

In addition, the Agency is concerned that generators may have the incentive to intentionally agglomerate small particle size materials (e.g., soil or even manufactured materials) so that they would meet the definition of debris and so be excluded from regulation under subtitle C upon treatment by an extraction or destruction technology. If such contaminated materials were not regulated as debris, they would be subject to the LDRs for the waste contaminating them and would remain subject to subtitle C regulation after treatment. Basing the size criterion on particle size rather than sieve size precludes the potential for such sham activities.

(4) Implementation of the Particle Size Criterion. To make today's rule workable, equipment operators need to be able to determine quickly whether material being remediated is debris or nondebris (e.g., soil, waste). In some cases, the determination will vary from one front end loader bucketfull of material to another. Accordingly, the Agency intends for the size criterion to be implemented by visual observation. Screening is not required. If screening is used, however, the screen may be either a square grid with openings 60 mm on a side or a circular grid with circles with a 60 mm diameter.

(d) Waste for Which a Specific Treatment Standard Has Been Established is not Debris. There is one further exception to this definition of debris. EPA is indicating that debris-like material for which the Agency has promulgated a specific treatment standard is not considered to be debris. The reason is that the Agency will have determined that specific treatment standards are appropriate for the material, rather than the assortment of technologies adopted for debris generally. See 57 FR 983 c.3 (Jan. 9, 1992).

The chief examples of a material subject to a specific treatment standard rather than the general debris standards are lead acid batteries and cadmium batteries. EPA has promulgated a treatment standard of metal recovery for each of these materials. See Sec. 268.42. Thus, this more specific treatment standard takes precedence over the more general debris standard adopted today./17/

NOTE /17/ A number of commenters questioned the jurisdictional basis for regulating battery plates and groups from lead acid batteries as "solid

wastes" subject to subtitle C regulation. EPA adheres to the response set out at 57 FR 960-961 in the proposed rule.

d. Mixtures of Debris with Other Materials are Subject to Regulation as Debris if Debris is the Primary Material Present. A further issue needing to be addressed is the status of mixtures of debris and other materials such as soils or sludge. This situation arises often, particularly in remedial situations where debris is rarely present in a pristine state. Since the treatment standards for debris and other materials--sludge or contaminated soil--differ, the issue of classification is an important one. In developing a means of classification, the Agency on the one hand is seeking to prevent the debris classification from invariably overriding the treatment standards for other hazardous wastes. On the other hand, it is important to have a means of classification that is easy to apply by equipment operators in the field.

The Agency has therefore decided to classify /18/ as debris any mixture where the debris portion comprises the largest amount of material present by volume, to be determined by visual inspection./19/ Thus, for example, if upon examination, a mixture of cobbles (i.e., with a particle size of 60 mm or more), soil, and sludge is comprised mostly of cobbles, the mixture is classified as debris. After being treated by one of the treatment methods for debris promulgated in today's rule, it could then be land disposed. (Residues from applying the treatment method could be land disposed after being treated to meet the treatment standards for the prohibited waste contaminating the debris.)

NOTE /18/ We note that although such mixtures are classified as debris and are subject to the debris treatment standards, if the nondebris materials are separated from the debris prior to treatment by a specified technology, the separated material is no longer classified as debris. If the separated material is a hazardous waste (or soil contaminated with a hazardous waste), it is subject to the waste-specific treatment standards. When treatment residue (i.e., soil, waste, or other nondebris material) is separated from treated debris as required by today's debris standards for extraction or destruction technologies, the residue is subject to the waste-specific standards for the waste contaminating the debris.

NOTE /19/ Some materials (e.g., soil) mixed with debris may contain free liquids that may still be oozing from the material. The volume of such entrapped liquids need not be considered in determining whether the mixture is primarily debris because it is impracticable to determine the volume of such liquids by visual inspection.

The definition of debris encompasses this classification principle by stating that "A mixture of debris and other material such as soil or sludge is also debris if the mixture is comprised primarily of debris by volume, based on visual inspection." It should be clear from this discussion that the rule does not require debris and nondebris materials to be separated prior to treatment (an unintended implication of the proposed rule). Rather, mixtures are either classified as debris or some other type of waste treatability group according to the classification test discussed above.

We note that the "primary material" test for classifying debris does not

apply to intact, nonempty containers. Given that such containers are not debris (see discussion below in section V.B.1.f) and can be readily separated from debris (or mixtures of debris and other materials), they are not considered in applying the "primary material" test. Consequently, intact, nonempty containers must not be included in making the volume determinations to classify mixtures of debris.

There is one further point to be made. Although EPA is classifying mixtures that are predominantly debris as debris, this does not mean that debris can be deliberately mixed with other wastes in order to change their treatment classification. Such mixing is impermissible dilution under Sec. 268.3 since it is a substitute for adequate treatment. See also 53 FR 31145 (Aug. 17, 1988); dilution to change treatability groups is ordinarily impermissible. In addition, such situations where debris is used merely to dilute another prohibited waste, the mixture would remain subject to the most stringent treatment standard of any waste that is part of the mixture. See Sec.
268.41(b).

e. Process Residuals Are Not Debris. Today's definition of debris explicitly excludes process residuals by stating: "Process residuals such as smelter slag and residues from the treatment of waste (e.g., incinerator ash), wastewater, sludges, or air emissions residues (e.g., collected particulate matter) are not debris." The Agency believes that debris should be limited to manufactured objects (e.g., metal, glass) and naturally occurring objects (e.g., boulders, tree stumps). The Agency developed the treatment standards generally to ensure effective treatment of hazardous waste contaminating an object, rather than effective treatment of a large particle size hazardous waste such as slag./20/

NOTE /20/ We note that previous debris definitions (see Sec. 268.2(g)) considered "slag" as debris. The Agency has reconsidered this issue and has determined the slag is not debris because it is not the type of material for which today's debris treatment standards were developed--objects contaminated (generally surficially) with hazardous waste.

Several commenters requested clarification as to what the Agency meant in the proposed rule by excluding from the definition of debris "solids that are listed wastes or can be identified as being residues from treatment of wastes and/or wastewaters." The commenters felt that it was unclear whether this phrase exempts from the definition of debris only pollution control residues, or material such as metal filters, ceramic column packing, or discarded pollution control equipment. Commenters suggested that EPA clarify, through examples, that discarded industrial equipment (such as filters, pumps, etc.) would be included in the definition of debris even if the equipment was used to treat wastes or wastewaters. The commenters are correct. A discarded pump or filter used to treat a waste is debris, but the waste pumped or filtered is not debris. Although some filtered or pumped waste will contaminate the pump or filter (indeed, that is the basis for subjecting the filter or pump to the treatment standards), the contaminated pump or filter will virtually always be comprised primarily of debris rather than waste and so would be classified as debris.

f. Intact Containers Are Not Debris. A number of commenters requested comment on the relationship between the proposed treatment standards for debris and the so-called empty container rule in Sec. 261.7. That rule states in essence that with respect to containers holding hazardous waste,

what is regulated is the hazardous waste in the container and not the container itself. Thus, empty containers are not regulated, and the hazardous wastes in nonempty containers are. An empty container is one from which all hazardous wastes have been removed using practices commonly utilized for waste removal, and in which not more than 2.5 centimeters of waste remains. (Slightly different tests apply to containers holding acutely hazardous wastes.)

Since containers are potentially a form of debris, there is a question whether either empty or nonempty containers are subject to the treatment standards for debris notwithstanding Sec. 261.7. EPA is indicating in this rule that the debris treatment standards do not override the empty container rule, so that rule remains in effect. EPA is taking this step largely because it did not propose the issue for comment, and any fundamental changes to the empty container rule merit fuller public participation than afforded here. In addition, EPA has not fully studied the implications of making changes in the empty container rule to accommodate regulations under the land disposal prohibitions program.

Today's final rule thus indicates that intact containers are never considered to be debris, and thus would never be subject to treatment standards for debris. Intact containers are either empty or nonempty. If empty they are not subject to regulation, as provided by Sec. 261.7(a)(1). If nonempty, the hazardous waste within the container is subject to the land disposal prohibitions (as well as the rest of subtitle C regulations). EPA also does not consider intact tanks to be debris, so that any hazardous wastes in tanks would be subject to the standards for those wastes, not (potentially) to treatment standards for debris.

It should be noted, however, that EPA is reading the empty container rule in Sec. 261.7 to apply to intact containers. The Agency is doing so because the rule was clearly intended for devices that function as containers, not for crumpled drums that are not easily emptied by normal means. See Sec. 261.7(b)(1)(i). Nonfunctional containers are more naturally classifiable as debris and the treatment standards adopted today are appropriate for such damaged containers being disposed.

By "intact container", the Agency means a container that can still function as a container. The Agency believes that a container that is unbroken and still retains at least 75% of its original holding capacity (i.e., has not been crushed more than 25%) is still intact. The Agency selected the 75% criterion because: (1) It is within a reasonable range of 50% to 90%; (2) selecting an original volume criterion on the high end of the range (e.g., 90%) would result in containers containing large quantities of waste being considered debris even though the containers could be readily separated from debris; and (3) selecting an original volume criterion on the low end of the range (e.g., 50%) would subject the waste in containers that have been severely crushed to the treatment standards for the waste. This would require removal of the waste from the container for treatment which may be impracticable for severely crushed containers.

Finally, it should be noted that by observing the empty container rule, EPA is creating a limited exception to the nonsegregation principle discussed above. In situations where intact containers are mixed with true debris (i.e., materials classified as debris under today's rule), the intact containers thus would have to be removed and managed separately.

The following example indicates how these principles would apply. At a remediation site, ruptured drums are discovered still containing some prohibited hazardous waste. Mixed in with these drums are other drums some of which are not significantly damaged or crumpled and all still contain prohibited hazardous wastes. All of these drums are going to be disposed of off site.

Under today's rule, the ruptured drums are debris (broken or ruptured containers are always debris if contaminated with prohibited waste) and cannot be land disposed until they are treated by one of the debris treatment methods. If hazardous waste is removed from the drum during treatment, the waste, like all treatment residues, is subject to the treatment standards for the prohibited waste. With respect to the unruptured drums, those that are intact (i.e., those that retain at least 75% of their original volume) are nonempty containers under Sec. 261.7. The waste in these drums is subject to the treatment standards for the prohibited waste. Those that are not intact (i.e., those that retain less than 75% of their original volume) are debris.

2. Definition of Hazardous Debris

a. Which Debris is Hazardous, and of this Debris, Which is Prohibited? This rule applies only to debris that is subject to subtitle C regulation when it is generated. As EPA proposed, this means: (1) Debris that contains listed hazardous wastes (either on the debris surface, or in its interstices, such as pore structure); or (2) debris that exhibits a characteristic of hazardous. See 57 FR 983. To be prohibited, and hence subject to the treatment standards adopted today, the debris would have to be contaminated with listed wastes that are also prohibited, or exhibit a prohibited characteristic. Thus, only debris that is contaminated with a listed waste for which EPA has established a treatment standard, and debris exhibiting the characteristics of ignitability, corrosivity, reactivity, or EP toxicity (plus exhibiting the TC characteristic, since the debris must still be a hazardous waste) are subject to the treatment standards adopted today. (Most of these debris wastes, of course, are already prohibited by virtue of previous rulemakings; only debris contaminated exclusively with the newly listed wastes for which EPA is adopting treatment standards today would be newly prohibited under today's rule.)

b. Codification of Contained in Principle for Debris. In adopting the definition that debris containing listed hazardous waste is regulated under subtitle C, EPA is codifying the "contained in" principle, which has heretofore served as an interpretive gloss on the existing mixture and derived from rules. See 57 FR 983, CMA v. EPA, 869 F. 2d 1526 (D.C. Cir. 1989). As explained at proposal, id. at 986, the contained in concept will apply to both media and nonmedia debris (an approach with unanimous support in the public comments).

Furthermore, EPA is also codifying the corollary part of the contained in principle: That debris which no longer "contains" listed hazardous waste would no longer be subject to subtitle C regulation, provided that it does not exhibit any hazardous waste characteristic. This involves a case-by-case determination by EPA, made upon request, that debris does not contain hazardous waste at significant levels, taking into consideration such factors as site hydrogeology and potential exposure pathways, but excluding management practices./21/ Debris found not to contain hazardous waste (and not exhibiting a hazardous waste characteristic) would not be

subject to further subtitle C regulation, and so could be land disposed without further treatment. In addition, these levels could be achieved by any form of treatment other than impermissible dilution, and thus need not result from application of the debris treatment methods adopted today. Id. at 983-84.

NOTE /21/ We note that consideration of management practices for exclusion from subtitle C is being evaluated through the proposed Hazardous Waste Identification Rule discussed below in the text.

3. Relation of Today's Rule to the Hazardous Waste Identification Rule

On May 20, 1992, EPA proposed comprehensive revisions to the regulatory definition of hazardous waste, asking for comment on a series of options for redefining what a hazardous waste is. See 57 FR 21450. These rules could affect which debris is considered to be hazardous when it is generated (both through modifications to the hazardous waste definitions and the contained in principle), and so could affect both the definition of hazardous debris used in this rule, and possibly the extent such debris must be treated by prescribed methods of treatment. EPA has attempted to note in each of the sections below the potential overlap of this proposed rule on the rules adopted today.

Although the Hazardous Waste Identification Rule (HWIR) when promulgated will affect the definition of hazardous debris subject to today's treatment standards, the Agency believes that it is nonetheless appropriate to make the treatment standards effective immediately upon promulgation. The Agency does not believe that today's rule will place an unreasonable burden on generators of hazardous debris that may subsequently be determined by HWIR not to be hazardous because the Agency has provided a national, case-by-case capacity variance for hazardous debris that defers the effective date of today's treatment standards until May 8, 1993. By that time, the Agency believes that the final HWIR will be promulgated and the treatment of debris that HWIR determines is no longer hazardous will be precluded.

C. Treatment Standards for Hazardous Debris

1. Overview

In this section, we discuss: (1) The treatment technologies proposed as BDAT; (2) the contaminants subject to treatment; (3) the debris treatment standards; (4) alternative LDR standard; (5) performance standards that must be met to ensure effective treatment and to comply with the BDAT standards; (6) contaminant restrictions for certain treatment methods; (7) use of treatment trains for multiple contaminants and debris types; (8) treatment of characteristic debris; (9) standards for debris that is inherently toxic (i.e., it fails the TC and EP for metal contamination because it is fabricated from a toxic metal); (10) relationship of TSCA PCB rules to today's rule; (11) relationship of existing agency standards for asbestos to today's rule; (12) special requirements for radioactive debris; and (13) implementation of treatment standards.

2. BDAT Debris Treatment Technologies

a. Identification of BDAT Treatment Technologies. The Agency considered a treatment technology to be "available" if the technology itself or the services of the technology are able to be purchased, and the technology substantially diminishes the toxicity of the waste or reduces the likelihood of migration of the waste's hazardous constituents. The technologies that the Agency has identified as best demonstrated available technologies (BDAT) have been used to treat hazardous debris at Superfund sites, to remove radioactive metals from debris, to treat debris-like material contaminated with compounds similar to one or more of the compounds in the debris contaminant categories or, based on engineering judgment, are applicable to debris.

The Agency considered a technology to be demonstrated for a particular waste if the technology currently is in commercial operation for treatment of the waste or constituent of interest or similar wastes or constituents of interest, including wastes not regulated under RCRA, such as PCBs and radioactive waste. The Agency identified demonstrated technologies either through a review of the literature in which current waste treatment practices were discussed, or through information provided by specific facilities currently treating the waste or similar wastes. EPA also considered as demonstrated technologies those used to separate or otherwise process chemicals and other materials which are similar to the waste or constituent of interest.

The Agency also reviewed the properties of debris which may directly affect the efficiency of treatment technologies. Debris characteristics which may affect the performance or effectiveness of treatment technologies to clean various types of debris include:

** Destructibility;
** Hardness and brittleness;
** Moisture content;
** Permeability;
** Size, homogeneity, and location (in situ versus ex situ);
** Surface texture; and
** Total organic carbon (TOC).

Under today's rule, the Agency has identified the following 17 treatment technologies as BDAT for hazardous debris:

** Extraction Technologies:

--Physical Extraction --Abrasive blasting --Scarification, grinding, and planing --Spalling --Vibratory finishing --High pressure steam and water sprays
--Chemical Extraction --Water washing and spraying --Liquid phase solvent extraction --Vapor phase solvent extraction
--Thermal Extraction --High temperature metals recovery --Thermal desorption

** Destruction Technologies

--Biodegradation
--Chemical oxidation
--Chemical reduction
--Thermal destruction

** Immobilization Technologies

--Macroencapsulation
--Microencapsulation
--Sealing

Summary descriptions of these technologies are presented in Appendix I of today's preamble and treatment performance standards for each technology are prescribed in Table I, Sec. 268.45. Further, detailed information on the various treatment technologies is presented in the Hazardous Debris Final Rule Technical Support Document.

b. Changes in Identification of BDAT Technologies From Proposal. Based on public comment and the Agency's further evaluation, the Agency has determined that two debris treatment technologies proposed as BDAT--electropolishing and ultraviolet radiation--are not BDAT, and an additional technology not proposed as BDAT--high temperature metal recovery--is, in fact, BDAT for hazardous debris. The basis for these determinations is discussed below.

(1) Electropolishing Is Not BDAT. The Agency has determined that electropolishing is not BDAT for hazardous debris because of concerns that the technology is intended primarily for smoothing clean metal parts. Painted or contaminated metal parts might not be effectively treated by this method.
A contaminating organic waste or paint could electrically insulate the surface from the solution and prevent surface removal of contaminants.

(2) Ultraviolet Radiation Is Not BDAT. The Agency deleted ultraviolet radiation treatment from the list of BDAT technologies for hazardous debris because of difficulties of specifying performance standards that would ensure effective treatment in all cases. This technology is primarily intended for liquid waste treatment where the fluid is passed by a ultraviolet radiation source in a thin stream. This approach is designed to ensure that the ultraviolet light reaches all of the toxic molecules and detoxifies them. If the technology were to be applied to hazardous debris, it would be virtually impossible to ensure that all toxic molecules contaminating the debris were adequately radiated. Sludge and soil caked onto debris would preclude radiation of both inner layers of caked material and the debris surface.
Further, even for debris that is relatively free of caked-on materials, the debris would have to be systematically turned to expose all contaminated surfaces to the radiation. The use of sunlight to provide the ultraviolet radiation as proposed as an alternative to an artificial source poses even greater problems of ensuring exposure to ultraviolet radiation at levels that would ensure effective treatment. The Agency's effort to provide for innovative debris treatment at proposal simply went too far.

(3) High Temperature Metal Recovery Is BDAT. The Agency has added high temperature metal recovery (HTMR) to the list of acceptable debris treatment technologies. It is a very effective method for treatment of recoverable metal values in both metal debris and debris that is contaminated with metal- bearing hazardous waste. The Agency did not include HTMR as BDAT at proposal simply because of oversight. Several commenters suggested that we include this method, and the Agency agrees.

We note that HTMR can also effectively treat toxic organic contaminants. If the debris contains more than a total of 500 ppm of toxic organic compounds listed in appendix VIII, part 261, the HTMR facility is subject

to the Boiler and Industrial Furnace (BIF) Rule. See Sec. 266.100. The HTMR would be subject to the same controls on organic emissions /22/ as other BIFs burning hazardous waste. When the total concentration of toxic organic compounds in the waste is less than 500 ppm, the Agency believes that any emissions of organic compounds attributable to those organic compounds will not pose a hazard to human health and the environment.

NOTE /22/ Emissions of metals, HCl, Cl2, and particulate matter are also controlled by the BIF rule.

3. Contaminants Subject to Treatment

Today's rule requires hazardous debris to be treated by one of the specified technologies /23/ for each "contaminant subject to treatment" defined as: (1) the BDAT constituents identified in Secs. 268.41 and 268.43 for the listed waste contaminating the debris that are present at detectable levels; /24/ (2) the constituents for which the debris exhibits Extraction Procedure toxicity; and (3) cyanide or sulfide if debris exhibits reactivity due to the presence of those constituents. As discussed in section V.C.5 below, although debris may contain several contaminants subject to treatment, the treatment standards generally do not require treatment by multiple technologies (i.e., a treatment train). This is because many of the specified technologies effectively treat various types of contaminants (e.g., metals, aromatic and aliphatic organic compounds, halogenated and nonhalogenated organic compounds).

NOTE /23/ Unless EPA determines the hazardous debris no longer contains hazardous waste (see discussion in section V.B.2 of the text) or unless the generator elects to comply with the waste-specific treatment standards for the waste contaminating the debris (see discussion in section V.C.4 of the text).

NOTE /24/ We note that the generator may presume that the BDAT constituents for the listed waste are present at detectable levels and is not required to sample and analyze the debris to make that determination. If, however, the generator elects to sample and analyze the debris, the Agency acknowledges that this may be a difficult task for many types of debris and debris mixtures. In this situation, the generator must use best engineering judgement to obtain samples that are as representative as practicable.

In the proposed rule, the Agency proposed a broader definition of "contaminants subject to treatment" that would have included constituents on appendix VIII, part 261, that the generator could reasonably know may contaminate the debris at detectable levels. Further, the Agency requested comment on whether the rule should require that debris that is hazardous solely because it exhibits a characteristic (i.e., toxicity, ignitability, or reactivity) be treated for all constituents on appendix VIII, part 261, that the generator could reasonably know may contaminate the debris at detectable levels. The Agency addressed these provisions at proposal because of concern that all toxic constituents present be effectively treated given that debris treated by an extraction or destruction

technology and that does not exhibit a characteristic is excluded from subtitle C regulation.

We have determined, however, that neither of these provisions is likely to be necessary to ensure effective treatment of hazardous debris for a number of reasons. Thus, these provisions are not included in today's rule. First, we believe that enough contaminants subject to treatment will be identified for most debris to ensure effective treatment of other toxic contaminants that may be present. Given that most debris is generated by remediation, the debris is often associated with a variety of wastes that will result in a number of contaminants being designated contaminants subject to treatment-- either because listed wastes or known to be present, or more likely, because the debris fails the EP /25/ for one or more constituents. For example, it is highly unlikely that debris will exhibit only ignitability or reactivity and not fail the TC or be contaminated with a listed waste (and thus, require only deactivation of the ignitability or reactivity characteristic under today's rule) if, in fact, toxic constituents are present at significant levels. Given that most of the debris treatment technologies specified in today's rule are not restricted to specific contaminants other than metal vs.
nonmetal contaminants and that many technologies (e.g., surface removal, incineration) have no contaminant restrictions (see section V.C.5 below), the designation of a few contaminants subject to treatment should be sufficient to ensure effective treatment of other toxic contaminants that may be present.

NOTE /25/ We note that the Agency is considering proposing treatment standards for TC wastes and debris contaminated with TC wastes. If that rule is promulgated, debris will be identified as hazardous debris if it exhibits the TC for an additional 26 organic compounds many of which are commonly found at remediation sites. Thus, over time, additional debris contaminants will become designated contaminants subject to treatment.

Further, commenters argued, and the Agency agrees, that it would be difficult to implement and enforce a rule that required generators to treat toxic constituents that they have reason to know are present at detectable levels. First, whether the generator, in fact, could have reason to know that a toxic constituent is present is highly subjective and difficult to enforce.
Second, the Agency upon additional consideration believes that, if treatment of such additional toxic constituents were to be required, treatment should only be required if the constituent is present at significant levels, not merely at detection levels. This raises the issue of what is a significant level. Possible criteria include a level of potential health significance or the F039 treatment levels. (We note that the Agency, in fact, requested comment on using these criteria to determine when these other (i.e., other than BDAT constituents for listed waste contaminating the debris and the constituents for which the debris fails the EP) toxic constituents known to be present would be contaminants subject to treatment. See 57 FR 984, n. 11.) Not only is the Agency unsure which approach would be more appropriate, but under either approach--i.e, health-based levels or F039 levels--sampling and analysis would be required if the generator did not want to presume that a toxic constituent known to be present was present at the trigger level. Since it is particularly difficult to take representative samples of untreated debris, EPA considers

this approach to be inadvisable.

4. Debris May Be Treated to the Existing Waste-Specific LDRs in Lieu of Today's Debris Treatment Standards

Today's rule gives generators the option of treating hazardous debris to the existing waste-specific treatment standards for the waste contaminating the debris. The treated debris, however, must continue to be managed under subtitle C. If land disposed, the debris must be disposed in a subtitle C landfill. However, such debris would be excluded from subtitle C regulation if the Agency determined that it no longer contained hazardous waste (see discussion above in section V.B.2) or if the treater determined that the debris no longer contained hazardous constituents at levels that may be established under a final Hazardous Waste Identification Rule (see discussion above in section V.B.3).

The Agency is providing this option in today's rule based on the request of numerous commenters. For example, one commenter routinely adds the tyvek suits and rubber gloves worn by facility operators to the waste stream leaving his factory, and wishes to continue doing so. The proposed rule would have required the tyvek suits and rubber gloves (as debris) to be separated from the waste for treatment by the specified technology. The commenter preferred to treat the waste/debris mixture to the waste-specific standards and the Agency believes that this practice is appropriate to provide an additional means of treating debris that substantially reduces toxicant mobility or concentration.

The Agency developed special treatment standards for hazardous debris because of concern that, in most cases, the waste-specific standards would not be practicable for debris given the difficulty in obtaining representative samples of treated debris to document compliance with the concentration-based waste-specific standards. The Agency acknowledges, however, that some types of debris may be amenable to representative sampling and therefore compliance with the waste-specific standards may be workable./26/

NOTE /26/ We note that commenters may have requested this option out of frustration that the proposed rule did not effectively address the issue of debris mixtures. The proposed rule appeared to require either separation of debris types prior to treatment or the extensive use of treatment trains to treat different debris types. This problem has been remedied in today's final rule by acknowledging the ability of the treatment technologies to treat a greater variety of debris types than proposed. See discussion in section V.C.5 of the text.

Debris that is treated to the waste-specific treatment standards rather than today's debris treatment standards remains subject to subtitle C regulation because toxic constituents may continue to be present at levels that could pose a hazard to human health and the environment. EPA believes that this position is appropriate for two reasons. First, there is no reason to exclude from subtitle C regulation hazardous debris treated to the waste- specific standards when the waste itself is not excluded when treated to those standards. Second, and moreover, the Agency believes that today's treatment standards will treat debris to levels resulting in minimum threat to human health and the environment. See discussion below.

Although meeting the waste-specific standards may result in some cases in levels of toxic constituents in the treated debris that do not pose a hazard to human health and the environment, the Agency is not certain that this will be the case in all situations (and in any case, the issue is more appropriate for resolution in the context of the May 20, 1992, proposed rule, 57 FR 21450).

5. Treatment Standards

In this section, we provide the rationale for the treatment standards for each technology and explain how the standards work, and we explain how the final treatment standards differ from those proposed.

a. Overview. Today's rule establishes performance and/or design and operating requirements for 17 treatment technologies that the Agency has designated as BDAT for hazardous debris. See Table I of Sec. 268.45. Although any technology may be used to treat any debris, the treatment standards vary for many technologies according to the type of debris treated./27/ In addition, the rule prohibits the use of some technologies to treat specific types of contaminants. For example, the physical extraction technologies (e.g., abrasive blasting) have no contaminant type restrictions, while thermal desorption may not be used to treat metals other than mercury.

Generators (and owners and operators of treatment facilities) may select any treatment technology that is not restricted for the contaminant subject to treatment.

NOTE /27/ In addition, although the rule does not prohibit treatment of specific debris types by a technology, the treatment standards cannot be met as a practical matter for certain debris/technology combinations (e.g., high pressure steam and water sprays cannot remove 0.6 cm of the surface layer of brick, concrete, etc). In other situations, the definition of the technology as a practical matter precludes the use of some technologies for some debris types (e.g., the definition of spalling cannot be met when applied to treat cloth).

The Agency has attempted to establish performance or design and operating requirements for each of the extraction and destruction technologies that will optimize treatment effectiveness such that hazardous contaminants would not be present at residual levels in the debris that could pose a hazard to human health and the environment. Thus, the treated debris could be excluded from subtitle C regulation. Unfortunately, the Agency was not able to develop objective performance or design and operating standards for all extraction and destruction technologies that would ensure treatment to minimum threat levels (e.g., thermal desorption, biodegradation, and chemical destruction; see discussion below). For these technologies, the Agency is concerned that residual levels of hazardous contaminants may remain in the debris at levels that could pose a hazard to human health and the environment. Consequently, today's rule requires for these technologies that the owner or operator of the treatment unit must make an "Equivalency Demonstration" to the Agency under existing Sec. 268.42(b) that documents that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for the other technologies in Table 1, Sec. 268.45, such that

residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent subtitle C control.

Today's treatment standards establish performance standards rather than design and operating standards where supporting data were available. The Agency believes that performance standards will better ensure effective treatment given the variability in contaminant and debris types and properties that affect treatability. Further, performance standards give the owner and operator of the treatment unit the flexibility to tailor the design and operation of the unit to the specific debris/contaminant(s) being treated. An example of a performance standard is the standard for physical extraction technologies (e.g., abrasive blasting) used to treat a metal object where the standard requires decontamination to a "clean metal finish" as defined in the regulation. An example of a design and operating standard is the standard for thermal desorption that limits the thickness of porous debris to 10 cm (4 inches).

EPA recommends that the generator or owner or operator of the treatment facility consider the thermal, chemical, and physical properties of the debris and the contaminants on the debris before selecting a treatment technology to ensure that the performance or design and operating requirements can by achieved. The Agency plans to develop a nonregulatory implementation assistance document to provide assistance on how to select the most appropriate technologies for a given debris/contaminant combination.

Although hazardous debris treatment operations are generally subject to regulation under the interim status or permit standards of parts 270 and 264, 265, or 266,/28/ today's hazardous debris performance or design and operating standards are neither interim status nor permit standards. The hazardous debris treatment standards are adopted pursuant to section 3004(m) of RCRA to ensure that debris is treated to minimize the hazardous constituents' toxicity or mobility during future management, while the interim status and permit standards are designed to protect human health and the environment from the operation of the storage, treatment, or disposal facility itself. It is for this reason that today's treatment standards do not address control of emissions that can occur from debris treatment; the Agency is relying on the applicable interim status and permit standards to control treatment emissions. See discussion below in section V.F.

NOTE /28/ Unless treatment occurs in an on-site container, tank, or containment building, the hazardous debris is treated within 90 days of generation, and the unit complies with the appropriate standards of part 265, or unless the treatment occurs within the Area of Containment (AOC) at a Superfund remediation site and the generator complying with today's treatment standards in order to remove the treated debris from the AOC and manage it as debris excluded from subtitle C. See discussion in section V.F. of the text.

The Agency has grouped the various treatment technologies into categories of like treatment type. Each category is based on the same (or similar) performance or design and operating standards. See Table 1 of Sec. 268.45. We discuss below for each group of treatment technologies the basis for the standards and how the standards will work. Note that the performance or

design and operating standards must be met for all debris surfaces that are contaminated with hazardous waste. Thus, if a pipe or pump was used to manage hazardous waste, the performance standards must be met for the inside surfaces of the pipe or pump. Decontamination of the outer surfaces only does not constitute compliance with the debris treatment standards.

b. Extraction Technologies. The Agency has classified the extraction technologies as physical extraction, chemical extraction, and thermal extraction.

(1) Physical Extraction Technologies. The physical extraction technologies are: abrasive blasting; scarification, grinding, and planing; spalling; vibratory finishing; and high pressure steam and water sprays. For these technologies, the rule establishes performance standards based on removal of the contaminated layer of the debris. Any contaminant subject to treatment may be treated by these technologies,/29/ because the contaminants are removed as residue /30/ subject to the treatment standards for the waste contaminating the debris.

NOTE /29/ As discussed below in the text, today's rule establishes additional requirements for certain technologies in order to exclude the treated debris from subtitle C when the debris is contaminated with waste that is listed for dioxins (EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, or F027).
The Agency did establish such additional requirements for treatment of debris contaminated with dioxin-listed waste when treated by the physical extraction technologies, however, because the Agency believes that it is highly unlikely that compliance with the rigorous performance standards for these physical extraction technologies will allow significant residual levels of contaminants such that even highly toxic contaminants could pose a hazard to human health and the environment absent subtitle C control.

NOTE /30/ Except that for spalling, the spalled material is considered untreated debris, not residue, and must be treated before land disposal. See additional discussion in the text.

In addition, any debris type (e.g., metal, concrete, wood, paper, cloth) may be treated by these technologies. The Agency reasoned that any debris type would be effectively treated provided that the contaminated layer of the debris is removed. We note that, although the rule allows the use of physical extraction technologies on any debris type, it will be impracticable to use these technologies on some debris types and the performance standards cannot be met for some technology/debris combinations. For example, it is impracticable to spall paper or cloth. However, we realize that debris often is comprised of a mixture of debris types, and physical extraction may be the most reasonable technology for the predominate debris type while other types of debris present would be removed as residue. An example is large chunks of concrete that have paper labels adhered to them. Spalling or another physical extraction technology may be practicable for the concrete and the paper labels will be removed as residue. An example of where the performance standard cannot be met for a technology/debris combination is high pressure steam and water spray used to treat brick or concrete. As discussed below, because these debris types are porous and toxic contaminants may be adsorbed below the surface of the

debris, the performance standard requires removal of at least the outer 0.6 centimeter surface layer. This technology cannot meet that performance standard for those types of debris. Rather than explicitly prohibiting such practices, however, such practices will be precluded because of the inability to comply with the standards.

To ensure that the contaminated layer of debris is removed and to account for the physical properties of different types of debris, the rule establishes different performance standards for different types of debris.

(a) Metal Objects. Metal objects must be treated to remove foreign matter adhering to the metal to produce a "clean debris surface". The rule defines a "clean debris surface" as a surface that, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste, except that residual staining caused by soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and soil and waste in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

The rule allows minor residual staining caused by soil and waste and soil and waste to remain in cracks, crevices, and pits of up to 5% of each square inch of surface area /31/ because of the impracticability of cleaning metal debris to a "white metal finish" as proposed. The Agency selected the 5% surface area criterion because: (1) it is within the range of reasonable levels--1% to 10%--that could have been selected; (2) it is generally equivalent to the Steel Structures Painting Council's specification for "Near-White Blast Cleaning" for cleaning steel surfaces by the use of abrasives; /32/ and (3) it should not allow toxic contaminants to remain at levels that could pose a hazard to human health and the environment absent subtitle C regulation, and should remove contaminants so that threats posed by disposal of the debris are minimized.

NOTE /31/ Note that the 5% surface area criterion is applied to each square inch of the debris surface that has been contaminated with hazardous waste.
The area covered by large stains cannot be averaged against large unstained areas. Only 5% of the area within any square inch can contain a residual stain.

NOTE /32/ See the May 18, 1992, memorandum from Peter Shields, Radian, to Mark Mercer, EPA, entitled "Industry Standards for Cleanliness of Metal Surfaces".

(b) Brick, Cloth, Concrete, Paper, Rock, Pavement, and Wood. The performance standard for these types of debris requires: (1) Removal of at least 0.6 centimeters of the surface layer; and (2) treatment to a "clean debris surface." Removal of 0.6 centimeters of the surface layer is required for these types of debris because they may be porous and toxic contaminants may by absorbed within the debris. (The Agency recognizes that, as a practical matter, the 0.6 cm surface removal requirement precludes the use of this technology for most porous debris.) To ensure removal of contaminants that may be absorbed to depths beyond 0.6 centimeters, the rule requires removal of virtually all staining that could

be indicative of the presence of toxic contaminants. The rule allows minor residual staining and foreign matter in cracks and crevices on up to 5% of the surface area (on a square inch basis) as a reasonable and practicable method to help ensure that the standards do not require treatment to a level beyond that necessary to ensure that the treated debris does not pose a hazard to human health and the environment absent subtitle C regulation. We note that staining that is not indicative of the potential presence of hazardous waste or contaminated soil (e.g., rust stains on concrete adjacent to steel reinforcing bars) need not be removed and is not considered in determining compliance with the maximum 5% surface area limit on residual staining. The basis for the 5% surface area limit (on a square inch basis) on residual staining and foreign matter in cracks and crevices is the same as the basis discussed above for the definition of clean metal finish.

(c) Glass, Rubber, Plastic. The physical extraction performance standards for these types of debris are the same as for brick, concrete, etc., except that removal of at least 0.6 centimeters of the surface layer is not required. Removal of the surface layer for glass, rubber, or plastic is not required because glass is nonporous and will not absorb contaminants below the surface, and rubber and plastic, although permeable, are not likely to leach absorbed contaminants at substantial rates.

(2) Chemical Extraction. The technologies classified as chemical extraction are water washing and spraying; liquid phase solvent extraction; and vapor phase solvent extraction. The performance standards for these technologies are based on dissolution of the contaminants into the cleaning solution.
Removal of the outer debris layer is not intended.

(a) Water Washing and Spraying. Water sprays or water baths will effectively treat debris when sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and/or detergents are used to meet the performance standards in accord with the contaminant restrictions.
The rule requires that the debris must be treated to a "clean debris surface" (see discussion above) to ensure effective treatment to levels of hazardous contaminants that are not likely to pose a hazard to human health and the environment absent subtitle C control.
For porous debris--brick, cloth, concrete, paper, pavement, rock, and wood--the rule provides two other requirements. The thickness (i.e., one dimension) of each piece of porous debris may not be more than 1.2 cm (i.e., 1/2 inch), and the contaminants must be soluble to at least 5% by weight in the water solution or 5% by weight in the emulsion, as applicable. The Agency is applying these standards for porous debris to ensure effective extraction of toxic contaminants that may be absorbed below the surface layer of the debris.

If reducing the thickness of debris to 1.2 cm to meet the treatment standards results in debris that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and hazardous waste before size reduction. This is consistent with the Agency's position that material with a particle size less than 60 mm is amenable to conventional treatment for process waste and small particle-sized material (i.e., as opposed to large debris objects) and that such material can be reasonably sampled for analysis to document compliance with the

concentration-based treatment standards for the waste contaminating the material.

If the debris has been cleaned and separated from contaminated soil and hazardous waste before size reduction, the material remains classified as debris subject to today's treatment standards even if it no longer has a 60 mm particle size. The Agency believes that cleaning and separation of contaminated soil and hazardous waste will substantially reduce the concentration of toxic constituents such that the debris should contain minimum threat levels subsequent to treatment by an extraction or destruction technology. The level of cleaning and separation that is required is the same as required for separation of treatment residue from treated debris. See Note 9 to Table 1, Sec. 268.45. At a minimum, simple physical or mechanical methods must be used such as vibratory or trommel screening or water washing.

The debris surface need not be cleaned to a "clean debris surface" as defined in Table 1; rather, the surface must be free of caked soil, waste, or other nondebris material. Nondebris materials so separated are subject to the waste-specific treatment standards for the waste contaminating the material.

Porous debris (i.e., brick, cloth, concrete, paper, pavement, rock, or wood) that is contaminated with a waste listed for dioxin--EPA Hazardous Waste Numbers F020, F021, F022, F023, F026, or F027--is subject to additional controls. Because of the potential toxicity of the constituents in these wastes, the Agency believes that it is prudent to require additional controls to ensure that the potentially highly toxic constituents in these wastes are extracted from below the debris surface and that the treated debris poses minimum threat to human health and the environment absent subtitle C control.

Accordingly, the rule requires the treater to make an "Equivalency Demonstration" to the Agency under existing Sec. 268.42(b) that documents that the technology treats contaminants subject to treatment in these dioxin- listed wastes to a level equivalent to that required for these contaminants by the performance and design and operating standards for other technologies in 'Table 1, Sec. 268.45, such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent subtitle C control.

(b) Liquid Phase Solvent Extraction. This technology decontaminates debris surfaces by applying a nonaqueous liquid or liquid solution which causes the toxic contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution using agitation, temperature, and residence time sufficient to meet the performance standards. The treatment standards for this technology are the same as for water washing and spraying because the technologies use the same principles to extract toxic contaminants from debris.

(c) Vapor Phase Solvent Extraction. This technology decontaminates debris surfaces by applying an organic vapor which causes the toxic contaminants to enter the vapor phase using sufficient agitation, residence time, and temperature and to be flushed away with the organic vapor such that the performance standards are achieved. The treatment standards for this technology are the same as for water washing and spraying, except that porous debris surfaces must be in contact with the organic vapor for more than 60 minutes. This treatment time is consistent with state-of-the-art practices and is necessary to ensure effective extraction of contaminants.

(3) Thermal Extraction. The Agency has classified two technologies as thermal extraction: High temperature metals recovery and thermal desorption.

(a) High Temperature Metals Recovery (HTMR). HTMR furnaces are smelting, melting, or refining furnaces (including pyrometallurgical devices such as cupolas, reverberator furnaces, sintering machines, roasters, and foundry furnaces (see Sec. 260.10 definition of "industrial furnace")) that use sufficient heat, residence time, mixing, fluxing agents, and/or carbon to extract metals from debris. HTMR furnaces are potentially subject to regulation under the Boiler and Industrial Furnace (BIF) Rule (subpart H, part 266) when they burn hazardous debris./33/

NOTE /33/ See Sec. 266.100(c) that states generally that a smelting, melting, or refining furnace that burns a hazardous waste with a heating value of 5,000 Btu/lb or more or that contains a total concentration of toxic organic compounds exceeding 500 ppm by weight is subject to the BIF Rule.

Today's rule requires that, for nonslagging furnaces (e.g., refining furnaces), treatment residuals must be separated from the debris. In addition, such separated residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris prior to further treatment. Further, these residues must meet the waste-specific treatment standards for all BDAT constituents in the waste contaminating the debris prior to land disposal. Finally, if debris is contaminated with a dioxin-listed waste, HTMR is not BDAT and the treated debris is not excluded from subtitle C unless the treater makes an "Equivalent Technology" demonstration to the Agency under Sec. 268.42(b) that documents that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in Table 1, Sec. 268.45, such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent subtitle C control.

Today's rule does not establish performance or design and operating standards for slagging HTMR furnaces (other than the requirements inherent in the definition--a melting or smelting furnace must melt metals and extract the metals from debris) because a slagging furnace is likely to provide effective treatment for all contaminants, except perhaps for chlorinated dioxins as discussed below, and for all debris types.

For nonslagging (i.e., refining furnaces such as roasters) HTMR furnaces, the rule ensures treatment of both metal and organic contaminants. First, the definition of HTMR furnaces requires that metals must be separated from the debris. Thus, not only will metals be removed, but temperatures hot enough to separate metals from debris should also remove organic contaminants from the debris (with perhaps the exception of dioxins, as discussed below). Second, to help ensure that the HTMR unit has effectively removed organic contaminants in the debris the rule requires that the residue be separated from the treated debris and that the separated residue must meet the waste- specific treatment standards for the BDAT organic contaminants in the waste contaminating the debris prior to further treatment.

In addition, the Agency is concerned that potentially extremely toxic

contaminants may not be destroyed (or removed with the residue) to levels that would not pose a hazard to human health and the environment absent subtitle C control. Consequently, if debris is contaminated with a dioxin-listed waste, HTMR is not BDAT for the debris and the debris is not excluded from subtitle C after treatment unless the treater obtains approval from the Director under an equivalent technology demonstration provided by Sec.
268.42(b) for the design and operating conditions of the HTMR unit. The rule provides this restriction for dioxin-listed waste because of concern that if such contaminants remained undestroyed even at low concentrations in the residue and were not completely removed from the treated debris, that the debris could pose a health or environmental hazard absent subtitle C control.

(b) Thermal Desorption. Thermal desorption is heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient operating temperature and residence time such that the contaminants subject to treatment are vaporized and removed from the heating chamber in a gaseous exhaust streams./34/ The rule establishes operating and performance standards and contaminant restrictions, and requires the treater to make a demonstration of "Equivalent Technology" under Sec. 268.42(b) to document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in Table 1, Sec. 268.45, such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent subtitle C control.

NOTE /34/ We note that a thermal desorber is regulated either as an incinerator (if the device is direct-fired or if the off-gas is burned in an afterburner) under subpart O of part 264 or 265, or as a thermal treatment unit under subpart X, part 264 or subpart P, part 265. To distinguish between thermal desorption and thermal destruction (for which separate debris treatment standards are provided) for purposes of complying with this rule, the primary purpose of thermal desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or treatment. We note that the treatment standards in Table 1, Sec. 268.45 for thermal destruction specifically excludes thermal desorbers.

The Agency attempted to develop objective treatment standards that would obviate the need for an equivalency demonstration (see discussion above). The Agency determined, however, that it was very difficult to establish universal operating limits for the key operating parameters that affect treatment efficiency--temperature, residence time, size of porous debris, bed depth, and volatility of the contaminant--that would strike a balance between ensuring treatment to minimum threat levels and establishing requirements that could grossly over-regulate in many situations. Rather, the Agency believes that operating requirements can best be determined on a case-by-case basis (i.e., under an equivalent technology demonstration under Sec.
268.42(b)) considering the parameters listed above. In addition, the Agency believes that the performance standard used for physical and chemical extraction--treatment to a clean debris surface--is not practicable for thermal desorption because treated debris surfaces will continue to have a dusting of residue after separation of the debris from

the residue by simple, physical or mechanical means (unless water washing is used). See discussion below regarding the requirement for separation of debris from residue.

The treatment standards for thermal desorption require, in addition to the case-by-case Agency approval of design and operating conditions, that hazardous contaminants be vaporized (by virtue of the definition of thermal desorption), and restricts the use of the technology for metal contaminants other than mercury (i.e., thermal desorption is not BDAT for metals other than mercury). In addition, to help ensure extraction of contaminants from below the surface of porous debris, the rule establishes a maximum thickness (in one dimension) for porous debris of 10 cm (4 inches)./35/ The 4 inch maximum thickness limit is consistent with state-of-the-art practices. The restriction on metals other than mercury is provided because they are not likely to be extracted from below the debris surface at normal desorption temperatures and residence times.

NOTE /35/ See previous discussion in the text that, if size reduction of debris to meet the treatment standards reduces the particle size to below the minimum 60 mm size limit for the definition of debris, such nondebris material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction.

We note that we considered restricting the use of thermal desorption for only porous debris that is contaminated with a metal other than mercury. We reasoned that metal contaminants in soil or waste on the surface of nonporous debris will be physically separated from the debris along with the soil or waste during or after desorption, and thus a restriction would not be necessary. However, we are also concerned about metal contaminants that may remain on the surface of nonporous (and porous) debris after desorption and after separation of the treated debris from the residue. An example is a piece of steel contaminated with a metal-bearing paint that causes the steel to fail the TC. The metal may not be desorbed and the paint would not be separated from the steel during the simple physical or mechanical separation of residue from debris. Although the steel would continue to fail the TC, it would have been treated to meet BDAT and could be land disposed in a subtitle C facility. This is inconsistent with the Agency's view that BDAT for a TC waste must cause the waste to no longer exhibit the TC.

The treatment standard for thermal desorption also requires separation of the treated debris from treatment residuals and soil, waste, or other nondebris material (collectively referred to as residuals) because residuals are subject to the treatment standards for the waste contaminating the debris. See discussion in Section V.E. Not only will these residuals contain unvolatilized metals that require further treatment, but the Agency is using the residue separated from debris as a surrogate means to ensure effective debris treatment. The rule achieves this objective by requiring that the residue separated from the treated debris must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. If the residue (prior to further treatment) does not meet applicable treatment standards for organic compounds, it is an indication that the desorption process did not effectively extract the organic contaminants subject to treatment. Thus,

the treatment is not BDAT, the treated debris is not excluded from subtitle C, and both the residues and the debris cannot be land disposed without further treatment.

Separation of the desorbed debris from treatment residuals (i.e., soil, waste, or other nondebris materials) must be accomplished using simple physical or mechanical means such as vibratory or trommel screens or water washing. The separation process need not produce a "clean debris surface" /36/ as discussed above, however; rather the debris surface must be free of caked residuals or nondebris materials such as soil or waste. For example, debris need not be water washed after trommel screening to remove dust from residuals or nondebris material. (Note that the use of water washing to separate thermally desorbed debris from residuals and nondebris materials need not comply with the treatment standards for water washing (e.g., treatment to a "clean debris surface") because the debris has already been treated by an alternative technology.)

NOTE /36/ "Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible soil, waste, paint, or other foreign (i.e., nondebris) matter, except that residual staining consisting of light shadows, slight streaks, or minor discolorations, and foreign matter in cracks and crevices may be present provided that such staining and foreign matter in cracks and crevices shall be limited to no more than 5% of each square inch of surface area.

c. Destruction Technologies. The Agency has identified two classifications of destruction technologies: chemical destruction and thermal destruction. These technologies are designed and operated to destroy hazardous contaminants on debris surfaces and in surface pores.

(1) Biodegradation. Biodegradation is the removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegradation of organic or nonmetallic inorganic compounds (i.e., inorganics that contain phosphorus, nitrogen, or sulfur) in units operated under either aerobic or anaerobic conditions. The rule establishes operating and performance standards and contaminant restrictions, and requires the treater to make a demonstration of "Equivalent Technology" under Sec.
268.42(b) to document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in Table 1, Sec.
268.45, such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent subtitle C control.

The Agency attempted to develop objective treatment standards that would obviate the need for an equivalency demonstration (see discussion above). The Agency determined, however, that it was very difficult to establish universal operating limits for the key operating parameters that affect treatment efficiency--type of matrix contaminating the debris, biological proprieties of the contaminant, temperature, pH, treatment time, biomass concentration, moisture level, and for aerobic biodegradation, oxygen concentration--that would strike a balance between ensuring treatment to minimum threat levels and establishing requirements that could grossly over-regulate in many situations. Rather, the Agency believes that operating requirements can best be determined on a case-by-case basis (i.e., under an equivalent technology demonstration under Sec. 268.42(b))

considering the parameters listed above.

In addition, the Agency believes that the performance standard used for physical and chemical extraction--treatment to a clean debris surface--is not practicable for biodegradation because treated debris surfaces are likely to fail that standard even though organic contaminants may have been destroyed and metal contaminants may have been extracted. Further, the Agency could not identify a generic standard that would ensure effective treatment of organic contaminants that may be beneath the surface of porous debris.

In addition to the requirement to make an equivalency demonstration, the treatment standards establish a maximum thickness (in one dimension) for porous debris of 1.2 cm (1/2 inch./37/ These requirements will help ensure extraction of contaminants from below the surface of porous debris.

NOTE /37/ See previous discussion in the text that, if size reduction of debris to meet the treatment standards reduces the particle size to below the minimum 60 mm size limit for the definition of debris, such nondebris material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction.

The rule also restricts the use of biodegradation for metal contaminants because metals are not destroyed by the biomass (i.e., biodegradation is not BDAT for metals). Further, the performance and design and operating standards would not ensure that undestroyed metal would partition to the biomass for treatment to the numeric standards for the waste contaminating the debris.

This is because the performance standard does not require treatment to a "clean debris surface" as discussed above, so that neither the performance standard nor the requirement to separate treated debris from residuals (see discussion below) would ensure that metal contaminants would partition to the residue.

The treatment standard for biodegradation requires separation of the treated debris from treatment residuals (i.e., soil, waste, or other nondebris material) because residuals are subject to the numerical treatment standards for the waste contaminating the debris. See discussion in section V.E. Not only will these residuals contain metal contaminants that require further treatment, but the Agency is using the residue separated from debris as a surrogate means to ensure effective debris treatment. Accordingly, the debris treatment standard also requires that the residue separated from the treated debris must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris prior to further treatment.

If the residue (prior to further treatment) does not meet applicable treatment standards for organic compounds, it is an indication that the biodegradation process did not effectively destroy the organic contaminants subject to treatment. Thus, the treatment is not BDAT, treated debris is not excluded from subtitle C, and both the residues and the debris cannot be land disposed without further treatment.

Separation of the biodegraded debris from treatment residuals, soil, waste, or other nondebris materials (collectively referred to as residuals and subject to the treatment standards for residuals) must be accomplished

using simple physical or mechanical means such as vibratory or trommel screens or water washing. The separation process need not produce a "clean debris surface" as discussed above, however; rather the debris surface must be free of caked biomass or nondebris materials such as soil or waste. For example, the use of water to wash off the biomass or other foreign matter from the debris after removal from the treatment process does not subject the debris to the treatment standards for water washing (e.g., treatment to a "clean debris surface"). This is because the debris has already been treated by an alternative technology.

(2) Chemical Destruction. The rule establishes two chemical destruction technologies as BDAT: Chemical oxidation and chemical reduction.

(a) Chemical Oxidation. Chemical oxidation is chemical or electolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combination of reagents: Hypochlorite (e.g., bleach); chlorine; chlorine dioxide; ozone or UV (ultraviolet light) assisted ozone; peroxides; persulfates; perchlorates; permanganates; and/or other oxidizing reagents of equivalent destruction efficiency. Chemical oxidation specifically includes what is referred to as alkaline chlorination.

The Agency was not able to develop objective performance or design and operation standards because of the variety of oxidation reagents that could be used and the variety of chemical and physical properties of debris and hazardous contaminants. In addition, the Agency believes that the performance standard used for physical and chemical extraction--treatment to a clean debris surface--is not practicable for chemical oxidation because treated debris surfaces are likely to fail that standard even though organic contaminants may have been destroyed and metal contaminants may have been extracted. Further, the Agency could not identify a generic standard that would ensure effective treatment of organic contaminants that may be beneath the surface of porous debris. Consequently, the primary treatment standard for chemical oxidation requires the treater to make a demonstration of "Equivalent Technology" under Sec. 268.42(b) to document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in Table 1, Sec. 268.45, such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent subtitle C control. See discussion above.

The rule also restricts the use of chemical oxidation for metal contaminants because metals are not destroyed by the chemical reagents (i.e., chemical oxidation is not BDAT for metals). Further, the performance and design and operating standards would not ensure that undestroyed metal would partition to the residue for treatment to the numeric standards for the waste contaminating the debris. This is because the performance standard does not require treatment to a "clean debris surface" as discussed above, so that neither the performance standard nor the requirement to separate treated debris from residuals (see discussion below) would ensure that metal contaminants would partition to the residue.

In addition, to help ensure effective treatment, the treatment standard requires that porous debris--brick, cloth, concrete, paper, pavement, rock, and wood--cannot have a thickness exceeding 1.2 cm (1/2 inch) /38/ prior to treatment to ensure effective treatment of contaminants absorbed beyond the debris surface.

NOTE /38/ See previous discussion in the text that, if size reduction of debris to meet the treatment standards reduces the particle size to below the minimum 60 mm size limit for the definition of debris, such nondebris material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction.

Finally, the rule requires that the treated debris must be separated from treatment residues, and that such separated residue must meet the waste-specific treatment standards for organic compounds for the waste contaminating the debris. See discussion above for rationale and information on how this provision works.

(b) Chemical Reduction. Chemical reduction is a chemical reaction utilizing the following reducing reagents (or waste reagents) or a combination of reagents: Sulfur dioxide; sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); sodium hydrosulfide; ferrous salts; and/or other reducing reagents of equivalent efficiency. The treatment standards for chemical reduction are identical to those for chemical oxidation because the technologies are based on similar chemical reactions.

(3) Thermal Destruction. Thermal destruction is treatment in an incinerator operating in accordance with subpart O of part 264 or 265, a boiler or industrial furnace operating in accordance with subpart H of part 266, or other thermal treatment unit operated in accordance with subpart X, part 264 (permit standards) or subpart P, part 265 (interim status standards).

As noted above in the discussion of treatment standards for thermal desorption, a thermal desorber is regulated either as an incinerator (if the device is direct-fired or if the off-gas is burned in an afterburner) under subpart O of part 264 or 265, or as a thermal treatment unit under subpart X, part 264 or subpart P, part 265. To distinguish between thermal desorption and thermal destruction (for which separate debris treatment standards are provided) for purposes of complying with this rule, the primary purpose of thermal desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or treatment. The definition of thermal destruction in Table 1, Sec. 268.45, specifically excludes thermal desorbers.

Today's rule requires that treatment residuals be separated from the debris and restricts the use of thermal destruction (i.e., thermal treatment is not BDAT) for inorganic debris contaminated with a metal other than mercury. In addition, if debris is contaminated with a dioxin-listed waste, thermal destruction is not BDAT and the treated debris is not excluded from subtitle C unless the treater makes an "Equivalent Technology" demonstration to the Agency under Sec. 268.42(b) that documents that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in Table 1, Sec. 268.45, such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent subtitle C control. (Note as discussed below that these restrictions do not apply to vitrification.)

Given that thermal destruction uses substantially higher temperatures and

often longer residence times than thermal desorption, the Agency believes that thermal destruction will destroy all but the most toxic hazardous nonmetal contaminants to minimum threat levels. Although metal contaminants will not be destroyed, metal contaminants in organic debris (e.g., wood, paper) will be removed from the treated debris. Metals in organic debris will partition to the residue (i.e., the material resulting from treatment that remains subject to numerical treatment standards) because the organic debris will be destroyed. Given that the treatment standards require separation of treated debris from the residue, the metals from the organic debris will partition to the residue for subsequent treatment to the waste-specific treatment standards for the waste contaminating the debris./39/ Thus, only metals contaminating inorganic debris (e.g., concrete, bricks) may remain untreated if they are not volatilized. To ensure treatment of such metals, the rule restricts the use of thermal destruction (i.e., thermal treatment is not BDAT) for inorganic debris contaminated with a metal other than the highly volatile mercury.

NOTE /39/ Although metals in soil or waste contaminating the debris may be removed by separation of the treated debris from these materials as the rule requires, metals in metal-bearing, heat resistant coatings on inorganic debris may neither be volatilized nor separated from the treated debris.

The treatment standards also require that the residue separated from the treated debris must meet the waste-specific treatment standards for the BDAT organic contaminants in the waste contaminating the debris prior to further treatment. This will help ensure that the thermal destruction unit has effectively destroyed organic contaminants in the debris.

In addition, the Agency is concerned that extremely toxic contaminants may not be destroyed (or removed with the residue) to levels that would not pose a hazard to human health and the environment absent subtitle C control.

Consequently, if debris is contaminated with a dioxin-listed waste, incineration is not BDAT for the debris and the debris is not excluded from subtitle C after treatment unless the treater obtains approval from the Director of the design and operating conditions of the thermal destruction unit. We considered applying this restriction only to porous, inorganic debris under the reasoning that the contaminants in dioxin-listed waste would partition to the residue for nonporous debris (e.g., metal) and organic, porous debris (e.g., wood). We were concerned, however, that if such contaminants remained undestroyed even at low concentrations in the residue and were not completely removed from the treated debris, that the debris could pose a health or environmental hazard absent subtitle C control. Given that the requirements for separation of residue and treated debris do not require a "clean debris surface" but, rather allow a dusting of residue to remain on the debris, we believe that it is prudent to establish this restriction on dioxin-listed waste.

Finally, we note that vitrification is a type of thermal destruction and that the rule establishes special (i.e., reduced) requirements for vitrification. Although the Agency classified vitrification as both thermal destruction and an immobilization technology at proposal (57 FR 1036), the Agency believes that the regulation is more easily understood if vitrification is classified only as thermal destruction with appropriate consideration given to the fact that vitrification heats the debris to

extremely high temperatures resulting in the formation of nonasbestiform glass. The fact that vitrification transforms debris into a glass-like residue is the basis for the special requirements established for vitrification: (1) The restriction on metal contaminants for porous, inorganic debris does not apply; and (2) the requirement for Agency approval of design and operating conditions to treat debris contaminated with dioxin- listed waste does not apply. Nonetheless, the vitrified residue, like all debris treatment residue, is subject to the waste-specific treatment standards for the waste contaminating the debris.

d. Immobilization Technologies. The Agency has identified three immobilization technologies as BDAT for hazardous debris: macroencapsulation, microencapsulation, and sealing. Immobilized debris must be land disposed in a subtitle C facility; /40/ it is not excluded from subtitle C regulation because the contaminants have not been destroyed or removed but rather contained indefinitely. Today's rule establishes only general, nonobjective performance standards for these technologies rather than the more prescriptive standards that were proposed (57 FR 1035-1036) because, based on public comment and the Agency's re-evaluation, the Agency is concerned that the proposed prescriptive standards may be overly restrictive (i.e., by requiring conditions that are more than necessary to ensure immobilization prior to subtitle C management) /41/ in some cases and ineffective in others.

Nonetheless, the Agency believes that the performance standards promulgated will substantially reduce the likelihood of migration of hazardous constituents from the debris as required by RCRA section 3004(m)(1).

NOTE /40/ In the Phase II land disposal restrictions rule, the Agency will reopen and request comment on the issue of whether immobilized debris should be excluded from subtitle C regulation.

NOTE /41/ For example, by requiring a minimum 7 day cure time for microencapsulation when some reagents can adequately stabilize some debris types in much less time.

(a) Macroencapsulation. Macroencapsulation is the application of surface coating materials such as polymeric organics (e.g., resins and plastics) or the use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media. The treatment standard requires that the encapsulating material must completely encapsulate the debris (i.e., the encapsulant must completely surround the debris and be unbroken).

Further, the encapsulating material must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes) to ensure that the likelihood of migration of toxic contaminants has been substantially reduced.

(b) Microencapsulation. Microencapsulation is stabilization of the debris with the following reagents (or waste reagents) such that the leachability of the hazardous contaminants is reduced: Portland cement; or lime/pozzolans (e.g., fly ash and cement kiln dust). Reagents (e.g., iron salts, silicates, and clays) may be added to enhance the set/cure time

and/or compressive strength, or to reduce the leachability of the hazardous constituents. The performance standard for microencapsulation requires that the leachability of the hazardous contaminants must be reduced.

We note that the proposed rule would have prohibited the presence of free liquids in the microencapsulated debris. Today's rule does not provide this explicit prohibition because free liquids are prohibited from land disposal facilities under existing requirements--Sec. 264.314 or 265.314.

If the treater reduces the particle size of debris to make it amenable to microencapsulation so that the debris no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste before size reduction. This is consistent with the Agency's position that material with a particle size less than 60 mm is amenable to conventional treatment for process waste and small particle-sized material (i.e., as opposed to large debris objects) and that such material can be reasonably sampled for analysis to document compliance with the concentration-based treatment standards for the waste contaminating the material.

If the debris has been cleaned and separated from contaminated soil and hazardous waste /42/ before size reduction, the material remains classified as debris subject to today's treatment standards even if it no longer has a 60 mm particle size. The Agency believes that cleaning and separation of contaminated soil and hazardous waste will substantially reduce the concentration of toxic constituents such that, upon microencapsulation and placement in a subtitle C unit, the toxic constituents should not pose a hazard to human health and the environment.

NOTE /42/ We note that mixtures of contaminated soil, waste, and debris are regulated as debris if the mixture is at least 50% debris by volume. Thus, materials regulated as debris may contain high concentrations of toxic constituents.

The level of cleaning and separation that is required is the same as required for separation of treatment residue from treated debris. See Note 9 to Table 1, Sec. 268.45. At a minimum, simple physical or mechanical methods must be used such as vibratory or trommel screening or water washing. The debris surface need not be cleaned to a "clean debris surface" as defined in Table 1; rather, the surface must be free of caked soil, waste, or other nondebris material. Nondebris materials so separated are subject to the waste-specific treatment standards for the waste contaminating the material.

(c) Sealing. Sealing is the application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds; paint may not be used as a sealant.

The performance standard requires that the sealing must be performed to avoid exposure of the debris surface to potential leaching media--that is,

the sealant must completely enclose the debris. Further, the sealant must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes) to ensure that the likelihood of migration of toxic contaminants has been substantially reduced.

e. Changes to the Proposed Rule. In addition to the changes from proposal discussed above, today's final rule greatly simplifies presentation of the treatment standards. Proposed Table 1 (indicating by YES or NO which technologies would be BDAT for which debris types when specific contaminant categories were present) and Table 2 (classifying contaminants by category) are not promulgated. Nonetheless, the final rule will operate essentially as the Agency had intended for the proposal rule. Rather than explicitly identifying acceptable technology/debris/contaminant combinations in two tables and providing the performance or design and operating standards in a third table as proposed, the final rule establishes the treatment standards in a single table--Table 1 of Sec. 268.45. Not only was the proposed approach confusing, but proposed Table 1 forced unintended consequences.

Proposed Table 1 would have prohibited the use of particular technologies to treat certain debris types contaminated with certain hazardous constituents. In most cases, the proposed prohibition was based on the impracticability of applying the technology to the debris type rather than a determination as to whether the technology would effectively treat the debris if it was (or could be) applied. An example is the proposed prohibition on using abrasive blasting for paper, cloth, rubber, and plastic. The Agency has determined that abrasive blasting should be allowed for these types of debris because they may be mixed with debris that is amenable to the technology and would be converted to a treatment residue. An example is a steel I-beam that has paper labels on it. If abrasive blasting was used to treat the I-beam, the performance standards would ensure that the paper labels became part of the treatment residual subject to the treatment standard for the waste contaminating the debris.

We note, however, that depending on the type of contaminants subject to treatment and the technology selected to treat the debris, more than one treatment technology may be required to meet the standards. For example, if water washing was used as an extraction technology for a porous debris (e.g., concrete) with a contaminant subject to treatment that was not soluble to at least 5% by weight in the water solution, another technology (e.g., thermal desorption) must be used to treat that contaminant.

In summary, today's final rule uses the definition of the technology, the performance or design and operating standards, and the contaminant restrictions provided by Table 1 of Sec. 268.45 to ensure effective treatment of hazardous debris.

6. Treatment of Characteristic Debris

EPA proposed that debris that exhibits a characteristic of ignitability or reactivity, or that is contaminated with wastes that are ignitable, reactive, or corrosive, be treated to deactivate the waste. See 57 FR 1021. The Agency solicited comment on the question of whether such debris should also be treated for all Appendix VIII constituents that could reasonably be expected to be contaminating the debris (see 57 FR 984-85), and whether simple dilution should be allowed as a means of achieving deactivation, id.

at 990.

In the third third final rule, EPA established deactivation as a treatment standard for certain ignitable, corrosive, and reactive wastes, and allowed dilution as a means of achieving this standard. In large part, this was due to the enormous diversity of wastes exhibiting these characteristics and the difficulty of ascertaining the existence or extent of contamination not attributable to the characteristic property itself for this enormously disparate group of wastes. See 55 FR 22654. These concerns are less apparent for debris exhibiting ignitability or reactivity, or contaminated with ignitable, corrosive or reactive wastes, because there appears to be much less of it (almost no debris could be ignitable, given that most ignitable wastes must be liquids (see Sec. 261.21(a) (1) and (2)), none is corrosive (only liquids can be corrosive wastes), and also because a large proportion of debris would likely be contaminated with hazardous constituents because most hazardous debris comes from remediation sites. Id. at 985.

Most commenters opposed requiring treatment for specific hazardous contaminants. They also urged that all dilution be allowed as a form of treatment. Some commenters argued that this result was compelled by the statute. (This issue is presently awaiting decision by a panel of the District of Columbia Circuit Court of Appeals.) Others expressed concern with the practical difficulties inherent in sampling for hazardous constituents, or otherwise ascertaining their presence.

After considering the record, the Agency has decided to adopt the same treatment standards for ignitable, corrosive, or reactive (ICR) debris as for other hazardous debris because ICR debris is just as likely to be contaminated with hazardous constituents. See 55 FR 22654. (EPA will subcategorize ICR wastes and develop specific treatment standards, rather than allowing all types of dilution as treatment when a specific toxicity threat is apparent.) We are adopting a treatment standard of deactivation for these wastes but are requiring that the standard be achieved by use of the treatment methods adopted for other debris, unless the generator or treater demonstrates to the Agency that the debris does not contain toxic constituents. See discussion on codification of the contained-in principle above in Section V.B.2.b. (If necessary, petitioners could also make an equivalency demonstration under Sec. 268.42(b) if they wish to treat by some means other than one of the methods set out in the rule.) This will result in some treatment of hazardous constituents that are present, rather than allowing simple dilution to be used. (Many treatment methods for debris involve some type of dilution, and are permissible under today's rule. The effect of today's rule is to prohibit dilution other than that occurring as a result of a designated treatment method. An example of impermissible dilution could be packing ignitable, corrosive, or reactive debris in sand.) In addition, the types of concerns voiced by the Agency in the third third rule against adopting this type of standard for all ignitable, corrosive, and reactive wastes are not present for debris. The Agency is not requiring identification of hazardous contaminants that may be present, as proposed, in part due to the practical concerns voiced by commenters, in part because the Agency is not adopting this approach for other debris, and because most of the treatment methods will provide some treatment of most if not all hazardous contaminants.

EPA is not providing the option of treating by existing treatment standards for these wastes. This is because the existing treatment standard

for most ignitable, corrosive, or reactive wastes can be achieved by deactivation involving any type of dilution. Since this is the very result that the Agency is seeking to avoid, EPA is indicating in the rule that this option is not available for this one class of debris.

EPA noted at proposal that special rules would be needed for debris that is reactive due to presence of cyanide in order that cyanide by treated adequately. See 57 FR 990. We are adopting this approach in the final rule. Any such debris must therefore be treated by one of the specified technologies for which the treatment standards can be achieved for cyanide. In addition, any residues of such treatment may not be disposed until cyanide is treated to levels established in existing Table CCW of Sec. 268.43 (the treatment standard for waste that is reactive because of cyanide). This approach is consistent with that adopted for reactive cyanide wastes in the third third rule and should ensure that the cyanide known to be present is treated adequately before land disposal.

7. Special Requirements for Inherently Hazardous Debris

The proposed rule also considered the regulatory status of debris that is itself hazardous because it is fabricated with toxic constituents. Because such debris will continue to exhibit the toxicity characteristic after treatment by an extraction or destruction technology, today's rule requires treatment by an immobilization technology to reduce the likelihood of migration of hazardous contaminants. See Sec. 268.45(b)(4). Examples are lead pipe, or refractory brick containing chromium. See 57 FR 990. (This debris is referred to in this preamble discussion as "inherently hazardous debris".) Such debris can also be contaminated with listed wastes. In the proposed rule, the Agency discussed how the land disposal restrictions would apply if such debris were disposed of, and also indicated that an alternative for much of this debris would be to recycle it as scrap metal, in which case an existing regulatory exemption could apply. id. EPA also solicited comment on what standards should apply to residues from treating inherently hazardous debris, and also requested comment on whether there were situations when immobilization would not be an appropriate treatment technology for such debris. Id. at n. 26 and 990-91.

The Agency is essentially adopting the proposed approach in the final rule. However, some of the issues raised in the proposal require additional clarification, which is provided below.

a. Inherently Hazardous Debris that Is Disposed. When recycling of inherently hazardous debris is not practicable and it is to be disposed, today's rule requires treatment by an immobilization technology to reduce the likelihood of migration of hazardous contaminants, followed by disposal in a subtitle C facility. In response to commenters' concerns about the need for size reduction for immobilization, we note that the treatment standards for macroencapsulation and sealing may be achieved in some cases without size reductions./43/

NOTE /43/ Certainly, size reduction to that normally achieved prior to microencapsulation is not necessary.

A number of commenters questioned whether any treatment was needed to be performed on inherently hazardous debris or whether it could simply be disposed directly. The statute forecloses that option. Section 3004(m)(1)

indicates that the Agency is to establish "levels or methods of treatment, if any" which substantially reduce waste toxicity and mobility and minimize threats. If there are not such methods, the situation EPA believes contemplated by the clause "if any" in section 3004(m), the waste cannot be land disposed. See section 3004 (d), (e), and (g); see also API v. EPA, 906 F. 2d 729, 738 (D.C. Cir. 1990) (use of comparative risk assessment to compare safety of treatment methods versus land disposal of untreated wastes is unnecesary given that the statute forecloses land disposal as an option).

Thus, some treatment of inherently hazardous debris is needed in order for it to be land disposed. As indicated above, the Agency believes that such methods exist (i.e., immobilization).

If inherently hazardous debris is also contaminated with listed wastes, then that waste also must be treated by one of the prescribed treatment methods, the same approach adopted for all other debris. Note that the contaminants in the waste contaminating the debris need not be treated prior to immobilization of the debris if the performance standards for the immobilization technology can be achieved without such prior treatment.

Residues from treating inherently hazardous debris would not require further treatment unless the residues also exhibited a prohibited hazardous waste characteristic. However, if the inherently hazardous debris is contaminated with a listed waste, residues from treating the debris would remain subject to the numerical standards applicable to that listed waste.

Furthermore, if the debris were treated first to remove or destroy the listed waste (i.e., treated by an extraction or destruction technology prescribed in today's rule) and subsequently treated again by immobilization due to its inherent content, the Agency would not consider the debris to be contaminated any longer with a listed waste, since the initial treatment would have removed or destroyed it. Thus, any residues from subsequent immobilization would not be subject to treatment standards unless those residues exhibited a characteristic. For example, if lead pipe contaminated with listed solvents was first treated to remove the solvent and then treated to immobilize the lead, only residues from removing the solvent would have to meet the numerical solvent treatment standards. This approach mirrors that adopted for all other hazardous debris.

b. Inherently Hazardous Debris that Is Scrap Metal and Is Recycled. EPA's rules provide for an exemption from regulation for scrap metal that is recycled. See Sec. 261.6(a)(3)(iv); scrap metal is defined at Sec. 261.1(c)(6). EPA consequently indicated at proposal that the land disposal prohibitions would not apply to inherently hazardous debris that was also scrap metal being recycled. EPA adheres to that approach, which simply restates current rules (and was not reopened for reconsideration). The only obligation for generators handling such scrap metal is to keep a record of the scrap and its subsequent disposition or recycling by metal reclamation. See Sec. 268.7(a)(6). If the scrap metal is also contaminated with listed waste, the exemption continues to apply since the material would still meet the regulatory definition of scrap metal. However, any residues from processing the waste would remain hazardous by the derived from rule, and would require treatment to meet the standard for that listed waste before it could be land disposed. Thus, persons treating such scrap metal would become hazardous waste generators, and would also incur responsibilities under the land disposal restriction rules (see Sec. 268.7(a) (1) and (2)). As explained in the previous section, however, if the scrap metal were to

be treated first by a prescribed removal or destruction technology, it would no longer be considered to be contaminated with a listed waste, and any residues generated subsequently would not be hazardous wastes unless they exhibited a hazardous waste characteristic. Thus, it may be advantageous to arrange for pretreatment of contaminants before this type of scrap metal is recycled.

c. Status of Stainless Steel Debris. The Agency provided an example in the proposed rule of demolition of a building containing stainless steel fixtures and indicated that if a representative sample of the demolition debris exhibited a characteristic debris would be hazardous waste. The Agency noted that stainless steel could also be removed before demolition and managed separately, perhaps by recycling it as scrap metal. See 57 FR 990.

In providing this example, the Agency was not stating that discarded stainless steel artifacts are hazardous wastes, and in fact has no information indicating that such materials, much less demolition debris containing small bits of stainless steel, would exhibit a characteristic. Although it may be worthwhile (for environmental and economic reasons) to remove metal artifacts for recycling rather than destroying them when demolition occurs, today's rule does not mandate any such conduct.

8. Relationship of the TSCA PCB Rules to Today's Rule

As proposed, the final rule requires that hazardous debris that is also a waste PCB under 40 CFR part 761 must comply with both the applicable PCB requirements and today's debris treatment standards, by satisfying the more stringent applicable requirements.

The treatment standards for hazardous debris also apply to debris contaminated with both PCBs and RCRA hazardous wastes. See Sec. 268.45(a)(5). This is consistent with the approach taken in the third third final rule. See 55 FR 22678 (June 1, 1990). Debris treated to today's performance standards by an extraction or destruction technology (and that does not exhibit a hazardous characteristic) remains subject only to TSCA rules because it is excluded from subtitle C regulation, whereas debris treated by an immobilization technology remains subject to applicable requirements under both statutes.

Under the Toxic Substances Control Act (TSCA), disposal of debris contaminated with PCBs is regulated under 40 CFR 761.60. In addition, disposal of debris and materials resulting from the cleanup of certain PCB spills is subject to the PCB Spill Cleanup Policy, as provided under 40 CFR 761.125.

9. Relationship of Existing Agency Standards for Asbestos to Today's Rule

As proposed, the Agency is today requiring that the treatment standards for hazardous debris also apply to debris subject to standards for asbestos under OSHA, TSCA, and NESHAPs./44/ EPA acknowledges that many of the treatment technologies specified in today's rule for hazardous debris would not be practicable for asbestos debris because of the potential for occupational exposure or environmental release of asbestos. However, the Agency believes that several technologies could be used to treat hazardous

debris in compliance with the applicable OSHA, NESHAPs, and TSCA by using filtration devices on air and water emissions to control asbestos--water washing and spraying; liquid phase solvent extraction; vapor phase solvent extraction; biodegradation; chemical oxidation; chemical reduction; and macroencapsulation.

NOTE /44/ For a summary of OSHA, TSCA, and NESHAP controls on asbestos, see the proposed rule at 57 FR 993-994.

The Agency considered the argument made by several commenters that asbestos-contaminated hazardous debris and hazardous debris contaminated with asbestos should be managed according to existing EPA and OSHA regulations (i.e., bagging) and placing the bagged material in a subtitle C facility. The Agency agrees with the commenters that, if bagging meets the performance standard for macroencapsulation, such debris may then be disposed of in a subtitle C facility.

10. Special Requirements for Radioactive Debris

The Agency is today requiring that hazardous debris that is subject to regulations under the Atomic Energy Act (AEA) because of its radioactivity (i.e., mixed waste) is also subject to today's debris treatment standards./45/ This is consistent with the Agency's regulation of the waste that is contaminating the debris--if a prohibited waste is also a mixed waste, it is nonetheless subject to the treatment standards for the waste.

NOTE /45/ We note that the Agency has established treatment standards in Sec. 268.42 for several types of radioactive wastes (e.g., D008: Radioactive lead solids subcategory) that may be generated in particle sizes greater than 60 mm, the minimum size limit for debris. Nonetheless, such wastes are excluded from the definition of debris (see Sec. 268.2(g)) and are subject to the waste-specific treatment standards.

Commenters expressed concern that the treatment of certain radioactive mixed waste debris may pose an unreasonable risk to human health and the environment due to the radiological nature of the waste. The Agency understands commenters' concerns but believes that there is sufficient flexibility in the debris treatment standards to enable generators or treaters to select a technology that will effectively treat the hazardous contaminants without posing an unreasonable risk to human health and the environment because of the radiological nature of the waste.

11. Documentation of Compliance With the Treatment Standards

When hazardous debris is treated to today's treatment standards, treaters must comply with the applicable residue analysis, notification, certification, and recordkeeping and requirements of revised Sec. 268.7. In today's rule, the Agency has revised several paragraphs in Sec. 268.7 and added one paragraph to accommodate hazardous debris.

Paragraph (a)(1) is revised to require generators who ship their hazardous debris to a storage or treatment facility to provide a notice that includes

the information already required for restricted wastes as well as a listing of the contaminants subject to treatment. This will assist the treater in determining which treatment technology is appropriate for the debris. In addition, the notice must inform the treater that the debris is subject to (i.e., eligible for) the alternative treatment standards of Table 1; Sec. 268.45.

Paragraph (a)(2) is revised to exempt generators of hazardous debris who obtain a determination from the Agency that the debris does not contain hazardous waste (see Sec. 261.3(e)(2)) from the notification requirements of that paragraph for facilities receiving the shipment. Given that such debris is no longer hazardous waste, the notification requirement is not necessary.

Paragraph (a)(3) is revised to require generators whose restricted hazardous debris is not yet prohibited debris (because of, for example, the capacity variance discussed in section V.G below) to provide a notice that includes the information already required for restricted wastes as well as a listing of the contaminants subject to treatment and a statement that the debris is subject to (i.e., eligible for) the alternative treatment standards of Table 1, Sec. 268.45. See discussion above for the rationale for requiring that this additional information be submitted to the receiving facility.

Paragraph (a)(4) is revised to exempt generators who treat their debris by one of the technologies specified in Table 1, Sec. 268.45, from the waste analysis requirements of that paragraph. As discussed elsewhere in today's notice, the debris treatment standards are technology-specified standards rather than numerical concentration standards. Thus, analysis of the debris is generally not necessary (except to determine where knowledge about the debris is not available whether the debris exhibits a characteristic of hazardous waste).

Paragraph (b)(4) is revised to exempt facilities that treat hazardous debris so that it is excluded from the definition of hazardous waste under Sec. 261.3(e) (i.e., debris treated by an extraction or destruction technology provided by Table 1, Sec. 268.45, and debris that the Agency has determined does not contain hazardous waste) from the notification requirements of that paragraph. Paragraph (b)(4) requires treaters of prohibited waste to notify the land disposal facility receiving each shipment of waste of information including the treatment standards applicable to the waste. We revised this requirement because notification of receiving facilities is not necessary for debris that is excluded from subtitle C regulation. We note, however, that treaters of excluded debris are subject to the new notification (to EPA) and certification requirements provided by paragraph (d), as discussed below.

Paragraph (b)(5) is revised to exempt facilities that treat hazardous debris so that it is excluded from the definition of hazardous waste under Sec. 261.3(e) from the certification requirements of that paragraph. Such facilities are subject to the new certification requirements, however, provided by paragraph (d), as discussed below.

Finally, paragraph (d) is added to subject generators and treaters who first claim that their debris is excluded from the definition of hazardous waste under Sec. 261.3(e) to notification and certification requirements. Such generators and treaters are required to submit to EPA a one-time

notice identifying the name and address of the subtitle D facility receiving the excluded debris, a description of the debris before treatment (i.e., as- generated), and, if the debris is excluded because it was treated by an extraction or destruction technology specified in Table 1, Sec. 268.45 (i.e., it is not excluded as a result of a contained-in determination), the treatment technology used. The Agency will use this information for enforcement purposes. Not only will the notification identify those facilities that claim that hazardous debris is excluded from regulation, but the information on the type of debris treated and the technology used will enable the Agency to establish a priority for inspections taking into account how difficult it may be to treat the debris to the performance and design and operating standards with the selected technology.

In addition, for debris treated by a technology specified in Table 1, Sec. 268.45 (i.e., debris not excluded as a result of a contained-in determination), the treater must document and certify compliance with the treatment standards specified in Table 1. The rule requires the treater to record in the facility's files all inspections, evaluations, and analyses (e.g., determinations that a physical extraction technology has removed at least 0.6 cm of the debris surface and that the debris is treated to a "clean debris surface") of the treated debris that the treater made to determine compliance with the standards, as well as any data or information pertaining to key operating parameters the treater may have generated during treatment of the debris (e.g., exit gas temperature and feed rate, of a thermal desorber). The rule also requires the treater to place a certification in the facility's files for each shipment of excluded debris that the debris has been treated in accordance with the standards specified in Table 1. These requirements will enable the Agency to enforce the debris treatment standards.

D. Exclusion of Hazardous Debris From Subtitle C Regulation

Under today's rule, hazardous debris may be excluded from subtitle C regulation either by: (1) the Agency's determination that the debris no longer contains hazardous waste (i.e., the contained-in policy discussed in section V.B.2) as provided by new Sec. 261.3(e) (2); or (2) by compliance with the debris treatment standards for extraction or destruction technologies for exclusion from subtitle C provided in Table 1 of Sec. 268.45 (and provided the debris does not exhibit a hazardous characteristic after treatment). The basis for excluding debris determined to no longer contain hazardous waste is discussed above in section V.B.2. We discuss here the basis for excluding from subtitle C regulation debris that is treated to meet today's performance standards requisite to such exclusion.

1. Basis for Excluding Debris Treated by Extraction or Destruction Technologies and That Is Not Characteristic

Debris treated by a prescribed extraction or destruction technology and that does not exhibit a hazardous characteristic is excluded from subtitle C regulation. As discussed in section V.C.5 above, the Agency has given careful consideration as to whether each debris/contaminant type would be effectively treated by each BDAT technology to levels that present minimum risk (i.e., would no longer pose a hazard to human health or the environment). The Agency believes that debris treated to those standards

would pose minimum risk for a number of reasons. First, the Agency has deleted two technologies (i.e., electropolishing and ultraviolet radiation) from the proposed list of BDAT technologies because they are not likely to provide effective treatment.

Second, the final rule requires separation of nonempty intact containers of hazardous waste from debris for treatment to the waste-specific treatment standards. Thus, containerized waste that is readily amenable to separation from debris by equipment operators in the field and that may have high concentrations of toxic constituents will be subject to concentration-based, waste-specific treatment standards rather than to the debris standards.

Third, the final rule raises the particle size used to define debris from 9.5 mm to 60 mm and applies the size limit to all debris, not just geologic matter. Thus, materials that should be amenable to treatment methods for process waste are subject to the waste-specific treatment standards rather than to the debris standards. Fourth, the final rule specifically excludes process waste of any particle size (e.g., slag) from the definition of debris. Thus, process wastes with potentially high concentrations of hazardous constituents will be subject to the waste-specific treatment standards rather than to the debris standards.

Most important, the performance and design and operating standards that the rule establishes for exclusion of treated debris from subtitle C are rigorous standards. Examples are the requirements that physical extraction technologies treat metal to a "clean metal finish" and other debris surfaces to a "clean debris surface". A minimum of 0.6 cm of the surface layer of porous debris must be removed as well. Another example is the maximum thickness standard for porous debris that is to be treated by chemical extraction.

For several technologies, the Agency was concerned that the performance and design and operating standards may not ensure treatment to minimum risk levels. Consequently for these technologies--thermal desorption, biodegradation, chemical oxidation and reduction and thermal destruction of debris contaminated with dioxin-listed wasted /46/--treated debris would be excluded only after the treater successfully makes an equivalent technology demonstration to the Agency under Sec. 268.42(b) documenting that the technology treats a particular type of debris/contaminant combination as effectively as the other BDAT technologies to residual levels of hazardous contaminants that would not pose a hazard to human health and the environment absent management controls.

NOTE /46/ Note that the standards provide other restrictions for debris contaminated with dioxin-listed waste.

Finally, the rule requires separation of the treated debris from all treatment residues, including soil, waste, or other nondebris material that could remain adhered to the debris surface. This will ensure that metal contaminants in the residue will not continue to contaminate the treated debris and that any waste or contaminated soil in a primarily debris mixture as it was generated is separated from the treated debris prior to exclusion from subtitle C.

The philosophy underlying this approach is similar to that contained in principle: It is not normally the debris itself that is hazardous, but

rather hazardous waste that is contaminating the debris. Thus, the goal of treatment should be to destroy or remove the contamination (if possible) and if this is achieved, to dispose of the cleaned debris as a nonhazardous waste. The removed residues from this treatment contain the contamination, and must meet numerical concentration levels before they can be land disposed.

Not only are the treatment methods developed to achieve this objective, but the various separation requirements (both before and after treatment) forcing removal of all nondebris materials such as soil and other wastes, and the definition of debris itself (which limits the debris classification to materials most amenable to the treatment methods, and classifies materials most amenable to meaningful sampling as nondebris subject to numerical treatment standards) are intended to achieve the same goal. As discussed above, the debris treatment standards are written wherever possible as performance standards to ensure that contamination is in fact removed from the debris. In addition, the rule specifies which contaminants are unsuitable for certain of the treatment methods. In short, the Agency believes that treatment of contaminated debris by the methods established here will result in clean debris which may then be land disposed, and should also no longer be regulated as a hazardous waste.

EPA notes, however, that the notion of excluding wastes from subtitle C regulation without sampling for hazardous constituent concentration levels is potentially at odds with many of the approaches recently proposed for public comment in the Hazardous Waste Identification Rule (HWIR). See 57 FR (May 20, 1992). In that rule, the Agency asked for comment on means of identifying and excluding hazardous wastes from subtitle C regulation that potentially take into account presence of a majority of the hazardous constituents listed in appendix VIII of part 261. If these approaches are adopted, they could provide a principled means of evaluating wastes heretofore excluded from subtitle C regulation without requiring analysis of hazardous constituent concentrations, such as the debris being excluded in today's rule, or residues from "empty containers" discussed above in Section V.B.2. EPA expects that hazardous constituent levels in debris treated by the methods adopted today will be consistent with levels resulting from the May 20 proposal, and in addition, for many types of treated debris there remain difficulties in obtaining representative samples necessary to make hazardous waste identification and listing determinations, and for this reason is finalizing the rule today rather than delaying action pending the results of the May 20 rulemaking. Nevertheless, the Agency believes it an appropriate issue for comment in the HWIR rulemaking the extent to which those standards should be used to replace exclusions from the definition of hazardous waste that are established without requiring analysis of hazardous constituent levels in the excluded waste.

2. Rationale for Continued Subtitle C Regulation of Debris Treated by Immobilization

Debris treated by an immobilization technology would remain subject to subtitle C regulation. EPA currently has insufficient data to demonstrate generically that debris which can be contaminated with both organic and inorganic constituents would be nonhazardous when treated by any of the immobilization technologies. Until the Agency gathers further data, EPA is concerned that, absent subsequent subtitle C management, hazardous

contaminants may migrate from certain immobilized debris at levels that could pose a hazard to human health and the environment. Thus, EPA believes it inappropriate to promulgate a self-implementing exclusion at this time.

Nonetheless, in the Phase II land disposal restrictions rule, the Agency will reopen and request comment on the issue of whether immobilized debris should be excluded from subtitle C regulation. The Agency plans to investigate this issue further and will publish in the Phase II proposed rule any information or data that are available. In addition, the Agency will specifically explore the potential of using the TCLP, and if so, under what circumstances, in determining whether immobilized hazardous debris should be excluded from subtitle C control. To assist the Agency in this effort, we ask for data on the performance of specific immobilization technologies and short- or long- term leachibility studies. Based on past experiences, the Agency has found that uncertainty over the technical performance of immobilization precludes a general exemption from subtitle C for all types of immobilized hazardous debris. However, the Agency will continue to evaluate all available and new information about the performance of immobilization technologies which could limit the technical uncertainty. To the extent that sufficient information that meets proper quality assurance/quality control procedures is available, the Agency plans to propose in the Phase II LDR rule an exclusion from subtitle C for those immobilized hazardous debris.

E. Regulation of Treatment Residuals

1. Overview

In this section, we discuss: (1) The rationale for subjecting treatment residues to the waste-specific treatment standards for the waste contaminating the debris; (2) separation of treated debris from treatment residue; (3) special requirements for debris treated by spalling; (4) special requirements for residue from the treatment of debris contaminated with cyanide reactive waste; and (5) special requirements for ignitable wastewater residue.

2. Treatment Residues Are Subject to the Waste-Specific Treatment Standards for the Waste Contaminating the Debris

Residuals from the treatment of hazardous debris are subject to the waste-specific treatment standards for the waste contaminating the debris. The residual must be treated to those standards for all BDAT constituents specified in Secs. 268.41, 268.42 and 268.43 for the waste.

The Agency had proposed to require treatment of nonsoil residuals to the multi-source leachate F039 levels and soil residuals to the waste-specific treatment standards for the waste contaminating the debris. Based on public comment and the Agency's re-evaluation of this issue, the Agency had determined that it is more appropriate to subject all treatment residues-- soil, wastewater, and nonwastewater--to the waste-specific treatment standards for the waste contaminating the debris for a number of reasons.

First, the waste-specific treatment standards currently apply to treatment residuals, and the Agency does not know of a compelling reason to change that position. Second, requiring compliance with the waste-specific treatment standards rather than the F039 standards may be somewhat easier

to understand and implement because the treatment standards for the BDAT constituents in the residue can be determined at the same time that the BDAT constituents are identified as contaminants subject to treatment (i.e., the contaminants subject to treatment in the contaminated debris are the same contaminants that must be treated in treatment residuals). Third, the Agency is considering simplifying and revising the treatment standards for all prohibited waste to "universal standards" in the Phase II proposed land disposal restrictions rule.

Several commenters suggested that the thermal destruction process of vitrification should be considered immobilization of debris. Thus, commenters argued that such vitrified debris could be land disposed under subtitle C without being subject to the waste-specific treatment standards for the waste contaminating the debris. The Agency disagrees with this view. Vitrification is a type of thermal destruction that produces a residue that is vitrified.

Thus, the vitrified residue is subject to the same treatment standards as any debris treatment residue--the waste-specific standards for the waste contaminating the debris. This is consistent with the Agency's position that slag from high temperature metals recovery is residue, not debris, subject to the waste-specific treatment standards.

3. Treated Debris Mixed With Treatment Residue Is Subject to Regulation as Residue

As discussed above in section V.C.5, treatment residues generally contain high levels of toxic contaminants removed from the debris. Examples are residue from thermal desorption or incineration of debris contaminated with metal-bearing waste, and residue from water washing of debris. As discussed below, treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris. Thus, to ensure that treatment residuals are treated effectively before land disposal and to ensure that treated debris is not contaminated with the treatment residue, the treatment standards require that the treated debris must be separated from the treatment residue. If the debris is not separated from the treatment residue, it remains a prohibited waste and may not be land disposed. It also remains subject to all other subtitle C standards.

The Agency defines treatment residuals as residuals such as biomass from biodegradation and ash from incineration as well as soil, waste, or other nondebris material that may remain adhered to the treated debris. We note further that slag from a high temperature metals recovery furnace and vitrified residue from a thermal destruction unit are treatment residues rather than debris. In both cases, the original debris no longer exists and the residuals from soil or waste contaminating the debris are integral components of the slag and vitrified residue.

Separation of the treated debris from treatment residuals must be accomplished using simple physical or mechanical means such as vibratory or trommel screens or water washing. The separation process need not produce a "clean debris surface" /47/ as discussed above, however; rather the debris surface must be free of caked residuals or nondebris materials such as soil or waste. For example, thermal desorption debris need not be water washed after trommel screening to remove dust from residuals or nondebris material.

(Note that the use of water washing to separate thermally desorbed debris

from residuals and nondebris materials need not comply with the treatment standards for water washing (e.g., treatment to a "clean debris surface") because the debris has already been treated by an alternative technology.)

NOTE /47/ "Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste, except that residual staining consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and soil and waste in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

4. Special Requirements for Debris Treated by Spalling

As proposed and as discussed in Section V.C.5, debris removed by spalling remains debris subject to the debris treatment standards. Debris surfaces removed by spalling are, by definition of the technology, large pieces of debris. The Agency believes that such pieces of spalled debris are more debris-like than waste or residual-like and are more amenable to treatment by the debris treatment standards than the waste-specific treatment standards.

5. Special Requirements for Residue From the Treatment of Debris That Is Cyanide-Reactive

As proposed, the final rule requires that residues from the treatment of debris that is reactive because of cyanide is subject to the waste-specific treatment standards for cyanide under Sec. 268.43. As with cyanide-reactive waste, EPA believes that BDAT for cyanide-reactive debris requires treatment of cyanide because of its toxicity.

6. Special Requirements for Ignitable Nonwastewater Residue

As proposed, the final rule requires that ignitable nonwastewater residue containing greater than or equal to 10% total organic carbon be subject to the technology-based standards for D001: "Ignitable Liquids based on 261.21(a)(1)" under Sec. 268.42. This residue must be treated by fuel substitution (i.e., burning as fuel in a boiler or industrial furnace), recovery of organic constituents (e.g., distillation, carbon adsorption), or incineration. EPA has established these technologies as BDAT for high total organic carbon ignitable liquids because they will effectively remove or destroy the toxic organic constituents.

F. Permit Requirements for Treatment Facilities

Treatment of hazardous debris (except as discussed below for 90-day on-site treatment in a container, tank, or containment building) is currently subject to the applicable interim status and permit standards of parts 264, 265, 266, and 270 that ensure protection of human health and the environment from the operation of the treatment unit. (We note that, for containment buildings, interim status and permit standards and requirements for 90-day on-site treatment are promulgated in today's rule as discussed elsewhere in this notice.) Today's debris treatment standards to implement

the land disposal restrictions of section 3004(m) of the statute do not affect those existing facility standards. For example, today's treatment standards do not reopen interim status eligibility for debris treatment facilities. (We note, however, that today's rule does establish the interim status eligibility date for containment buildings given that these units are newly regulated by this rule, assuming that such buildings are located at facilities containing no other regulated units.) Rather, today's debris treatment standards subject generators and treaters to additional requirements to ensure effective treatment of hazardous debris prior to exclusion from subtitle C (for debris treated by an extraction or destruction technology and that does not exhibit a hazardous characteristic) or land disposal in a subtitle C facility (for debris treated by an immobilization technology).

As information for the reader, we note that the existing facility standards for the following common debris treatment operations (other than for 90-day on-site treatment in a container, tank, or containment building) are:

** Debris treatment technologies conducted in tanks such as high pressure steam and water spraying, chemical extraction, and biodegradation are subject to the standards for tank facilities in subpart J of part 264 (permit standards) and part 265 (interim status standards).

** Storage or treatment in containment buildings is subject to the subpart DD, parts 264 and 265, standards also promulgated today (see discussion elsewhere in today's notice).

** Physical extraction technologies such as abrasive blasting or spalling used to treat debris in place but that is intended for discard (e.g., treatment of a contaminated building prior to demolition) are subject to the permit standards of subpart X, part 264 for miscellaneous units or the interim status standards for chemical, physical, or biological treatment in subpart Q, part 265.

** Incinerators are subject to subpart O, part 264 (permit standards) and part 265 (interim status standards).

** High temperature metal recovery furnaces are conditionally exempt from the rules for boilers and industrial furnaces burning hazardous waste in subpart H, part 266.

** Thermal desorbers are subject either to the incinerator or thermal treatment standards, depending on whether the unit meets the incinerator definition. Thermal treatment units are subject to subpart X, part 264 (permit standards for miscellaneous units) and subpart P, part 265 (interim status standards).

1. Adding Capacity for Debris Treatment to Existing Facilities

Today's rule amends the permit and interim status standards of part 270, as proposed, to facilitate the expansion of existing debris treatment capacity and the addition of new debris treatment capacity at existing facilities currently subject either to permit or interim status standards for managing hazardous waste. However, if an owner or operator of a facility that is not currently managing hazardous waste under the permit or interim status standards wants to construct a debris treatment facility, he must first obtain a RCRA permit.

a. Facilities With a RCA Permit. Facilities with a RCRA permit may add new treatment processes and additional capacity by applying for a permit modification under Sec. 270.42. See 53 FR 37912 (Sept. 28, 1988). Although regulations at Sec. 270.42 were promulgated under pre-HSWA authority, EPA may use these regulations in authorized States when necessary to implement HSWA provisions such as the land disposal restrictions. See 53 FR 37933.

The types of modifications needed to add new capacity or processes would likely require submittal of a Class 2 or 3 modification. The Class 2 modification process requires Agency action on the request within 120 days. This action would consist of approval or denial, reclassification as a Class 3 modification, or authorization to conduct activities (in containers, tanks, and containment buildings, as discussed below) for up to 180 days pending Agency action. Further, for Class 2 modifications, construction to implement the requested facility change may commence 60 days after submission of the request. There is no deadline for Agency action for Class 3 modifications, which apply to more substantial changes.

Permitted facilities may apply under existing Sec. 270.42(e)(3)(ii)(B) for a temporary authorization to initiate necessary activities to treat or store restricted wastes (e.g., hazardous debris) in tanks or containers while a Class 2 or 3 permit modification is undergoing review, or to undertake a treatment or storage activity which will be of short duration (e.g., decontamination of a building intended for demolition). Today's rule revises that section to enable the Agency also to grant a temporary authorization for containment buildings meeting the requirements promulgated today in subpart DD of parts 264 and 265.

Any request for a temporary authorization must demonstrate compliance with the part 264 standards and also meet the criteria of Sec. 270.42(e) for approval. Interested members of the public (i.e., those that have previously expressed interest in any permitting action for the facility) will receive notice by mail of a facility's request for a temporary authorization. The temporary authorization may be renewed once if the additional procedures of Sec. 270.42(e) are followed, including submission of appropriate permit modification information and the initiation of public meetings and public comment period. See 53 FR 37919.

b. Facilities Operating Under Interim Status. Facilities managing hazardous waste under interim status may add new treatment processes or additional treatment or storage capacity by using the existing procedures for changes during interim status in Sec. 270.72. Under these procedures, a facility must submit to EPA a revised Part A permit application and justification explaining the need for the change. The change must then be approved by EPA.

Such changes must meet one of several criteria specified in Sec. 270.72, such as being necessary to comply with a Federal, State, or local requirement. However, changes generally may not be made if they amount to reconstruction of the facility. The Agency considers the facility to be "reconstructed" if the capital investment for the changes to the facility exceed 50% of the capital cost of a comparable entirely new facility.

Existing Sec. 270.72(b)(6) lifted the reconstruction limit for changes to treat or store in tanks and containers hazardous waste subject to land disposal restrictions imposed by part 268, provided that such changes are made solely for the purpose of complying with part 268 land disposal

restrictions. Today's rule revises that paragraph to lift the reconstruction limit for containment buildings as well. See the the new subpart DD, part 264 and 265, standards for containment buildings that are also promulgated today.

2. On-Site Treatment of Debris in Containers, Tanks, and Containment Buildings

Existing Sec. 262.34 exempts from permit requirements generators who store or treat hazardous debris on-site in tanks or containers for a period not exceeding 90 days provided that the tank or container is designed and operated in compliance with subpart I (for containers) and subpart J (for tanks) of part 265. Today's rule revises Sec. 262.34, as proposed, to also provide this exemption to containment buildings designed and operated in compliance with the subpart DD, part 265, standards also promulgated today.

G. Capacity Variance for Hazardous Debris

In the May 15, 1992, Notice to Approve Hazardous Debris Case-By-Case Capacity Variance, the Agency approved a generic, one year extension of the LDR effective date applicable to all persons managing hazardous debris (57 FR 20766). For the purpose of the extension, the term "debris" was defined as set out in the preamble to the June 1, 1990 Third Third final rule. See 55 FR 22650 and Sec. 268.2(g). Furthermore, the Agency indicated that it will explain in the debris rule how a change in definition will affect the case- by-case extensions.

Although in general, both definitions will identify the same materials as debris, there are differences that may result in situations where either definition could include debris not included by the other. Of concern is the situation where someone has entered into contracts for, or actually initiated the process of, removing for disposal debris which met the old definition but does not meet the current definition. To avoid possible disruption of on- going activities, which have relied on the previous definition of debris, the Agency will allow the extension to apply to materials meeting either definition through May 8, 1993.

H. Other Issues

1. Applicability of Standards to Contaminated Structures and Equipment

a. Structures and Equipment Contaminated With Hazardous Waste and Intended for Discard Are Regulated Debris. As discussed above in section V.B.1.a of the preamble, structures and equipment contaminated with hazardous waste and that are intended for discard are hazardous debris subject to today's treatment standards. Thus, if a contaminated tank or building is decontaminated before demolition, the debris may not be land disposed unless the tank or building was decontaminated in compliance with today's treatment standards. (We note that, as discussed above in section F.2, such treatment is subject to the permit standards unless conducted in a tank, container, or containment building.)

If the contaminated structure or equipment is being decontaminated for subsequent use, however, the structure or equipment is not debris and the decontamination is neither subject to today's debris treatment standards nor the permit standards for hazardous waste management facilities. Thus,

cleaning a building that is in use is not treatment of debris.

b. Treatment Standards for Concrete Pads and Walls Intended for Discard. The Agency believes that concrete pads and walls are typically decontaminated using "water washing" techniques. These techniques include the following technologies specified in today's rule: Abrasive blasting using water to propel abrasive media, high pressure steam or water sprays, and water washing and spraying.

We note that the performance standards for abrasive blasting and high pressure water sprays require removal of 0.6 cm of the surface because these are physical extraction technologies designed to remove the surface layer of the debris. The performance standards for water washing and spraying limits the thickness of the concrete to 3/8 inch because this technology relies on chemical extraction (i.e., dissolving or removing with surfactants) of contaminants below the concrete surface. If the treater believes that treatment to these performance standards is not necessary to ensure effective treatment to residual levels of hazardous constituents that will not pose a hazard to human health and the environment absent management controls, the treater may: (1) Obtain a waiver of the standards (e.g., the thickness limit for water washing) under an equivalent technology demonstration under Sec. 268.42(b); or (2) demonstrate to the Agency that the debris upon alternative treatment does not contain toxic constituents under the contained-in principle codified in today's rule. See discussion in section V.B.2.b above.

c. Relation of Debris Standards to Closure Rules. Existing closure standards for hazardous waste management facilities require "decontamination" of contaminated structures and equipment. See, e.g., Secs. 264.114 and 265.114. The precise meaning of decontamination presently is determined on a case-by-case basis through review of the facility's closure plan. However, if such structures or equipment is also debris which is going to be land disposed, which could often be the case, an issue arises regarding the relationship of the "decontamination" standard in the closure rule and the treatment methods adopted in today's rule.

The Agency believes that the treatment methods in today's rule would always satisfy the decontamination standard in the closure provisions. After all, the purpose of these treatment methods is to decontaminate. EPA also interprets the land disposal and closure rules to require that all hazardous debris be treated to meet the debris treatment standards, even if the debris is generated during closure. (Put another way, the debris standards normally would be appropriate for any debris generated as a result of closure.) If the debris treatment standards appear to be inappropriate for debris (such as contaminated structures or equipment) generated during closure, a site-specific treatability variance pursuant to Sec. 268.44(h) may be available. The Agency believes that such a variance could be processed administratively as part of the closure procedures.

2. Mixing of Hazardous Waste or Contaminated Soil With Debris To Avoid the Waste-Specific Treatment Standards Is Prohibited

Today's rule prohibits the intentional mixing of hazardous waste or contaminated soil with debris to avoid the concentration-based treatment

standards for the waste or soil. The Agency is prohibiting such sham mixing to ensure that hazardous waste and contaminated soil are treated to the existing treatment standards given that the waste /48/ is amenable to treatment to those levels and that the waste and soil are likely to be much more heavily contaminated with hazardous constituents than debris and, thus, should be subject to such concentration-based treatment levels.

NOTE /48/ We note that the Agency is concerned that the waste treatment standards may not be appropriate for soil contaminated with the waste and, consequently is considering proposing in summer 1992 treatment standards for contaminated soil.

The prohibition on mixing applies to debris treated by any technology: Immobilization as well as extraction or destruction. Although the debris treatment standards require separation of the waste or contaminated soil from debris treated by an extraction or destruction technology and that the residue must meet the waste-specific treatment standards for the waste contaminating the debris, the treatment process itself could enable the residue to meet the concentration-based waste treatment standards by virtue of dilution during treatment. An example is water washing of debris intentionally mixed with a prohibited listed waste. The water residue may easily meet the waste-specific treatment standard by virtue of dilution rather than treatment.

We note that this prohibition on sham mixing does not affect implementation of the principle discussed above in section V.B.1 to classifying mixtures of debris with contaminated soil or waste as debris. That principle says that if debris is the primary material in a mixture by volume based on visual observation, the mixture is subject to regulation as debris. Thus, for example, when debris is initially excavated in a mixture of debris and nondebris materials, and debris is the primary material present, the mixture is appropriately regulated as debris and sham mixing has not occurred.

However, if debris is intentionally mixed with contaminated soil or hazardous waste (e.g., after excavation), and the mixture is regulated as debris by the application of the mixture principle and subsequently immobilized, prohibited sham mixing has occurred.

3. Procedures for Demonstrating Equivalency of Alternative Technologies

As discussed at proposal, existing Sec. 268.43(b) provides the generator or treater an opportunity to demonstrate to the Agency than an alternative technology can achieve the equivalent level of performance as that of the specified treatment method. We note that this variance procedure can also be used to demonstrate that one of the technologies specified in today's rule can be designed or operated under conditions other than those established in Table 1, Sec. 268.45, to provide equivalent treatment (i.e., meet the performance standard for the technology) or that a specified technology can treat hazardous contaminants to levels that do not pose a hazard to human health and the environment absent subtitle C control without achieving the performance and design and operating standards established in Table 1.

In addition, the Agency is requiring in the treatment standards of Table 1, Sec. 268.45, that treaters must make an Equivalency Demonstration under

Sec.
268.43(b) in order for certain technologies to be considered BDAT. See discussion above for thermal desorption, biodegradation, and chemical destruction.

VI. Capacity Determinations

This section presents the data sources, methodology, and results of EPA's capacity analysis for today's newly listed wastes. Specifically, section VI summarizes the results of the capacity analysis for petroleum refining wastes and other organic wastes; wastes mixed with radioactive contaminants; and debris contaminated with the newly listed wastes. Soil and debris contaminated with newly listed wastes for which standards are finalized today will be addressed in future proposals.

The capacity analysis for the newly listed wastes for which the Agency is today promulgating treatment standards relied on information obtained from several sources. Primary data sources include the National Survey of Hazardous Waste Treatment, Storage, Disposal, and Recycling Facilities (the TSDR Survey), the National Survey of Hazardous Waste Generators (the Generator Survey), data received in response to the proposed rule (57 FR 957), data received in response to the ANPRM for the Newly Identified and Listed Wastes (56 FR 24444), data received in voluntary data submissions, and information requests authorized under section 3007 of RCRA.

EPA conducted the TSDR Survey during 1987 and 1988 to obtain comprehensive data on the nation's capacity for managing hazardous waste and on the quantities of hazardous waste being land disposed. For the capacity analysis, EPA used the TSDR Survey information on the quantities of waste streams managed in land-disposal units and requiring alternative treatment/recovery due to the land disposal restrictions and on available capacity of hazardous waste management technologies.

EPA conducted the Generator Survey in 1987. This survey requested information on waste quantities and waste characteristics of hazardous waste generated, and provided capacity information for facilities not included in the TSDR Survey.

A. Capacity Analysis Results Summary

Table VI.A.1 lists each waste code for which EPA is finalizing LDR standards today. For each code, this table indicates whether EPA is granting a national capacity variance for surface-disposed or deepwell disposed wastes. As indicated in this table, the Agency is granting two-year national capacity variances only for petroleum refining wastes generated as a result of cleanouts or closures of surface impoundments, debris contaminated with newly listed wastes, and mixed radioactive wastes. EPA is granting a one-year national capacity variance for routinely-generated petroleum refining wastes.

EPA is also granting a 3-month national capacity variance, extending the effective date to November 9, 1992, for compliance with the treatment standards for all newly regulated waste codes, F001-F005 revised treatment standards, converted wastewater standards that had been based on scrubber water, and the HTMR generic exclusion standards. This extension would not apply to wastes with a specified longer national capacity variance. EPA is delaying the effective date for all newly regulated waste codes because the

Agency realizes that even where data indicate that sufficient treatment capacity exists, it is not immediately available. Additional time may be required to determine what compliance entails, redesign tracking documents, possibly adjust facility operations, and possibly segregate wastestreams which heretofore had been centrally treated. EPA believes these legitimate delays are encompassable within a short-term capacity variance because part of the notion of available capacity is the ability to get wastes to the treatment capacity in a lawful manner. The Agency is dating this capacity extension from November 9, 1992, rather than date of signature due to unanticipated delays in the publication of this rule in the Federal Register.

Table VI.A.1.--Summary of Capacity Variance Decisions for Newly Listed Wastes

Waste code	Variance for surface-disposed wastes?	Variance for deepwell-disposed wastes?
F037--removed from S.I.a	2-year	No.
F038--removed from S.I.a	2-year	No.
F037--managed in S.I.b	2-year	No.
F038--managed in S.I.b	2-year	No.
F037--Routine	1-year	No.
F038--Routine	1-year	No.
K107	No	No.
K108	No	No.
K109	No	No.
K110	No	No.
K111	No	No.
K112	No	No.
K117	No	2-year.
K118	No	2-year.
K123	No	No.
K124	No	No.
K125	No	No.
K126	No	No.
K131	No	2-year.
K132	No	2-year.
K136	No	No.
U328	No	No.
U353	No	No.
U359	No	No.
Mixed Rad. Waste	2-year	No
Hazardous Debris	2-year	No.

a F037 and F038 wastes from cleanout and closure of surface impoundments.
b F037, and F038 managed in surface impoundments.

8. Available Capacity

The analysis of commercial capacity for newly listed wastes is based primarily on data from the TSDR Survey capacity data set, data received in response to previous LDR notices and regulations, and data received in voluntary data submissions. Analysis of data from these sources indicates that sufficient commercial capacity is currently available for newly identified wastes requiring wastewater treatment, stabilization, and

combustion of liquids with exception of deepwell injected K117, K118, K131 and K132. However, commercial capacity for combustion of sludges, solids, and debris is limited for some newly identified wastes. The analysis of commercial combustion capacity discussed in this section focuses on F037 and F038 sludges and solids because these wastes represent the majority of the waste volumes affected by today's rule. Specific capacity issues for the newly listed K and U wastes being regulated today are discussed in section VI.C.2 of this preamble. Debris is amenable to some, but not all types of sludge and solid combustion capacity, and is discussed in greater detail in section VI.E. Table VI.B.1 summarizes available commercial treatment capacity for newly listed wastes.

EPA's analysis of commercial combustion capacity for sludges and solids has historically focused on the broad capacity categories of liquids, sludges, and solids. Several commenters felt that these capacity categories do not adequately represent the diversity of combustion systems included in each category. Therefore, to improve the precision of its combustion capacity analysis, EPA has divided sludge/solid combustion capacity into seven categories. EPA's capacity analysis for fixed site commercial hazardous waste incinerators separately addresses capacity from pumpable sludge, nonpumpable sludge, containerized solid, and bulk solid feed systems. EPA's capacity analysis for cement kilns that burn hazardous wastes as fuel separately addresses capacity from sludge, containerized solid, and dry solid feed systems.

EPA recognizes that this type of categorization is increasingly important as the commercial combustion industry matures and firms employ different combustion and fuel substitution technologies (i.e., cement kilns) to accommodate different types of wastes entering the commercial market. EPA also recognizes that individual feed system capacity constraints must also be consistent with overall system capacity constraints, such as heat release from a kiln. The relationship between overall system constraints and individual feed system constraints is complicated by the fact that, within the overall system limits, limits for one type of feed system (e.g., containerized solids) may be raised by reducing the amount of another type of feed (e.g., bulk solids). EPA emphasizes that its capacity analysis is conducted on a national level, and that though the Agency speaks generally about which systems are more likely to be used for newly identified petroleum refining wastes, this rule does not preclude these wastes from going through other systems.

Table VI.B.1.--Available Commercial Treatment Capacity for Newly Listed Wastes

Technology	Available capacity (Tons/year)
Biological Treatment	188,000
Chemical Precipitation	813,000
Combustion of Liquids	526,000
Combustion of Sludges and Solids	
Cement Kilns: Sludges	14,000
Cement Kilns: Containerized Solids	83,000
Cement Kilns: Dry Solids	24,000
Incineration: Pumpable Sludges	51,000
Incineration: Nonpumpable Sludges	1,000
Incineration: Containerized Solids	41,000
Incineration: Bulk Solids	23,000

Stabilization	1,204,000

This section discusses EPA's assessment of capacity in each of the seven categories, the waste characteristics that affect whether a waste is generally amenable to the category, and pretreatment processing that is generally required. A comparison of available and required capacity for F037 and F038 sludges and solids can be found in section VI.C.

I. Incineration Capacity

In response to the proposed rule, EPA received comments relating to the high demand for incineration capacity and a general shortage of incineration capacity. However, EPA's analysis of detailed data from specific incinerators revealed that there is some commercial incineration capacity available. One commenter remarked that incinerators have less capacity for high BTU wastes.

EPA recognizes that the heating value of a waste affects an incinerator's throughput capacity for the waste when the incinerator is constrained by its heat input to the unit (e.g., if an incinerator is limited to 10 million BTU/ hr, it could either feed 10,000 lb/hr of waste with a heating value of 1,000 BTU per pound or 5,000 pounds per hour of a waste with a heating value of 2,000 BTU per pound). EPA believes that wastes with heating values above about 5,000 BTU per pound will increasingly be sent to cement kilns for use as fuel. This issue is particularly important for bulk solid systems that are designed for soils, which have very low heating values. To the extent that mass throughput limits are based on the incinerators heat release limits, using mass throughput estimates (e.g., for bulk solids) based on large amounts of soil in the feed mix, could overestimate the mass throughput capacity for wastes with higher heating values than soil, such as F037 and F038. For this reason, EPA has revised its capacity estimate for certain incinerators whose estimates in the proposed rule were based on a waste feed blend with a very low heating value. EPA believes that a significant portion of routinely generated F037 and F038, and an even larger portion of F037 and F038 from surface impoundment cleanouts, will require incineration (as opposed to cement kiln) capacity.

EPA has identified 51,000 tons per year of pumpable sludge capacity available at incinerators. Pumpable sludge systems rely on wastes with sufficient liquid content to facilitate the flow of materials. Pumpable sludge systems use direct injection, sludge lances, positive displacement pumps and cement pumps to feed sludges to the incinerator. EPA is aware of at least one facility processing K048-K052 in this manner. In general, F037 and F038 would have to be reslurried, or would have to bypass dewatering at the point of generation to be handled through pumpable sludge systems. The primary constraints on use of this capacity for F037 and F038 are the viscosity, particle size, ash content, and abrasiveness of the sludges.

Therefore, EPA does not believe that pumpable sludge systems will receive a large portion of the nation's F037 and F038 waste streams, because of the problems discussed above. Additional technical developments and operational experience are needed to allow these systems to routinely handle F037 and F038 wastes. Based on EPA's experience observing the progress at commercial combustion facilities, EPA believes obtaining permit modifications and developing the technical and operational experience to routinely handle new wastes will take six to twelve months.

EPA has identified 1,000 tons per year of nonpumpable sludge capacity available at incinerators. Nonpumpable sludge systems use ram feed systems to feed sludges to the incinerator. Wastes fed in this manner are limited by extremely high or low BTU, tramp object size, and the presence of free liquids. The primary constraints are overall availability, aggravated by generally high maintenance requirements. Again, EPA does not believe that nonpumpable sludge systems will receive a large portion of the nation's F037 and F038 waste streams because there are few of them and they will require time to develop the technical and operational experience needed to handle routinely-generated F037 and F038 petroleum refining wastes.

EPA has identified 34,000 tons per year of containerized solids capacity available at incinerators. Containerized solids systems use ram, elevator or drop feed systems to feed metal drums and fiber packs to incinerators. Metal drum systems generally require shredders. Wastes appropriate for this capacity are limited by water content and high or low BTU extremes.

Utilization of this capacity depends on wastes being packaged into drums, which is technically feasible, but systems for packaging petroleum refining wastes for incinerators are not widely available. Containerization capacity could be added at generators, incinerators or intermediate processors. EPA believes obtaining storage and operating permits, as well as construction and startup of packaging units will take six months to one year. Therefore, EPA believes that containerized solids systems will not receive a large portion of the nation's F037 and F038 waste streams because of the time needed to bring these systems on line and operate them routinely on petroleum refining wastes F037 and F038.

EPA has identified 23,000 tons per year of bulk solids capacity available at incinerators. Bulk solids systems generally use clamshell cranes or drop feed systems (possibly with shredders) to feed bulk solids into incinerators.

EPA is aware of four incinerators currently burning petroleum refining wastes as bulk solids. The primary constraints on the bulk solids system are extremes of high and low BTU, object size, abrasiveness, the presence of free liquids, high system maintenance and limited number of installed systems.

F037 and F038 would have to be dewatered in order to be amenable to this type of capacity. The ability for bulk solids feed systems to process large quantities of wastes directly from roll-off bins makes bulk solids capacity the most suitable for petroleum refining wastes with low to moderate BTU values.

Much of the nation's bulk solids incineration capacity has come on line fairly recently and continues to face some technical and regulatory obstacles. Two of the incinerators that provide bulk solids capacity have entered that market in the past year, and another is still modifying its system to bring its actual throughput capacity closer to its design capacity.

Historical experience with new commercial incineration capacity and the unique technical challenges posed by bulk solids feed systems make commissioning and maintaining new commercial bulk solids incineration capacity highly uncertain. Based on the uncertainty of final permit approval, EPA revised its capacity estimates to exclude an incinerator which has not yet received final approval to continue full operation and needs a permit modification for F037 and F038 wastes. EPA estimates it will take six to twelve months for this facility to be fully operational for handling F037 and F038 wastes. EPA also considered the uncertainty in its

estimates of current capacity in its variance decision for F037 and F038 wastes.

2. Cement Kiln Capacity

Several commenters were concerned about EPA's intention to consider cement kiln combustion capacity, citing the low BTU content of F037 and F038. Cement kilns generally require that their solid wastes contain more than 5,000 or 6,000 BTU per pound. Based on available information, EPA estimates that roughly half of the routinely generated F037 and F038 sent off site will have a BTU value sufficient for combustion in cement kilns. On the other hand, EPA believes that F037 and F038 generated from the removal of hazardous wastes from surface impoundments will have a lower BTU value and are more likely to be treated in incinerators.

EPA has identified 14,000 tons of sludge capacity available per year at two cement kilns. One commenter reported that no cement kilns are accepting sludges, but EPA is aware of these two. Cement kiln sludge systems rely on slurrying wastes and feeding them through primary fuel ports. F037 and F038 would have to be reslurried, or bypass dewatering. The primary constraint on the use of this capacity for petroleum refining wastes is the difficulty of suspending large amounts of solids in liquid while maintaining high BTU. However, EPA recognizes the limitations of this capacity for petroleum refining sludges, and believes that cement kiln sludge capacity will not receive a large portion of the national F037 and F038 waste streams.
Additional technical developments and operational experience are needed to allow these systems to routinely handle F037 and F038 wastes. EPA believes these changes will take six to twelve months.

EPA has identified 83,000 tons of containerized solids capacity, primarily at four cement kilns. Cement kiln containerized solids systems use drop feed systems to feed pails and bags containing hazardous wastes into the "cold" midsection of the kiln (the calcining zone). Wastes packaged into bags must generally be thermally dried to a water content of 5 to 25 percent. As is generally true for cement kilns, wastes are limited by BTU value. The primary constraints on the use of this capacity appear to be dewatering and packaging capacity. One commenter is concerned that the facilities identified by EPA as having containerized solids capacity are close to 100 percent utilized. After further analysis, EPA stands by the estimates prepared for the proposed rule.
Three of the facilities included in this estimate routinely accept petroleum refining wastes, and as of September 1991, one was pursuing a permit modification to be able to burn K048-K052 and F037 and F038. EPA believes that containerized solids systems at cement kilns will be the preferred route for most routinely generated petroleum refining wastes, and has relied heavily on these systems in its capacity analysis for F037 and F038.

Cement kilns are continuing to increase their capacity to burn hazardous wastes, and technical advancements in feed systems are producing especially significant increases in capacity for solids. Estimated containerized solids capacity has roughly doubled since the Third Third rule. Because much of the available capacity for F037 and F038 wastes is new capacity, EPA is concerned that additional technical developments and operational experience are needed to allow these systems to handle routinely generated F037 and F038 wastes.

Additionally, there is considerable uncertainty whether cement kilns will continue to provide the same capacity as they modify their equipment and operations to meet interim status requirements of the BIF rule (56 FR 7134, February 21, 1991). To comply with BIF rule interim status requirements, cement kilns must meet a 20 ppm hydrocarbon emission limit or establish an alternative limit based on baseline hydrocarbon emission rates when the facility is not burning hazardous wastes. Based on information from the cement industry, EPA believes that some cement kilns will have trouble meeting the 20 ppm limit or establishing a baseline due to variable hydrocarbon levels in their raw materials. If one of the major cement facilities providing containerized solids capacity is forced to cease operations, it would cause a major disruption to the commercial hazardous waste combustion system, by removing as much as 35,000 tons per year of capacity, leaving the net available capacity close to the amount of routinely generated F037 and F038 that are amenable to cement kilns. As discussed in Section VI.C., nearly half the routinely generated F037 and F038 wastestream is not amenable to cement kilns, and there is insufficient bulk solids capacity to handle this quantity. Due to these potential problems, EPA is reluctant to set the LDR effective dates such that large quantities of new wastes would be introduced into the combustion systems immediately.

EPA has identified 24,000 tons of dry solids capacity available primarily at two cement kilns. Dry solids systems use pneumatic systems that convey dried materials to the "hot" end of the kiln. Wastes going through this feed mechanism are generally limited by their BTU value, moisture content, and ability to form freeflowing solid particles. The primary constraint on the use of this capacity for combustion of F037 and F038 is the availability of thermal drying capacity, which is necessary to reduce the moisture content to between 5 and 25 percent water. Commenters on the proposed rule noted that petroleum refining sludges, even if dried, may be too "tacky" for this type of feed system. EPA agrees that some F037 and F038 wastes may not be amenable to dry solids systems, and believes that dry solids systems will not receive a large portion of the nation's F037 and F038 waste streams. EPA is aware of several refineries that are using or planning to use thermal desorption and solvent extraction to meet BDAT standards for F037 and F038 wastes, and has accounted for existing on-site units by decreasing its estimates of demand for commercial treatment technologies. While these technologies are not currently commercially available, EPA is aware of other refineries exploring the possibility of building them on-site. The one-year national capacity variance will allow time for on-site development of these technologies.

C. Petroleum Refining Wastes and Other Organic Wastes

This section presents the capacity analysis for today's newly listed petroleum refining wastes and other organic wastes.

1. Required Capacity for Petroleum Refining Wastes (F037 and F038)

EPA is promulgating concentration levels as the treatment standards for wastewater and nonwastewater forms of F037 and F038. F037 and F038 nonwastewater standards are based on a transfer of the existing performance data for K048-K052 (55 FR 22520, June 1, 1990). Nonwastewater treatment standards for F037 and F038 wastes are based on solvent extraction and incineration for organic constituents, and stabilization for metals. EPA is also promulgating standards for wastewater forms of F037 and F038 based on

the standards for multi-source leachate (F039). That is, for F037 and F038 wastewaters, the standards are based on biological treatment; or, wet air or chemical oxidation followed by carbon adsorption for organics; and chemical precipitation for metals.

The capacity analysis for the F037 and F038 petroleum refining wastes was conducted using information collected from a number of data sources. The primary data sources include data submitted voluntarily from refineries, the F037 and F038 Regulatory Impact Analysis (RIA) for the listing of the F037 and F038 wastes, the Petroleum Refinery Data Base (PRDB), the TSDR Survey, the Generator Survey, and the public comments submitted in response to the proposed rule (57 FR 958, January 9, 1992).

The RIA was prepared by EPA in 1990 in support of the listing rule for F037 and F038 wastes (55 FR 46354). The RIA includes an industry overview and profile of facilities affected by the listings, an analysis of baseline waste management practices, and regulatory compliance scenarios. The PRDB is based on a mail survey conducted by EPA in 1983 and has been updated to contain 1985 refining information. The TSDR Survey and Generator Survey were discussed previously (in the introduction to Section VI). Public comments submitted in response to the proposed rule present an overview of how industries would be affected by the land disposal restriction of newly listed F037 and F038 wastes.

EPA also used several supplemental data sources: two reports prepared by Midwest Research Institute (MRI), which support the F037 and F038 listing and the Toxicity Characteristic (TC) rule and which summarize sampling and analysis data collected by EPA for 16 petroleum refining facilities; no-migration petitions submitted by petroleum refineries for land treatment units; and the California Hazardous Petroleum Waste Data Base, which contains information on wastes that fit the F037 and F038 definition.

Using the available data and the Agency's best engineering judgment, EPA estimated F037 and F038 waste quantities based on current management practices and identified options for alternative management due to the LDR requirements. EPA derived demand estimates for two sources of F037 and F038 wastes: (1) Quantities from routine generation of F037 and F038 wastes, and; (2) quantities from the cleanout or closure of remaining surface impoundments. The Agency also developed estimates of available on-site treatment/recovery capacity and evaluated information submitted by refineries and treatment technology vendors on the viability of constructing on-site treatment/recovery capacity and the time that would be required to make such additions.

In the proposed rule (57 FR 958, January 9, 1992), EPA assumed that all F037 and F038 wastes would be removed from surface impoundments prior to May 1992. Wastes that remain in surface impoundments after May 8, 1992 would not be removed, but would be disposed of in place--that is, the surface impoundment would close as a landfill. Commenters on the proposed rule agreed with estimates of routine generation. However, many commenters provided data that surface impoundments would not be cleaned out by May 1992. Additionally, many comments indicated that many surface impoundments would not close as landfills after May 8, 1992, but would be cleaned out. Upon reassessment, EPA agrees with the commenters that F037 and F038 wastes are still being generated from surface impoundment cleanouts and closures. For today's final rule, therefore, EPA conducted separate capacity analyses for F037 and F038 generated routinely and F037 and F038 wastes from surface

impoundments.

a. Routine Generation. For the purpose of the F037 and F038 capacity analysis, routinely generated F037 and F038 wastes are wastes generated from tanks, including wastes from equalization tanks and oil/water/solids separators (such as CPI separators and IAF units) that are not API separators or DAF units. EPA estimates that approximately 69,000 tons per year of dewatered F037 and F038 wastes (nonwastewaters) from routine treatment of petroleum refinery wastewaters will require alternative treatment due to the LDRs. Based on information from public comments and engineering judgement, EPA estimates that 41,000 tons of per year of this 69,000 tons will be high heat content wastes (i.e., equal to or greater than 5,000 Btu/lb) and would likely be managed at cement kilns as containerized solids, and 28,000 tons per year of low heat content wastes (i.e., less than 5,000 Btu/lb) would be managed in the form of bulk solids at incinerators. For the reasons described in section VI.B., EPA believes that cement kilns and incinerators will not have sufficient capacity to treat the quantity of routinely generated F037 and F038 wastes; therefore, the Agency is granting a one-year national capacity variance to all routinely generated F037 and F038 waste. This variance allows time for cement kilns to comply with interim status requirements of the BIF rule, and for additional bulk solids incineration capacity and capacity of other treatment and recycling technologies (e.g., solvent extraction and thermal desorption) to come online to meet the demand for treatment from routinely generated F037 and F038.

b. Generation from Surface Impoundment Cleanouts and Closures. The Agency also considered the accumulated sludge quantities in surface impoundments. Many of these wastes are generated in unretrofitted impoundments (i.e., impoundments not satisfying the minimum technology requirements specified in sections 3004(o) and 3005(j)(11)), and would thus be land disposed in a prohibited manner. These impoundments can be retrofitted or replaced with tank systems, but according to many commenters, petroleum refineries may not be able to do so by the effective date of this rule, or for some time thereafter. See RCRA section 3005(j)(6), which allows four years from promulgation date of the rule identifying or listing the wastes to retrofit or close impoundments receiving newly identified or listed wastes (and no other hazardous wastes). Since most of these surface impoundments also accumulate organic toxicity characteristic (TC) wastes, identified as hazardous in March 1990, the refineries have to retrofit or close the impoundments by March 1994. Some impoundments may be granted a delay of closure (see 40 CFR 265.113 and 40 CFR 264.113) and thus will be allowed to remain in operation, providing that hazardous wastes (e.g., F037 and F038 wastes) are removed and the impoundment is used for non-hazardous wastes. For surface impoundments that do not close by May 1992, EPA estimates that 173,000 tons of dewatered F037 and F038 wastes will be generated from impoundment closure or cleanout between June 1992 and June 1993, and 99,000 tons between June 1993 and June 1994. These quantities will require alternative treatment to meet the LDR treatment standards.

Commenters indicated that F037 and F038 wastes generated from surface impoundment closures are generally of lower heat content than routinely generated F037 and F038 wastes. EPA agrees with this comment; therefore, a larger proportion of surface impoundment generated wastes would require incineration. Based on a follow-up analysis of public comments and engineering judgement, EPA estimates that of the total 173,000 tons generated between 1992 and 1993, 112,000 tons will be low heat content

waste requiring incineration for nonpumpable sludge or bulk solids. Of the 99,000 tons generated between 1993 and 1994, 64,000 tons will be low heat content wastes requiring incineration for bulk solids. Because incineration capacity for bulk solids that could accommodate these wastes before they are land disposed is not adequate, EPA is granting a two-year national capacity variance for F037 and F038 wastes from surface impoundments.

The lack of alternative storage/treatment capacity raises two issues. The first is that during the period of a national capacity variance, restricted wastes disposed in surface impoundments can only be placed in impoundments meeting the minimum technology requirements of section 3004(o). See Sec. 268.5(h), RCRA section 3004(h)(4) and Mobil Oil v. EPA, 871 F. 2d 149 (D.C. Cir. 1989). The second issue is that section 3005(j)(6) states that impoundments receiving newly identified or listed hazardous wastes have up to four years from the date of promulgation of the rule to retrofit or close the impoundment. As was described in section IV.H. of today's preamble, EPA believes that these provisions are in irreconcilable conflict, and, accordingly, EPA has significant discretion in determining how best to interpret them. The Agency is promulgating that in the case of wastes subject to a national capacity variance, that impoundments managing such wastes (and no other wastes subject to an earlier prohibition) have four years from the date of the identification or listing (i.e., the date identifying or listing of the wastes is promulgated, not the effective date of the rule, see section 3005(j)(11)) to retrofit or close.

Although land disposal in impoundments remains necessary during the four-year period allowed by statute for retrofitting, the Agency proposed that these surface impoundment wastes be removed and sent for the mandated treatment if adequate treatment capacity existed (section 3005(j)(5)). Some comments received in response to this proposal indicate that some refineries may not be able to remove waste from surface impoundments without first removing the impoundment from service, which would interrupt refinery operations and possibly affect oil and solids loading on the wastewater treatment system, potentially exceeding NPDES permit limits. EPA agrees with these comments and is therefore not requiring such annual cleaning of surface impoundments.

In addition, EPA proposed that impoundments must be clean closed. EPA's intent was to mandate removal of prohibited wastes at closure to be consistent with the statutory intent to treat wastes where capacity is available and not to dispose of untreated wastes in surface impoundments. (Where there is available treatment capacity, the strong statutory policy is to treat hazardous wastes rather than allow them to be land disposed. See RCRA sections 1002(7) and 1003 (4), (5), and (6).) EPA received comments opposing the requirement of clean closure, citing acceptable alternative to clean closure, such as closure in place (40 CFR 265.228(a)(2) and 40 CFR 264.228(a) (2)), delay of closure (40 CFR 265.113(d)(e) and 40 CFR 264.113(d)(e)), and other closure options. EPA has considered these alternative closure practices and is allowing owners and operators of petroleum refineries the same flexibility available to other surface impoundment owners and operators. Therefore, EPA is not requiring that owners and operators of surface impoundments remove wastes when they close. If owners or operators remove wastes from surface impoundments after the expiration of the two-year national capacity variance, and they are unable to identify adequate treatment capacity, they may seek a case-by-case extension to the effective date of the LDR prohibition as

stipulated under 40 CFR 268.5.

One commenter disagreed with EPA's proposal to allow owners and operators to generate F037 and F038 in unretrofitted impoundments. This commenter mentioned that their member companies had received a large number of inquiries concerning the closure and replacement of leaking surface impoundments, but that this interest declined as it became clearer that EPA was likely to allow them the maximum amount of time to retrofit. The commenter believes that owners and operators will take as much time as they are given to comply with the minimum technology requirements. The commenter therefore believes that no capacity shortfall exists, just a perceived "difficult" burden exists for closing surface impoundments. EPA disagrees with this comment. As indicated in today's preamble, EPA believes that four years from the date of promulgation of the listing or characteristic is a reasonable period within which owners and operators can come into compliance with the minimum technology requirements.

c. Capacity Analysis Summary for F037 and F038 Wastes. As stated earlier in this section, the capacity analysis was conducted separately for F037 and F038 wastes routinely generated and for F037 and F038 wastes from surface impoundments. The estimate for routinely generated F037 and F038 waste generation requiring alternative treatment is 69,000 tons per year (nonwastewaters). EPA has no data indicating that any land-disposed wastewaters will require alternative treatment, and therefore EPA assumed this quantity to be zero. Based on the estimate that 69,000 tons per year of dewatered routinely generated F037 and F038 wastes will require alternative treatment, and the determination that insufficient capacity exists to treat these wastes in the next year, EPA is granting routinely generated F037 and F038 wastes a one-year national capacity variance. This variance expires on June 30, 1993, one year from promulgation of the LDR prohibition for these wastes (RCRA 3004(h) (1) and (2)). (EPA notes that it is dating the national capacity variance for these wastes from the date the prohibition took effect, rather than the date of publication, since the record does not support any longer extension).

EPA has estimated that cleanouts and closures of surface impoundments will generate 100,000 tons of low heat content wastes generated between 1992 and 1993 and 91,000 tons generated between 1993 and 1994. Because existing capacity at bulk solid incineration systems is insufficient to treat F037 and F038 wastes from surface impoundments, EPA is granting a two-year national capacity variance for these wastes. This variance expires on June 30, 1994, two years from promulgation of the LDR prohibition, the maximum extent allowed by law (RCRA 3004(h)(2)).

2. Required Capacity for Other Newly Listed Organic Wastes

This section presents EPA's analysis of required capacity for other newly listed organic wastes (surface disposed) including organic U waste, unsymmetrical dimethylhydrazine (UDMH) wastes, toluene diisocyanate (TDI) wastes, ethylene dibromide (EDB) wastes, ethylenebisdithiocarbamic (EBDC) wastes, and methyl bromide wastes.

a. Unsymmetrical Dimethylhydrazine (UDMH) Production Wastes (K107, K108, K109, K110).

K107--Column bottoms from product separation from the production of 1,1-

dimethylhydrazine from carboxylic acid hydrazides
K108--Condensed column overheads from product separation and condensed reactor vent gases from the production of UDMH from carboxylic acid hydrazines
K109--Spent filter cartridges from product-purification from the production of UDMH from carboxylic acid hydrazines
K110--Condensed column overheads from intermediate separation from product purification from the production of UDMH for carboxylic acid hydrazines

For UDMH wastes, EPA is promulgating incineration as the method of treatment for nonwastewaters, and incineration, or chemical oxidation or biodegradation followed by carbon adsorption as methods of treatment for the wastewaters.

EPA listed four UDMH wastes (K107, K108, K109, K110) that are generated from the production of UDMH (unsymmetrical dimethylhydrazine, or 1,1-dimethylhydrazine) from carboxylic acid hydrazides. Also, some of these wastes are ignitable or corrosive and as such are currently subject to LDR standards.
Generation and management information concerning the UDMH wastes was collected by EPA during 1990 and early 1991 under the authority of section 3007 in RCRA. This capacity analysis incorporates data from that section 3007 information request.

The response to the section 3007 request noted that the only manufacturer who used the proprietary process generating UDMH wastes has ceased UDMH production. Therefore, the Agency assumes that no UDMH will require treatment prior to land disposal.

Based on available data, EPA believes that sufficient capacity exists for treatment of the UDMH wastes; therefore, EPA is not granting a national capacity variance for K107, K108, K109, and K110 wastewaters and nonwastewaters.

b. 2-Ethoxyethanol (U359). For U359, EPA is promulgating incineration or fuel substitution as methods of treatment standards for the nonwastewaters, and incineration, or chemical oxidation followed by biological treatment, carbon absorption, or biodegradation followed by carbon adsorption for the wastewaters.

Generation and management information concerning the U359 wastes was collected by EPA during 1990 and early 1991 under the authority of section 3007 in RCRA. This capacity analysis incorporates data from that section 3007 information request.

The Agency estimates that less than 500 tons of U359 wastewaters are being land disposed and will require further treatment as a result of the LDRs.
Most of the U359 waste generated in 1989 was incinerated on-site, and the remainder (less than one percent) was incinerated off-site. In addition, unspecified and variable quantities of untreated wastewater contaminated with U359 are reportedly generated on occasion at one generator's facility; however, this wastewater undergoes biological treatment on site. Because these wastes are rejected products, and the product has a market value, the Agency believes these wastes would be generated in small quantities.

Based on the available data (see Section VI.B), EPA believes that sufficient capacity exists for treatment of U359 wastes; therefore, EPA is

not granting a national capacity variance for U359 wastewaters or nonwastewaters.

c. Dinitrotoluene and Toluenediamine Production Wastes (K111-K112, U328 and U353).

K111--Product washwaters from the production of dinitrotoluene via nitration of toluene
K112--Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene
U328--Ortho-toluidine
U353--Para-toluidine

For K111 wastewaters and nonwastewaters, EPA is promulgating concentration- based standards based on a transfer of the standards for F039 wastes. EPA is promulgating incineration as the method of treatment for K112 nonwastewaters; and incineration, or chemical oxidation followed by carbon adsorption, or biodegradation followed by carbon adsorption as methods of treatment for K112 wastewaters. For U328 and U353 wastes, EPA is promulgating incineration as the method of treatment for nonwastewaters; and incineration, or chemical oxidation followed by carbon adsorption, or biodegradation followed by carbon adsorption as methods of treatment for wastewaters.

During 1990 and early 1991, EPA collected generation and management information concerning these wastes under the authority of section 3007 in RCRA. This capacity analysis incorporates data from that section 3007 information request. In addition, the Agency has contacted other facilities in order to obtain further information concerning K111 and K112 waste generation, management practices, and residuals. Finally, the Agency reviewed information provided in response to the proposed rule (57 FR 957, January 9, 1992).

The Agency has identified approximately 3,500 tons of K111 nonwastewaters and no K112 nonwastewaters and no K111 or K112 wastewaters requiring alternative treatment. The majority of the K111 and K112 wastes generated are currently treated using a variety of alternative treatment or recovery methods and discharged through NPDES. The data indicate that the residuals from treatment of K111 and K112 were further treated before being land disposed.

The Agency estimates that less than 500 tons of U328 and U353 nonwastewaters are being land disposed and will require further treatment as a result of the LDRs. EPA identified no U328 and U353 wastewaters requiring alternative treatment.

Based on the available data (see section VI.B), EPA believes that sufficient capacity exists for treatment of these wastes. Therefore, EPA is not granting a national capacity variance for K111, K112, U328, and U353 wastewaters or nonwastewaters.

d. Ethylene Dibromide (EDB) Production Wastes (K117-Kl18, K136) and Methyl Bromide Production Wastes (K131 and K132).

K117--Wastewaters from the reactor vent gas scrubber in the production of ethylene dibromide via the bromination of ethylene

K118--Spent adsorbent solids from the purification of EDB produced by bromination of ethylene
K136--Still bottoms from the purification of EDB
K131--Wastewater from the reactor and acid dryer from the production of methyl bromide
K132--Spent adsorbent and wastewater separator solids from the production of methyl bromide

For K117, K118, K136, K131, and K132 wastes, EPA is promulgating concentration-based standards based on a transfer of data used to calculate the U029 (bromomethane), U030 (4-bromophenyl phenyl ether), U066 (1,2-dibromo-3-chloropropane), U067 (ethylene dibromide, EDB), U068 (dibromomethane) and U225 (bromoform) Third Rule standards for nonwastewaters; and multisource leachate (F039) performance for wastewaters.
EPA is promulgating standards based on incineration for nonwastewaters; and incineration, or chemical or wet air oxidation followed by carbon adsorption, or biological treatment, or steam or air stripping for wastewaters.

During 1990 and early 1991, EPA collected generation and management information concerning these wastes under the authority of section 3007 in RCRA. This capacity analysis incorporates data from that section 3007 information request. In addition, the Agency reviewed information provided in response to the ANPRM (56 FR 24444) and the proposed rule.

Based on new information received in response to the proposed rule, EPA estimates that less than 100 tons of currently land-disposed K118 nonwastewaters will require alternative treatment. EPA has identified no K117 or K136 waste generation and no K118 wastewaters currently being surface disposed.

EPA has identified no K131 or K132 wastes currently being land disposed and requiring alternative treatment or recovery. All identified K131 wastes currently generated are sent off site for acid reclamation.
Based on available data and using incineration as the treatment technology (see Section VI.B), the Agency believes that sufficient treatment capacity exists for treatment of these wastes; therefore, EPA is not granting a national capacity variance for K117, K118, K136, K131 and K132 wastewaters or nonwastewaters. EPA is granting a two-year national capacity variance to underground injected K117, K118, K131, and K132 wastes (see Section VI.F).

e. Ethylenebisdithiocarbamic (EBDC) Production Wastes (K123, K124, K125, and K126).

K123--Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid (EBDC) and its salts
K124--Reactor vent scrubber water from the production of EBDC and its salts
K125--Purification solids (including filtration, evaporation, and centrifugation solids) from the production of EBDC and its salts
K126--Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of EBDC and its salts

For EBDC wastes, EPA is promulgating incineration as the method of treatment for nonwastewaters; and incineration, or chemical oxidation

followed by biological treatment or carbon absorption as methods of treatment for wastewaters.

During 1990 and early 1991, EPA collected generation and management information concerning the EBDC wastes under the authority of section 3007 in RCRA. This capacity analysis incorporates data from that section 3007 information request.

The Agency has identified less than 100 tons of K125 nonwastewaters that are currently land disposed and will require alternative treatment, and has identified no quantities of K123, K124, or K126 wastes that are currently being land disposed. No generation of K125 wastewaters, K124 wastes, or K126 wastes has been identified.

Based on available data, EPA believes sufficient capacity exists for treatment of the EBDC wastes; therefore, EPA is not granting a national capacity variance for K123, K124, K125, and K126 wastewaters or nonwastewaters.

D. Required and Available Capacity for Newly Listed Wastes Mixed With Radioactive Contaminants

EPA has defined a mixed RCRA/radioactive waste as any matrix containing a RCRA hazardous waste and a radioactive waste subject to the Atomic Energy Act (53 FR 37045, 37046, September 23, 1988). Regardless of the type of radioactive constituents that these wastes contain (e.g., high-level, low-level, or transuranic), they are subject to the RCRA hazardous waste regulations, including the land disposal restrictions.

Radioactive wastes that are mixed with spent solvents, dioxins, California list wastes, or First Third, Second Third, and Third wastes are subject to the land disposal restrictions already promulgated for those hazardous wastes. EPA granted two-year national capacity variances for all of these wastes because of a lack of national treatment capacity. Today's rule addresses the radioactive wastes that contain newly listed hazardous wastes being restricted in today's rulemaking.

The Department of Energy (DOE) is the primary generator of mixed RCRA/ radioactive wastes. A variety of non-DOE facilities also generate mixed RCRA/ radioactive wastes, including nuclear power plants, academic and medical institutions, and industrial facilities. Based upon a review of the available data, including data submitted by DOE under several rulemakings, the quantities of mixed RCRA/radioactive wastes containing newly listed wastes regulated by this rulemaking appear to be small.

Although DOE is in the process of increasing its capacity to manage mixed RCRA/radioactive wastes, information supplied by DOE under other rulemakings indicates that a significant capacity shortfall currently exists for the treatment of mixed RCRA/radioactive wastes, much of which is in storage facilities awaiting treatment. EPA's review of non-DOE data sources also showed a significant lack of commercial treatment capacity as well.

Any new commercial capacity for mixed RCRA/radioactive wastes that becomes available will be needed for mixed wastes that were regulated in previous land disposal restriction rulemakings and whose variances have already

expired (i.e., radioactive wastes mixed with solvents, dioxins, California list wastes, or First Third, Second Third, or Third wastes). In addition, DOE has indicated that it will generally give treatment priority to mixed wastes that are already restricted under previous LDR rules. Thus, EPA has determined that sufficient alternative treatment capacity is not available and is granting a two-year national capacity variance for mixed RCRA/ radioactive wastewaters and nonwastewaters contaminated with newly listed wastes whose standards are being promulgated today.

One commenter on the proposed rule suggested that EPA not rely on DOE to develop the capacity needed to manage the largest quantities of mixed RCRA/ radioactive wastes because of DOE's reportedly poor record of handling radioactive materials. EPA disagrees with this comment. DOE is responsible for managing many radioactive wastes and has a Federal statutory obligation to develop needed capacity. In addition, DOE is subject to regulations designed to ensure that its mixed RCRA/radioactive wastes are properly managed. EPA and authorized states regulate the hazardous components of these wastes under RCRA and the Nuclear Regulatory Commission (NRC) and agreement states regulate the radioactive components under the Atomic Energy Act and other statutes. DOE is generally self-regulating with respect to the radioactive component and is generally exempt from NRC regulations, except for DOE facilities that accept commercial high level wastes which are to be licensed by NRC.

The same commenter also suggested that EPA require that all non-DOE mixed RCRA/radioactive wastes be stored and managed under "emergency permits" at known commercial and on-site facilities, rather than allowing them to be generated, managed, and disposed "at an unknown number of unidentified generator sites." This commenter appears to be confused about the RCRA regulatory program. Mixed RCRA/radioactive wastes are not generated, managed, and disposed at "unidentified generator sites." All generators of more than 100 kilograms/month of RCRA hazardous wastes, including mixed wastes, must obtain an EPA identification number. Mixed RCRA/radioactive wastes, like other RCRA wastes, can be stored at the site of generation for greater than 90 days only if the generator has a permitted or interim status storage facility that is specifically allowed to handle mixed wastes. (In the case of generators of 100-1000 kilograms per month, the limit is 180 days, or 270 days in certain cases.) Furthermore, treatment or disposal of mixed RCRA/ radioactive wastes is allowed only at permitted or interim status treatment or disposal facilities specifically authorized to handle mixed wastes. EPA believes that the current RCRA regulatory program is adequate to ensure proper management of the hazardous component of mixed waste and that "emergency permits" are unnecessary.

E. Required and Available Capacity for Debris Contaminated With Newly Listed Wastes

This capacity analysis focuses on debris contaminated with wastes whose treatment standards are being promulgated in this rule./49/ An estimated 80 percent of all debris contaminated with previously regulated wastes is presently disposed in hazardous waste landfills without prior treatment./50/ In today's rule, EPA is specifying that hazardous debris be treated prior to land disposal using one or more of the following families of debris treatment: extraction, destruction, or immobilization. (The availability of each of these treatments is discussed in greater detail in another section of this preamble.)

NOTE /49/ UDMH (K107-K110), dinitrotoluene (K111), toluene diamine (K112), ortho and para toluidine, ethylene dibromide, methyl bromide, 2-ethoxy ethanol (U359), ethylene bis-dithiocarbamic acid, and F037 and F038 petroleum refining wastes.

NOTE /50/ Previously regulated wastes include solvents and dioxin wastes, California list wastes, and First Third, Second Third, and Third Third wastes. EPA has granted national capacity variances to soil and debris contaminated with First Third, Second Third, and Third Third wastes. The national capacity variances for debris contaminated with Third Third wastes expired on May 8, 1992. However, the Agency has extended this variance for one year (see section VI. of the preamble).

EPA used several data sources to estimate the total quantity of land-disposed hazardous debris. These sources include: comments received in response to the proposed rule (57 FR 958); responses to the ANPRM for the newly listed and identified wastes (56 FR 24444); information provided during a series of roundtable meetings held by the Agency in May and June of 1991 with representatives of companies involved in the management and disposal of hazardous debris; Records of Decision (RODs) of Superfund sites; the National Survey of Treatment, Storage, Disposal and Recycling Facilities (TSDR Survey); and the National Survey of Hazardous Waste Generators (Generator Survey)./51/

NOTE /51/ EPA conducted the surveys during 1987 and 1988 to obtain comprehensive data on the nation's capacity for managing hazardous waste and the volumes of hazardous waste being land disposed as well as data on waste generation, waste characterization, and hazardous waste treatment capacity in units exempt from RCRA permitting.

In general, EPA found severe limitations in estimating the total quantity of hazardous debris because the available data are incomplete and poorly defined. The reason for this lack of comprehensive data is several-fold: First, the regulated community reported that their data generally are not classified by debris but rather by waste code and waste description; second, the data from the TSDR and Generator Surveys were not collected and categorized specifically for debris; and debris were often mixed with soils,/52/ and were frequently contaminated with more than one waste, thereby making the hazardous debris matrix and quantity determinations difficult; third, TSDR and Generator Surveys do not include data on debris contaminated with newly listed and identified wastes because they were not considered hazardous wastes in 1986; and fourth, debris that have been cleaned (decontaminated) are generally not reported as hazardous wastes because they are no longer considered hazardous debris. Commenters to the proposed rule agreed with the Agency's assessment of data limitations.

NOTE /52/ Data submitted by TSDFs in roundtable meetings sometimes combine hazardous debris with soil. Furthermore, TSDFs have stated that historical waste data are generally not kept by debris classifications.

1. Waste Generation

The capacity analysis in today's rule is based on the data sources described above. For the total of currently land-disposed debris contaminated with RCRA hazardous wastes, EPA estimates that approximately one million tons are generated per year based on the reported percentage of the total of all hazardous waste land disposed. EPA also has estimated lower and upper bounds of 700,000 to 2.8 million tons per year, respectively, based on adjustment factors to the TSDR survey data. Some commenters to the proposed rule suggested that the Agency's estimate of the quantities of debris requiring treatment is low. However, no commenter provided national estimates of land- disposed hazardous debris.

The largest quantity of routinely generated debris contaminated with newly listed wastes is debris contaminated with F037 and F038 petroleum refining wastes. EPA's estimate for this quantity is 8,000 tons per year. In addition, EPA received information indicating that additional quantities of debris contaminated with F037 and F038 wastes may be generated from modernization of petroleum refinery sewer and wastewater systems. EPA's estimate for debris contaminated with the remainder of wastes covered by today's rulemaking is less than 2,000 tons per year.

One commenter indicated that EPA's estimate of the quantity of debris contaminated with F037 and F038 wastes was low. However, this commenter provided no data that could serve as a basis for updating EPA's estimate. In the proposed rule, EPA acknowledged that decommissioning of large chemical plants and increasing remediation activities can significantly increase the estimated quantity of hazardous debris.

2. Current Management Practices

Waste generators and TSDFs report that most hazardous debris is currently landfilled without prior treatment. Stabilization or incineration are the reported treatment technologies for the small amounts of hazardous debris that are treated prior to landfilling. However, EPA has received information that materials-handling problems may limit the quantity of hazardous debris that currently can be treated by stabilization and incineration.

Specifically, the size of many types of debris must be reduced before they can be treated (e.g., by shredding or grinding). Heavy duty equipment such as shredders and grinders are generally not part of the treatment process at hazardous waste treatment facilities and are not generally available.

Consequently, the available capacity to treat hazardous debris is currently limited. In addition, large quantities of materials that are currently cleaned (decontaminated) and then managed as nonhazardous wastes may require additional management as hazardous debris. Commenters to the proposed rule agreed with EPA's assessment that there are materials-handling limitations in managing hazardous debris.

3. Available Capacity and Capacity Implications

EPA is promulgating that hazardous debris be treated prior to land disposal using one or more of the following families of debris treatment: Extraction, destruction, or immobilization. While materials-handling problems may limit the available destruction (e.g., incineration) and immobilization (e.g., stabilization) capacities, inadequate capacity exists for many of the promulgated technologies in the extraction family. Much of the capacity of extraction technologies currently used to decontaminate

hazardous debris, such as water washing and steam cleaning, is not currently permitted, although EPA is proposing to expedite the permitting of these technologies.

In conclusion, EPA believes that the current capacity available to treat hazardous debris is limited.

Therefore, EPA is today granting a two-year national capacity variance for debris contaminated with newly listed wastes covered in this rule. This variance would allow sufficient time for the installation and permitting of the treatment systems necessary to handle the quantities of hazardous debris affected by this rule. Existing commercial capacity and any new commercial capacity for debris that becomes available will be needed for debris contaminated with wastes listed in previous land disposal restriction rulemakings and not granted a capacity variance (i.e., debris contaminated with solvents, dioxins, or California list wastes). Commenters to the proposed rule generally agreed with EPA's analysis and the need for a national capacity variance for debris contaminated with newly listed wastes covered in this rule.

F. Capacity Determination for Underground Injected Wastes

As explained in previous rules concerning land disposal restrictions (see, e.g. 52 FR 32450, August 27, 1987; 53 FR 30912, August 16, 1988; 55 FR 22520, June 1, 1990), EPA is allocating available capacity first to those wastes disposed in surface units, next to wastes resulting from CERCLA and RCRA clean ups, and finally to underground injected wastes. Based on the continued application of this approach, the Agency is promulgating the following effective dates for injected wastes.

1. Newly Listed Wastes With Treatment Standards Which Current Data Indicate Are Not Being Underground Injected

The wastes K107, K108, K109, K110, K123, K124, K125, K126, K136, U328, U353, and U359 are the newly listed wastes for which numerical standards or specified methods are being promulgated, and which current data indicate are not being underground injected. Therefore, EPA is prohibiting these wastes from underground injection upon the effective date of this rule.

2. Newly Listed Wastes With Treatment Standards Which Current Data Indicate Are Being Underground Injected

The wastes F037, F038, K111, K112, K117, K118, K131, and K132 are the newly listed wastes for which current data indicate are being underground injected by Class I hazardous waste injection wells.

For K111 and K112 waste from the production of dinitrotoluene or toluenediamine, pretreatment includes neutralization and filtration. Only a small amount of this waste is being disposed of in a Class I hazardous waste injection well which has received a no-migration petition.

The treatment standards for F037 and F038, petroleum refining wastes, are based upon transfer of the performance of technologies previously established for K048-K052 wastes. Based on the Hazardous Waste Injection Well Inventory data base, EPA believes that a small volume of F037 and F038 wastes are being underground injected annually by permitted injection

wells. No new data, indicating that larger injected volumes of these wastes, were received by the Agency during the comment period for the proposed rule. Therefore, as adequate alternative treatment capacity appears to be available, the Agency is not granting a two-year national capacity variance for any injected F037, F038, K111, and K112 waste, and is prohibiting these wastes from underground injection upon the effective date of this rule.

The treatment standards for K117, K118, K131, and K132 wastes are based upon liquid incineration. One comment received from the proposed rule indicated that a large volume of these wastes, which are in a mixed non-segregable waste stream exceeding 300 million gallons annually, were being underground injected. The Agency's current data indicate that there is inadequate available commercial treatment capacity for these wastes. Therefore, EPA is granting a two-year national capacity variance for injected K117, K118, K131, and K132 wastes in today's rule.

G. Revisions to Treatment Standards for K061, F006, and K062

In today's rule, the Agency is removing the low and high zinc subcategories for K061 and establishing the same numeric treatment standards based on HTMR for all K061 nonwastewaters. EPA also is establishing alternative treatment standards based on HTMR for K062 and T006. Today's rule does not preclude the use of any treatment technology that can meet these standards nor does it preclude the use of any technology that can meet the previously promulgated treatment standards for K062 and F006. The Agency received several comments questioning the availability of HTMR capacity to treat these wastes. Although commenters also questioned whether stabilization could meet the treatment standards, one commenter submitted information that their stabilization process does meet the numeric treatment standards for K061. Since any technology that can meet the numeric standards for K061 can be used to treat those wastes, the Agency believes that there is sufficient treatment capacity for K061. Similarly, since the treatment standards based on HTMR for K062 and F006 are alternative standards and any technology currently used to treat K062 and F006 to the previously promulgated standards may continue to be used, the Agency believes that there is sufficient treatment capacity for K062 and F006.

VII. Implementation

As described in section VIII. of this preamble, State Authority, today's rule is being promulgated under HSWA authority. Therefore, until states receive authorization to implement today's rule, the Federal procedures and standards will be used for its implementation. The following sections describe some of the relevant generator and permitting procedures that apply to waste handlers as they comply with today's rule.

A. Facilities Qualifying for Interim Status Due to Storage of Prohibited Wastes

As discussed elsewhere in today's preamble, EPA has determined that adequate treatment capacity for hazardous debris will not be available following the expiration of the national capacity variance for these wastes on May 8, 1992, and has therefore granted a one-year national case-by-case

extension to the LDR effective date for hazardous debris, provided certain recordkeeping and other requirements are met. However, even by May 1993 there will likely be generators who will still have difficulty obtaining treatment for these wastes. To a lesser degree, there may also be situations where generators of the newly listed wastes--for which treatment standards are prescribed in today's rule--are unable to initially arrange for appropriate treatment. Therefore, EPA believes that some generators without permits or interim status will need to accumulate wastes restricted from land disposal by today's rule for more than 90 days in order to acquire treatment required by part 268. Although 90 days is the maximum period allowed for accumulation storage at generator sites, if the wastes must remain on-site longer due to unforeseen, temporary, or uncontrollable circumstances, an extension of up to 30 days may be granted at the Regional Administrator's discretion. (See 40 CFR 262.34.) If, despite the best efforts of the generator, waste accumulation will exceed the 90 day limit (or 120 day limit, if an extension is granted), then the generator must obtain interim status for continued storage.

Section 3005(e) of RCRA establishes the criteria for obtaining interim status, and 40 CFR 270.70(a) codifies that provision. This section provides that facilities "in existence on the effective date of statutory or regulatory changes * * * that render the facility subject to the requirement to have a permit" may qualify for interim status if they make the appropriate application. A generator who is accumulating hazardous wastes in tanks or containers before the effective date of today's rule is "in existence" and may qualify for interim status provided that the continued storage is necessary to comply with the land disposal restrictions. Section 3005(e)(1) allows interim status only where new regulatory requirements subject an existing facility to permitting requirements. It is not intended to provide an opportunity for a facility to newly engage in hazardous waste management.

Generators who need to obtain interim status should submit a part A permit application to the Agency as provided in part 270. (Part A application instructions can be found at Sec. 270.13.) In the part A application, the generator must demonstrate that the additional accumulation time is necessary as a result of the land disposal restrictions of part 268.

The part A must be submitted to the Agency by the deadline specified in Sec. 270.10(e). Note that the Sec. 270.10(e) deadline is the earlier of the following two alternative dates: (1) Six months after publication of regulations which first require the facility to comply with part 265, or (2) thirty days after the date they first become subject to the standards in part 265. It is expected that the deadline for most, if not all, of the large quantity generators will be established by the second alternative. By operation of 40 CFR 270.10(e)(ii), the generator first becomes subject to the permitting requirements when he exceeds the generator accumulation time limit. For example, after the 90-day accumulation period ends, the generator would be required to submit the part A within 30 days. Therefore, it is critical that any generator who will be newly subject to the interim status requirements become familiar with the part 270 requirements and submit the part A application on time.

Generators applying for interim status must comply with the applicable requirements of part 265. These new interim status facilities are also subject to corrective action orders under section 3008(h) of RCRA.
Furthermore, if requested by the Administrator, the facility will be

required to submit its part B permit application.

EPA anticipates that some of these new interim status facilities managing debris may find containment buildings more suitable for the storage or treatment of their restricted wastes than their existing tanks or containers.
These facilities may request certain changes during interim status by following the procedures described below.

B. Containment Buildings at Generator Sites

As explained in section IV.G.3. of this preamble, generators who want to add a containment building for accumulation (including treatment) of waste for less than 90 days, can do so without obtaining a RCRA permit, provided the conditions in Sec. 262.34 are met. These conditions include compliance with the containment building standards in subpart DD of part 265 and certain recordkeeping and reporting requirements. Such containment buildings can be used indefinitely, provided the generator ensures that each volume of waste remains in the unit for 90 days or less. When the generator has no further need to manage hazardous waste in the unit, then the building must be closed in accordance with Sec. 265.1102.

C. Addition of Waste Management Capacity at Permitted and Interim Status Facilities

1. Permitted Facilities

Permitted treatment, storage, and disposal facilities may add new treatment processes and additional capacity pursuant to today's rule by applying for a permit modification under the Federal regulations at Sec. 270.42 (see 53 FR 37912, September 28, 1988, for a full explanation of the permit modification procedures). Although the regulations at Sec. 270.42 were promulgated under pre-HSWA authority, EPA may use these regulations in authorized States when necessary to implement HSWA provisions such as the land disposal restrictions (see 53 FR 37933).

The types of modifications needed to add new capacity or processes would likely require the submittal of a Class 2 or 3 modification. For containment buildings the permit modification type can be determined by consulting new section M in appendix I of Sec. 270.42. The Class 2 modification process requires Agency action on the request within 120 days. This action would consist of approval or denial, reclassification as a Class 3 modification, or authorization to conduct the activities for up to 180 days pending Agency action. Furthermore, for Class 2 modifications, construction to implement the requested facility change may commence 60 days after submission of the request. There is no deadline for Agency action for Class 3 modifications, which apply to more substantial facility changes.

Permitted facilities may also apply for a temporary authorization to initiate necessary activities while a Class 2 or 3 permit modification request is undergoing review, or to undertake a treatment or storage activity which will be of short duration. EPA may grant a temporary authorization for a term of up to 180 days. Any request for a temporary authorization must demonstrate compliance with the part 264 standards and

also meet the criteria of Sec. 270.42(e) for approval. Today's rule amends Sec. 270.42(e)(3)(ii)(B) to allow temporary authorizations for containment buildings where necessary to treat or store restricted waste, including hazardous debris, in accordance with part 268. Interested members of the public (i.e., those that have previously expressed interest in any permitting action for the facility) will receive notice by mail of a facility's request for a temporary authorization, and another mail notice if EPA approves the request. The temporary authorization may be renewed once if the additional procedures of Sec.
270.42(e) are followed, including the submission of appropriate permit modification information and the initiation of public meetings and public comment period. (See 53 FR 37919, September 28, 1988 for additional discussion of temporary authorizations.)

2. Interim Status Facilities

Treatment, storage, and disposal facilities managing hazardous waste under interim status may add new treatment processes or additional treatment or storage capacity by using the existing procedures for changes during interim status in Sec. 270.72. Under these procedures, a facility must submit to EPA a revised part A permit application and justification explaining the need for the change. The change may then be approved by EPA.

In order for the change to be approved by EPA, it must meet one of several criteria, such as being necessary to comply with a Federal, State, or local requirement. Note that changes may not be made if they amount to reconstruction of the facility. This occurs when the capital investment for the changes to facility exceed 50 percent of the capital cost of a comparable entirely new facility. However, Sec. 270.72(b)(6) in today's rule lifts the reconstruction limit for changes to treat or store in containment buildings hazardous waste subject to land disposal restrictions imposed by part 268, provided that the changes are made solely for the purpose of complying with part 268.

D. Conversion of Enclosed Waste Piles to Containment Buildings at Permitted and Interim Status Facilities

EPA expects that many permitted and interim status facilities will make changes to existing enclosed waste piles to meet the technical standards for containment buildings. These facilities may either continue the operation of the containment building under its permit or interim status, or may wish to operate the containment building in accordance with the 90-day generator accumulation provision in Sec. 262.34.

I. Conversion of Enclosed Waste Piles to Interim Status or Permitted Containment Buildings

Permitted facilities may convert their enclosed waste piles to containment buildings by submitting a Class 2 permit modification, as provided in Item I.6. in appendix I to Sec. 270.42. Facilities under interim status may amend their part A permit applications to convert an enclosed waste pile to a containment building under Sec. 270.72(a)(3) as a change in process. Interim status facilities must submit a revised part A permit application and a justification explaining the need for the change to the Agency. The Agency must then approve the change before it can be implemented. After the conversion, the containment building standards of part 265 subpart DD would

apply to the unit instead of the waste pile standards of subpart L. Closure of the enclosed waste pile is not triggered by the conversion process since hazardous waste will continue to be managed in the unit and the unit remains fully subject to the requirements of the permit or interim status.

2. Conversion of Permitted or Interim Status Enclosed Waste Piles to Accumulation Units Under Section 262.34

Section 262.34 allows generators to accumulate wastes on-site in certain units for 90 days or less without having a permit or interim status provided that they meet the requirements of that section. Today's rule extends the applicability of Sec. 262.34 to accumulation in containment building units.

Owners and operators of new containment buildings that have not operated under interim status or a permit can accumulate wastes under Sec. 262.34 provided they meet the requirements of that section. Owners and operators of enclosed waste piles that are permitted or operating under interim status can convert those units to generator status and continue accumulating wastes under the provisions of Sec. 262.34 if they first meet the requirements for closure of the unit under Sec. 264.1102 or Sec. 265.1102.

In the case of tanks, the Agency has encountered many owners and operators that have sought conversion from permitted or interim status to generator status but have been unable to satisfy the closure requirements of Sec. 264.197 or 265.197 without ceasing operation of the unit. While the Agency does not seek to require owners and operators to take these units out of operation as part of the conversion to generator status, the Agency does not allow conversion to generator status to serve to exempt permitted and interim status units from the applicable closure and financial responsibility requirements. The Agency seeks to assure that all units that have operated under the requirements of part 264 or 265 satisfy the applicable closure requirements of those parts, and that funds be available to do so. Thus, permitted or interim status tanks that convert to 90-day generator status must undergo full closure before they are released from financial assurance requirements. However, closure requirements are triggered by the final receipt of hazardous waste--not by conversion to 90-day generator status. Therefore, the tank may defer RCRA closure until it is taken out of hazardous waste service.

Similarly, where owners and operators of interim status or permitted containment buildings seek to convert to 90-day generator status but cannot close the unit without taking it out of operation, the owner or operator may accumulate waste as a generator under the provisions of Sec. 262.34 (without a permit requirement) and close the unit at a later date. However, it should be noted that unless the owner or operator satisfies all applicable closure requirements prior to conversion, the unit remains subject to the requirements of subparts G (closure) and H (financial responsibility) until closure of the unit is complete. Furthermore, if the facility is in interim status, it retains interim status until a permit application is denied or interim status is lost. Permitted facilities would retain any corrective action requirements, but could seek permit amendments to eliminate 40 CFR part 264 standards to which they were no longer subject (e.g., waste analysis plan).

VIII. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in authorized States in the interim.

Today's rule is being promulgated pursuant to sections 3004(d) through (k), and (m), of RCRA (42 U.S.C. 6924(d) through (k), and (m)). It is added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and that take effect in all States, regardless of their authorization status. States may apply for either interim or final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate that this rule is a self-implementing provision of HSWA.

EPA is also finalizing a new management unit, containment buildings, which involves redefinition of the term "pile," pursuant to HSWA. This provision assures an adequate means of implementing the treatment standards, either by providing a means that treatment can occur without constituting impermissible land disposal, or by providing a safe staging area that would not constitute land disposal before best treatment. Cf. 56 FR 41175 (August 19, 1991) (portion of rule assuring availability of capacity adopted pursuant to HSWA).

Thus, this portion of the rule is adopted pursuant to HSWA and takes effect immediately in authorized States.

B. Effect on State Authorization

As noted above, EPA is today finalizing a rule that will be implemented in

authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. Because the rule is pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. It should be noted that HSWA interim authorization will expire on January 1, 1993 (see 40 CFR 271.24(c)).

Section 271.21(e)(2) requires that States with final authorization must modify their programs to reflect Federal program changes and to subsequently submit the modification to EPA for approval. The deadline by which the State would have to modify its program to adopt these regulations is specified in Sec. 271.21(e). The deadline is July 1, 1993 if this rulemaking is finalized on or before June 30, 1992. This deadline can be extended in certain cases (see Sec. 271.21(e)(3)). Once EPA approves the modification, the State requirements become subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's final rule. These State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, States with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. However, the State must modify its program by the deadline set forth in Sec. 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a state must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

The regulations being finalized today need not affect the State's Underground Injection Control (UIC) primacy status. A State currently authorized to administer the UIC program under the Safe Drinking Water Act (SDWA) could continue to do so without seeking authority to administer the amendments that will be promulgated at a future date. However, a State which wished to implement part 148 and receive authorization to grant exemptions from the land disposal restrictions would have to demonstrate that it had the requisite authority to administer sections 3004 (f) and (g) of RCRA. The conditions under which such an authorization may take place are discussed in a July 15, 1985 final rule (50 FR 28728).

IX. Regulatory Requirements

A. Economic Impact Screening Analysis Pursuant to Executive Order 12291

Executive Order No. 12291 requires that a regulatory agency determine whether a new regulation will be "major" and, if so, that a Regulatory Impact Analysis (RIA) be conducted. A major rule is defined as a regulation likely to result in an annual effect to the economy of $100 million or more; a major increase in costs or prices for consumers, individuals, industries, Federal, State, and local government agencies, or geographic regions; or significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets. An RIA is a quantification of the potential benefits, costs, and economic impacts of a rule.

The Agency estimated the costs of today's rule to determine if it is a major regulation as defined by Executive Order 12291. The Agency expects today's rule to have an incremental annual cost below $100 million. Also, the Agency does not believe the rule will significantly increase costs for consumers, individuals, industries, Federal, State and local government agencies, or geographic regions, or have significant adverse effects on competition, employment, investment, innovation, or international trade.

The Agency has performed an Economic Impact Screening Analysis for this rule. The Agency has not assessed benefits but has rather focused its analyses on the costs and economic impacts attributable to today's rule.

1. Cost Methodology

To assess the cost of today's rule, EPA developed a cost methodology with four major analytical concerns: (a) Petroleum refining wastes, (b) remaining wastes affected by the rule, (c) hazardous debris, and (d) storage and treatment in containment buildings. In this section, the Agency summarizes the methodology it adopted for each of these concerns. In addition, at the end of the cost methodology section, EPA also lists several wastes included in today's rule which are not expected to be associated with any regulatory impacts.

a. Approach for Petroleum Refining Wastes (F037 and F038). In the analysis of the compliance costs for the treatment standards being set for petroleum refining wastes, the Agency first reviewed the work completed for the listing of F037 and F038, which EPA promulgated in October 1990 (see 55 FR 46386, subsequently referred to as the Listing Rule or Listing RIA)./53/ EPA estimated in the Listing RIA that 470,000 tons of F037 and F038 nonwastewaters (with an average water content of 55 percent) were generated annually. The Agency assessed compliance costs for this volume under a compliance scenario that included LDR treatment before land disposal because it believed that the realistic post-regulatory management practice after listing will include treatment. The LDR treatment scenario consisted of dewatering of the waste followed by either incineration (on-site or off-site) or solvent extraction (on-site).

NOTE /53/ Regulatory Impact Analysis for the Listing of Primary and Secondary Oil/Water/Solids Separation Sludges from the Treatment of Petroleum Refinery Wastewaters, prepared for U.S. EPA, Office of Solid Waste, Economic Analysis Staff, by DPRA, October 1990.

For today's rule, the Agency updated the F037 and F038 volume estimates used in the Listing RIA based on additional generation information obtained as part of the capacity determination (see section VI.C for the capacity analysis of F037 and F038). Based on this updated information, the Agency estimated that 223,000 tons of F037 and F038 nonwastewaters are generated annually (with an average water content of 30 percent). EPA estimated that 56,000 tons per year of F037 and F038 wastes were treated to meet the treatment standards in the baseline and that the industry will incur incremental costs in treating the remaining 167,000 tons.

Of the 167,000 tons of land disposed F037 and F038 requiring treatment, EPA estimated that roughly 17,000 tons (i.e., 10 percent) is land disposed in California. California has its own LDR program, under which F037 and F038 waste are restricted from land disposal as of May 8, 1992. The California land ban standards are substantively equivalent to those standards in today's rule. Thus, even if the Federal regulations are not promulgated, F037 and F038 waste will be restricted in this State. Therefore, EPA estimated that only 150,000 tons annually of F037 and F038 will require additional treatment prior to land disposal as a result of today's rule. For its cost analysis, EPA is ignoring the effect of the one-year national capacity variance being granted for this volume and rather estimates the expected annualized cost several years after the listing decision.

For the baseline scenario, the Agency estimated that 96,000 tons per year (i.e., 64 percent) of the F037 and F038 waste requiring additional treatment is managed on-site, and the remaining 54,000 tons (i.e., 36 percent) is sent off-site. Of the waste managed on-site, the Agency estimated that 91,000 tons per year (i.e., 95 percent) is managed using land treatment, and 5,000 tons per year (i.e., 5 percent) is landfilled. All wastes disposed off-site were assumed to go to landfills.

For the post-regulatory scenario, the Agency assumed that 130,000 tons (i.e., 87 percent) of the 150,O00 tons requiring additional treatment will be treated on-site. Although the Listing RIA did not project any volume of waste going to on-site cokers, information indicates that in the post-regulatory scenario 34,000 tons per year (i.e., 26 percent) of the F037 and F038 volume managed on-site will be disposed of in such a manner, at a cost of $200 per ton. The remainder of the F037 and F038 volume managed on-site was assumed to be split evenly between solvent extraction (48,000 tons per year, or 37 percent, at a cost of $500 per ton) and incineration (48,000 tons per year, or 37 percent, at a cost of $400 per ton). The post-regulatory scenario assumed disposal of residuals in subtitle C landfills.

The Agency assumed that 20,000 tons per year (i.e., 13 percent) of the 150,000 tons requiring additional treatment will be treated off-site. The Agency estimated that 2,000 tons per year (i.e., 10 percent) of this volume will go to incineration, at a cost of $1,600 per ton, and the remaining 18,000 tons per year (i.e., 90 percent) will go to cement kilns, at a cost ranging from $700 per ton to $1,200 per ton. Although the Agency doesn't expect large increases in cement kiln capacity, there is uncertainty about future prices charged by cement kilns for hazardous waste.

b. Approach for Remaining Wastes. To determine the cost and economic impacts of the rule for newly listed wastes other than F037 and F038, EPA

first identified the industries that will be affected. The Agency analyzed these industries to determine the amounts of the affected wastes that they generate, how these wastes are currently managed, and how these wastes will have to be managed to comply with LDR treatment standards.

The incremental cost of today's rule for each waste was estimated by comparing post-regulatory costs with the costs of current, or baseline, conditions. EPA lacked site-specific waste generation data for this screening analysis. Accordingly, the Agency developed costs for the baseline and post- regulatory scenarios assuming off-site commercial treatment for all wastes included in the cost analysis, even though off-site treatment may not be used by all generators since it generally is more expensive than on-site treatment.

The following paragraphs explain the approach used to evaluate costs for wastes besides F037 and F038 affected by today's rule.

(i) Newly Listed Organic Wastes. All newly listed organic chemical wastes affected by today's rule--unsymmetrical dimethylhydrazine production wastes, 2-ethoxyethanol, dinitrotoluene and toluenediamine production wastes, ethylene dibromide production wastes and methyl bromide production wastes, and ethylenebisdithiocarbamic acid production wastes--are land disposed in relatively small quantities. The baseline for all newly listed wastes was defined as continued land disposal in units meeting minimum technological requirements.

(ii) K061, F006, K062. Today's rule eliminates the low zinc subcategory for K061 wastes and establishes numeric treatment standards for all K061 based on high temperature metals recovery (HTMR). Wastes previously included in the high zinc subcategory of K061 already had to meet treatment standards based on HTMR; they are unaffected by this change. Wastes previously included in the low zinc subcategory of K061 had to meet numeric treatment standards based on stabilization, although in some cases HTMR was being used.

EPA's cost analysis for the regulatory changes to K061 considered only the low zinc subcategory since wastes in the high zinc subcategory are not affected by the rule. The Agency assumed the baseline for wastes previously included in the low zinc subcategory K061 is stabilization. The Agency assumed that in the post-regulatory scenario managers of these wastes will use HTMR.

Today's rule establishes numeric treatment standards based on HTMR as an alternative treatment standard for K062 and F006. The Agency did not quantify the cost impact of the rule for these two wastes; it believed that any operator using HTMR for K062 and F006 will be using the technology only because it is more cost-effective than current management practices.

c. Approach for Hazardous Debris. (i) Previously Regulated Hazardous Debris. The majority of hazardous debris is already regulated under the Solvents and Dioxins, California list, and the First Third, Second Third, and Third Third LDR rules due to the waste code-carry-through principle. The waste code-carry-through principle, or mixture rule, states that a solid waste mixed with a listed hazardous waste bears the waste code of the listed hazardous waste.

For this hazardous debris, which is already restricted under the LDR

program, the standards in today's rule are expected to be easier to implement and less costly than the previous standards. As one commenter stated, by specifying multiple acceptable BDAT technologies for a given hazardous contaminant category and debris class, EPA has given the generators and treaters a number of options to allow more cost-effective and efficient treatment of hazardous debris. In addition, the Agency is allowing hazardous debris to be treated to meet the existing LDR standards established for the listed wastes if the managers of hazardous debris so desire.

To estimate the incremental annual cost of treating previously regulated hazardous debris, EPA constructed probabilistic distributions of both the volume of previously regulated hazardous debris and the unit costs of treating various subsets of this volume before and after the rule takes effect. EPA relied on the expert judgment of its technical staff to collect the data necessary for this step. EPA considered three sources of generation of previously regulated hazardous debris: routinely generated debris (approximately 20 percent of all previously regulated hazardous debris), debris generated at remedial actions required by Federal and State regulations (approximately 30 percent), and debris generated at demolition and construction sites (approximately 50 percent). The volumes associated with each of these sources were further divided based on other considerations that would determine the type and cost of the technology used to treat the debris.

EPA's approach for previously regulated hazardous debris did not focus on volume and cost estimates for specific wastes or facilities. For this set of debris, estimates of total volume and costs were apportioned to sets of facilities with different debris generation characteristics and different treatment patterns. EPA assumed that in the baseline, incineration would always be used for debris contaminated with organic wastes (estimated to be 20 percent of previously regulated hazardous debris, on average, for all sets of facilities); immobilization always would be used for debris contaminated with organic wastes (estimated to be 20 percent of previously regulated hazardous debris, on average, for all sets of facilities); and incineration followed by immobilization always would be used for debris contaminated with both organic and inorganic wastes (estimated to be 60 percent of previously regulated hazardous debris, on average, for all sets of facilities). In the post-regulatory scenarios, EPA assumed that debris contaminated with organics would be treated using incineration 20 percent of the time and washing the remaining 80 percent of the time, debris contaminated with inorganics always would be treated using immobilization (i.e., no change from the baseline treatment), and debris contaminated with both organics and inorganics would be treated using incineration followed by immobilization 20 percent of the time and washing followed by immobilization 80 percent of the time. Cost information, presented in appendix C of the EIA was gathered for the Phase I analysis based on industry contacts and professional judgment. The ranges used for the costs of incineration and washing reflected that some debris treated with the technologies in the post-regulatory scenario would be exempted from subtitle C management.

(ii) Newly Regulated Hazardous Debris. To gather information for its cost estimate of treating debris contaminated with wastes newly restricted under today's rule, EPA used an approach involving structured interviews with recognized experts in the area of hazardous debris volumes and treatment technologies. An integral part of these interviews was identifying the

uncertainties associated with estimates of future hazardous debris generation rates and treatment costs.

EPA first identified individuals with expert knowledge of the industries generating and managing newly regulated hazardous debris. EPA identified nine experts. Four of these experts were senior environmental managers associated with several of the 14 organic chemical facilities that potentially could generate debris contaminated with organic chemical production wastes regulated by today's rule. The remaining five experts were senior environmental managers associated with several of the over 190 petroleum refineries that could potentially generate debris contaminated with F037 and F038.

The Agency then developed protocols for structured interviews with the experts who had been identified. The Agency's protocol was similar in structure to those used by Stanford/SRI /54/ and Morgan and Henrion,/55/ although it was substantially abbreviated due to time constraints. The protocol involved five basic stages. These stages could be described as: (1) Motivating, (2) structuring, (3) debasing, (4) encoding, and (5) verifying.

NOTE /54/ See: Spetzler, C.S. and Stael Von Holstein, C.-A.S., "Probability Encoding in Decision Analysis", Management Science, Vol. 22, No. 3. and Stael Von Holstein, C.-A.S. and Matheson, J.E., A Manual for Encoding Probability Distributions, SRI International, Palo Alto, CA., 1979.

NOTE /55/ Morgan, M.G. and Henrion, M., Uncertainty: A Guide to Dealing with Uncertainty in Quantitative Risk and Policy Analysis, Cambridge: Cambridge University Press, 1990.

Two individuals conducted each interview, one a professional facilitator and the other an engineer with expertise in the industry being regulated. Interviews typically lasted one hour, during which time information on hazardous debris volumes and incremental treatment costs was solicited. Interviewers stressed that ranges should be supplied rather than point estimates, and they requested that experts provide percentile probabilities for these ranges.

After the Agency had collected information from experts, it aggregated data and generated cost results in terms of ranges that reflected the uncertainty of the analysis. EPA used a probabilistic model to develop volume and cost estimates. The Agency produced overall volume and cost estimates for the newly regulated debris treatment standards based on the medians of data; it also generated ranges of volumes and costs that have a 98 percent likelihood of containing the true values. EPA analyzed volumes and costs separately for the petroleum refining industry, which will generate debris contaminated with F037 and F038, and the organic chemicals industry, which will generate the remainder of debris effected by the rule.

d. Methodology for Assessing Regulatory Impact Due to Storage and Treatment in Containment Buildings. As a result of today's rule, containment buildings could be used as a method of waste management. They potentially could provide regulatory relief to the regulated community. Accordingly, the Agency assessed the potential cost implications of using

these units. In its assessment, EPA considered industries that will use containment buildings for storage of bulk wastes and treatment of contaminated debris.

(i) Industries and Wastes Potentially Using Containment Buildings for Storage of Bulk Wastes. EPA believes that two primary categories of facilities currently use structures very similar to containment buildings for storage and are likely to convert to use of containment buildings in the future: mineral processing and metal recycling facilities. Within the mineral processing category, the Agency believes that generators of aluminum potliners will be particularly affected by the provision. Within the metal recycling category, the Agency believes that brokers of batteries, battery recyclers (i.e., lead smelters), and generators and recyclers of dust and ash from primary steel producers will be particularly affected. The Agency bases these beliefs on a review of the waste volumes these industries generate and comments that it has received on industrial practices. In addition, the Agency received extensive public comment from representatives of the three industries, thus enabling the Agency to perform a more detailed analysis of these industries than of other industries.

In the case of aluminum potliners, EPA is assuming that aluminum facilities already have Subtitle C storage permits, since potliners are currently being stored on-site in waste piles pending bulk shipment off-site. Because waste piles are a form of land disposal, if there was no containment building provision, in order to comply with the LDRs EPA believes that large facilities will have revert to sending potliners off-site at the time of generation. This change in practices would result in higher transportation and disposal costs, given the increased frequency of shipments. Today's containment building provision will allow large generators of spent aluminum potliners to continue their present management methods even after treatment standards are set for K088.

In the case of the lead acid battery recovery industry, the Agency believes that brokers of lead acid batteries and recyclers of lead acid batteries will be the primary parties affected by the containment building provision.

Attempts to handle furnace feed materials differently have proven unsuccessful and to date remain infeasible. Because EPA considers the staging of furnace feed materials in the furnace feed areas as land disposal under the LDRs, bulk storage would be prohibited unless the materials are first treated. Thus, if containment buildings were not excluded from LDR regulation, generators would have to seek treatment alternatives, such as off-site stabilization, that might be more expensive than lead recycling and that do not promote resource recovery. Today's provision will allow brokers and secondary smelting facilities to accumulate sufficient quantities to allow for more efficient shipment and processing.

Lastly, with regard to the primary steel production industry, steel facilities store, and sometimes treat, production dust, primarily K061, in order to lower the cost of waste management through waste accumulation. As in the lead smelting industry, attempts to handle furnace feed materials differently are infeasible. If generators are not able to store waste to facilitate transportation and treatment, they would have to seek management alternatives, such as off-site stabilization, that would remain feasible if waste had to be sent off-site immediately after generation. These

alternatives might be more expensive than HTMR. The Agency believes that both generators of K061 and HTMR facilities could take advantage of the containment building provision and continue to store wastes in the present manner.

The Agency recognizes the possibility that small generators and recyclers of bulk hazardous waste may not recognize as significant regulatory relief from the containment buildings provision as larger generators. Small generators are less likely than larger generators to have existing structures which are similar in design to containment buildings, and small generators may not generate enough waste to fully capitalize a containment building. The Agency believes that many small generators and recyclers of all types of bulk hazardous waste presently use concrete storage bins that are regulated under RCRA as tanks (and thus are granted a 90-day storage exclusion from the LDRs). Storage in concrete bins is possible for small generators and recyclers because they do not need the large areas to store and monitor their hazardous waste. For example, a small generator of aluminum smelting waste may store its spent potliners, each weighing about 10 tons, in a tank-like concrete bin. Because of this use of concrete bins, the Agency believes that many small generators already enjoy the exclusion from the LDRs that use of containment buildings would provide.

On the other hand, the industrial practices of large generators and recyclers often necessitate the use of large containment buildings. Large aluminum smelting facilities are likely to generate spent potliners weighing an order of magnitude more than those of small generators (e.g., 150 tons versus 10 tons) and thus they could take advantage of the increased storage capabilities of large containment buildings. Large recyclers often require large areas for proper monitoring and preparation of waste, and also could benefit from the containment building provision. For example, large recyclers of lead smelting require substantial staging areas to achieve time-efficient and proper draining of lead waste from "cracked" batteries. Large facilities are the primary facilities likely to gain economies of scale in the transportation, treatment, and disposal costs from the containment building provision. As a result, the Agency believes that large volume managers of wastes, such as those found in the three industries being analyzed, will realize significant benefits from the provision, while small volume managers will not.

For this reason, as well as the fact that the scarcity of data on smaller facilities does not permit a meaningful analysis, the Agency has focused its analysis on large generators. The Agency acknowledges that other industries besides the three being considered could profit from the containment building provision. The Agency, however, is using the analysis of these three industries to gain an understanding of the economic implications of containment buildings in use for storage of wastes.

(ii) Facilities Potentially Using Containment Buildings for Treatment of Hazardous Debris. In addition to analyzing the use of containment buildings in the aluminum smelting, secondary lead smelting, and steel production industries, the Agency assessed the effects of the provision on facilities generating hazardous debris. To analyze the potential cost savings associated with treatment in containment buildings, EPA assumed in lieu of the today's rule, that facilities would treat hazardous debris off-site; the Agency assumed that under the containment building provision in today's rule, facilities will treat debris on-site inside containment buildings. The Agency used a weighted average of commercial on-site and off-site

extraction and immobilization costs for its cost comparison and took into account the cost of constructing and operating a containment building.

e. Wastes Not Considered. The costs associated with two groups of wastes--F001 through F005 spent solvents and 24 K- and U-wastes with wastewater standards based on scrubber waters--were not quantified by the Agency in this screening analysis. The Agency has regulated these wastes previously and is revisiting them in the rule only to modify the basis for concentration standards. The modifications are for the purpose of standardization in testing procedures and in the basis for treatment standards and for the purpose of clarification to ensure appropriate placement in the Code of Federal Regulations. These modifications will not change the required management practices for any of these wastes significantly. Thus, the Agency expects such changes to have no significant cost impacts.

2. Cost Estimates

a. Total Cost Estimate. The estimate for the incremental annual cost of the standards promulgated in today's rule is $57 million to $65 million per year./56/ Table IX-1 presents quantities of the wastes affected by today's rule. The estimated cost of compliance with the rule for each waste is presented in Table IX-2. Neither table includes F001 through F005 spent solvents or the 24 K- and U-wastes covered by today's rule because the effect of the rule on these wastes is negligible, as explained in Section IX.1.e.

NOTE /56/ Wastewaters account for none of the cost of today's rule. No compliance costs are expected for treatment of wastewaters because wastewaters are typically discharged to publicly owned treatment works (POTWs) or to coastal and inland waterways under National Pollution Discharge Elimination System (NPDES) permit provisions. When wastewaters are discharged in this manner, they are not subject to the treatment standards required by the LDRs under RCRA.

b. Waste Code Cost Estimates. (i) Petroleum Refining Wastes (F037 and F038). The Agency estimates the total incremental annual cost for treatment of F037 and F038 nonwastewaters to range between $40 million and $47 million.

This figure is based on an annual F037 and F038 land disposed volume of 130,000 tons per year in States other than California. In the upper bound of the cost range shown for F037 and F038, 35 percent of the post-regulatory cost are from off-site treatment. The high cement kiln price used in this analysis, $1,200 per ton, is expected to be an overestimate of the long-term price for treatment in cement kilns. Presently, cement kilns appear to be charging rates slightly below those charged by incinerators; as more cement kilns are able to handle wastes their prices should decrease. Because of the high prices charged by cement kilns, the Agency has analyzed the costs for F037 and F038 in a range, as shown above.

Table IX-1.--Summary of Annual Quantities of Wastes Affected by the LDRs

Line No.	Waste	Annual land disposal rate	Form of waste affected

1. Petroleum refining sludges (F037 and F038)	130,000 tons of routinely generated waste currently land disposed, excluding waste generated in California	Dewatered sludge	
2. Unsymmetrical dimethylhydrazine production wastes (K107-K110)	No longer produced		
3. 2-Ethoxyethanol (U359)	<500 tons	Nonwastewater	
4. Dinitrotoluene and toluenediamine production wastes (K111 and K112, U328 and U353)	3,500 tons--K111, 0 tons--K112, <500 tons of U328 and U353	Nonwastewater	
5. Ethylene dibromide (EDB) production wastes (K117, K118, and K136) and methyl bromide production wastes (K131 and K132)	<100 tons--K118, <100 tons--K132	Nonwastewater	
6. Ethylenebisdithiocarbamic acid (EBDC) production wastes (K123, K124, K125, and K126)	<100 tons--K125	Nonwastewater	
7. Electric arc furnace dust (K061)	67,000 tons of low zinc K061 a	Solid	
8. Debris contaminated with newly listed wastes b	XXX tons	Solid	
9. Previously regulated debris	1,000,000 tons	Solid	

(...Table continues...)

Line No.	Generation type	Assumed management method
1.	Routine	Solvent extraction; incineration; cement kilns.
2.		
3.	Routine	Incineration or fuel substitution.
4.	Routine	Incineration.
5.	Routine	Incineration.
6.	Routine	Incineration.
7.	Routine	High temperature metals recovery.
8.	Routine and intermittent	Destruction; immobilization; extraction.
9.	Routine and intermittent	Destruction; immobilization; extraction.

a Of the set of wastes potentially affected by a new BDAT for wastes with high chromium and high nickel content (including K061, K062, and F006), the Agency is considering K061 only. The quantity given for K061 is based on the generation quantity instead of on the quantity that is land disposed.

b The quantity presented here for newly regulated debris is an estimate pending completion of the Agency's analysis for hazardous debris.

Table IX-2.--Summary of Annual Costs of LDR Phase I Wastes
(In millions of dollars per year)

Waste	Post regulatory costs a	Baseline costs	Incremental costs
Wastes with Positive Incremental Cost:			

Petroleum refining sludges (F037 and F038) b 58 to 66 b 18 40 to 47
Unsymmetrical dimethylhydrazine production wastes (K107-K110) 0 0 0
2-Ethoxyethanol (U359) 0.4 0.1 0.3
Dinitrotoluene and toluenediamine production wastes (K111 and K112, U328 and U353) 7 1 6
Ethylene dibromide (EDB) production wastes (K117, K118, and K136) and methyl bromide production wastes (K131 and K132) 0.3 <0.1 0.3
Ethylenebisdithiocarbamic acid (EBDC) production wastes (K123, K124, K125, and K126) 0.2 0.1 0.2
Debris contaminated with newly listed wastes 15 5 10
Total for newly listed wastes 81 to 89 24 57 to 65
Wastes with Negative Incremental Cost:
Electric arc furnace dust (K061) 19 30 (11)
Previously regulated debris 970 1,600 (560)

a Baseline assumes all waste is landfilled, except for previously regulated debris.

b The range of costs shown represents a unit price for cement kilns of between $700 per ton and $1200 per ton. This range is reflected in the total costs shown for each column as well.

(ii) Wastes from the Production of Unsymmetrical Dimethylhydrazine (K107-K110). The Agency did not calculate costs of treatment standards for wastes from the production of unsymmetrical dimethylhydrazine (UDMH) (K107, K108, K109, and K110). This decision was made based on information that these wastes are no longer generated.

(iii) 2-Ethoxyethanol Wastes (U359). The Agency estimated an incremental annual cost of $700,000 for the standards developed for these wastes. This cost is based on an upper bound assumption of incineration of 500 tons annually.

(iv) Wastes from Production of Dinitrotoluene and Toluenediamine (K111 and K112, U328 and U353). The Agency estimated an incremental annual cost of $6.1 million for the standards developed for these wastes. This figure is based on an annual land disposal estimate of 3,500 tons of K111 nonwastewater, an upper bound assumption of 100 tons of K112 nonwastewater, and an upper bound assumption of 500 tons of U328 and U353 combined.

(v) Wastes from Production of Ethylene Dibromide (EDB) (K117, K118, and K136). The standards for these wastes have an estimated incremental annual cost of $300,000. This figure is based on upper bound assumptions of 100 tons of K118 nonwastewater and 100 tons of K132 nonwastewater requiring incineration.

(vi) Wastes from Production of Ethylenebisdithiocarbamic Acid (EBDC) (K123- K126). The incremental annual cost estimated for these wastes is $150,000.
This figure is based on an upper bound assumption of 100 tons of K125

nonwastewater requiring incineration.

(vii) K061, F006, K062. The only previously regulated wastes revisited in today's rule for which the Agency developed cost estimates are K061 low-zinc wastes. (As discussed above, the standards for F006 and K062 are expected to have no incremental costs associated with them.) The standards for K061 wastes are based on high temperature metals recovery (HTMR). These standards, as applied to K061, could save industry up to approximately $11 million annually (i.e., The standards in today's rule are potentially less costly than the existing standards.). This figure is based on an annual generation estimate of 67,000 tons. The Agency has used a generation estimate rather than a land disposal estimate for this waste because of the high level of uncertainty regarding the quantity of low zinc K061 that is currently treated using HTMR. The effect of using a generation estimate of the K061 volume is that the cost savings presented is likely to be an over-estimate of the true cost savings for these standards.

c. Results for Hazardous Debris. There are two groups of hazardous debris in this rule. The first group includes all previously regulated hazardous debris: Debris contaminated with wastes regulated under the previous HSWA land disposal restriction rules (i.e., Solvents and Dioxins, California List, First Third, Second Third, Third Third rules). The second group of hazardous debris includes debris contaminated with wastes newly regulated under today's rule (e.g., F037).

(i) Previously Regulated Hazardous Debris. As of May 8, 1992, all of the national capacity variances for the debris regulated in the HSWA land disposal restriction scheduled waste rules will expire. (If the Agency proceeds with the planned national case-by-case variance, this date would be extended to May 8, 1993.) All previously regulated hazardous debris would then be required to meet the existing standards for debris established in the scheduled waste rules. Since the Agency is interested in long-term treatment costs, its analysis does not take into account the effect of the national capacity variance on treatment of hazardous debris.

Standards for debris established in today's rule allow considerably more flexibility in debris treatment than did the standards established in the LDR scheduled waste rules. In addition, today's standards provide for the use of many more extraction technologies for treatment then the HSWA standards; extraction technologies often can be cheaper to use than the destruction and immobilization technologies that are required under current regulations.

Furthermore, today's treatment standards allow debris treated by destruction and extraction technologies to be excluded from subtitle C disposal.

Therefore, EPA estimates that today's standards for previously regulated debris will result in a potential regulatory relief to industry. The Agency estimates baseline costs, costs of debris treatment and the prior land disposal restrictions rules after all variances are expired to be $1,600 million per year; under this rule the costs would be reduced by $560 million per year to $970 million. It should be noted that if there is a portion of the previously regulated debris volume which would be generated and managed only during the period of the national capacity variance, to the degree that this portion is reflected in the cost savings presented, these savings would be over-estimated.

One issue should be noted, however, regarding the baseline for previously regulated debris. The standard baseline in cost analysis is formulated as

the scenario of existing management requirements in the absence of a new rule. In today's rule, the volume of previously regulated debris is currently under a capacity variance. In the absence of today's rule, once the variance expires, treatment according to existing standards is required. Therefore, the baseline used in the cost analysis is the existing standards./57/ However, since most hazardous debris is currently under the national capacity variance, treatment of hazardous debris is not generally occurring.

Therefore, the baseline being used does not reflect current debris management practices. Yet, in keeping with standard regulatory analysis procedures, the Agency believes it to be appropriate to analyze costs for the volume of previously regulated debris based on a baseline of compliance with existing standards.

NOTE /57/ It should be noted that due to the limited data available for the cost analysis for the previous LDR rules, the hazardous debris volumes estimated by the Agency were small in comparison to the previously regulated contaminated debris volume estimated for today's rule. EPA believes that it underestimated compliance costs for hazardous debris treatment under the previous LDR rules due to this lack of data.

(ii) Newly Regulated Hazardous Debris. The results of EPA's analysis indicate that the volume of hazardous debris newly regulated by today's rule has a 98 percent likelihood of falling between 18,000 and 119,000 tons per year and the corresponding incremental cost of managing this waste has a 98 percent likelihood of falling between $3.8 million and $120 million per year.

The median annual incremental cost for treating newly regulated debris was $10 million. For purposes of determining whether today's rule is a major rule as defined by Executive Order 12291, EPA has used the median volume and cost results from its analysis.

The volume of debris contaminated with F037 and F038 has a 98 percent likelihood of falling between 13,000 tons per year and 24 million tons per year in the long term future (i.e., more than five years after promulgation of today's rule). The incremental annual cost of treating this debris has a 98 percent likelihood of falling between $1.2 million and $5.8 million. The median incremental cost of treating F037 and F038-contaminated debris in EPA's analysis was $3.1 million. EPA acknowledges that in the short-term future (i.e., in the first five years after promulgation), the compliance costs of treating debris contaminated with F037 and F038 will be much higher.

The volume of debris contaminated with newly regulated organic chemical wastes has a 98 percent likelihood of falling between 3,400 tons and 98,000 tons per year in the long term future. The incremental annual cost of treating this debris has a 98 percent likelihood of falling between $1.4 million and $120 million. The median incremental cost of treating debris contaminated with newly regulated organic waste was $7.1 million.

d. Cost Savings From Storage and Treatment in Containment Buildings. The Agency lacked information with which to infer the typical dimensions of a containment building used to treat contaminated debris; therefore, the same size containment buildings were used for the analysis of treatment containment buildings as were used for the storage containment building

analysis. The calculations indicate that use of containment buildings designed to store the typical waste quantities associated with the three industries considered and to treat contaminated debris could result in significant cost savings. Please see the EIA for complete results from the Agency's analysis.

To arrive at the estimates of cost savings, the Agency calculated the annualized costs of containment buildings. All costs were estimated as the present value of the capital and recurring costs incurred by facilities over an assumed 20-year operating life. The present value costs was then annualized over 20 years to arrive at equal annual payments. Implicit in this approach is the assumption that facilities will be able to smooth out anticipated costs with some form of financing over a 20-year period. Three and seven percent social discount rates, assumed constant for 20 years, were used to calculate the annualized costs.

In addition to estimating the overall incremental cost savings of the containment building provision, the Agency addressed three other issues associated with containment buildings: the costs of retaining corrective action authority of the containment buildings, costs of recordkeeping, and costs of engineered barriers required for liquids and dust.

Under today's rule, corrective action authority will be extended to permitted containment buildings; corrective action authority will not be extended to unpermitted containment buildings (i.e., those buildings under the 90-day generator exemption from permitting). The Agency assumes that only facilities that already have RCRA permits will choose to construct permitted containment buildings and that all containment buildings constructed at facilities without existing RCRA permits will be unpermitted (i.e., they will not be affected by the corrective action provisions in today's rule). Based on these assumptions, the Agency does not believe that today's provision will produce any incremental costs or benefits with regard to corrective action authority.

The Agency believes the recordkeeping requirements of today's provision will have little impact on industries choosing to use containment buildings.
The Agency assumed that annual recordkeeping costs range from $1100 to $33,000/facility, depending on the volume of waste managed.

In addition to quantitative estimates of recordkeeping costs, the Agency qualitatively assessed the benefits of recordkeeping requirements for containment buildings. The Agency believes the costs are justified given the potential benefits that the public may incur.

Recordkeeping establishes adequate inspection plans to ensure that the unit is operating as designated. This goal is achieved through the establishment of an inspection program that ensures the structural integrity of the unit and prompt detection of any leaks or releases. As discussed in section IV.G, the Agency is requiring an inspection schedule for these units whereby, at least once each week, monitoring and leak detection equipment, the containment building, and the area surrounding the containment building is checked to ensure the unit is being properly operated and that no leaks or releases have occurred.
The Agency believes such controls are key to providing simple, yet adequate, maintenance of facilities to prevent detrimental releases of hazardous waste. In addition, monitoring buildings and wastes releases

facilitates the Agency's enforcement actions.

The Agency does not believe that facilities will be significantly affected by these requirements. It is the Agency's understanding that the majority of facilities already have, or could easily, modify their existing operations to add these recordkeeping measures. The Agency notes that large facilities are the most likely to use containment buildings and believes that these facilities will be able to incorporate additional recordkeeping into their present operations with relatively little cost.

The final issue the Agency analyzed with regard to containment buildings was costs associated with engineered barriers and fugitive dust emission controls. The annualized cost (i.e., assuming social discount rate of three percent and cost annualized over 20 years) for secondary containment ranged from $7,000 to $23,000 per year for systems for 50' x 30' containment building and 340' x 200' buildings, respectively. Fugitive dust control ranged from approximately $3,000 for a 50' x 30' building to $30,000 per year for a 340' x 200' structure. (The building dimensions are representative of possible containment structures for all of the three industries.)

Given the results of the analysis presented in this section, the Agency believes that the containment building provision will provide regulatory relief to large facilities, while having little to no impact on small facilities. The Agency believes that facilities in the mineral processing and recycling industries are particularly likely to benefit from this provision.

3. Economic Impacts

A full economic impacts analysis was not performed because of a lack of data in many areas. The Agency, however, qualitatively assessed the economic impacts attributable to today's rule.

a. Petroleum Refining Wastes (F037 and F038). The Listing RIA considered the economic impact of the F037 and F038 listing in light of anticipated land disposal restrictions on these wastes. The impacts estimated in the Listing RIA were driven by facility costs and the economic viability of facility owners. The results of the Listing RIA's economic impacts analysis are summarized below.

In the Listing RIA, two to five percent of the refineries (depending on the cost scenario) had cost impacts greater than one percent of sales. (Cost impacts exceeding one percent of sales can be viewed as an indicator of potentially significant economic impact.) Slightly under two percent of the refineries had cost impacts that exceeded two percent of sales under the high-cost scenario, indicating more severe economic impacts. Nine out of ten affected refineries in the high-cost scenario had costs below 0.5 percent of sales, and over three-quarters of the refineries fell below 0.25 percent, indicating no significant impacts.

The analysis of small entities presented in the Listing RIA indicated that there were potentially seven non-integrated refineries (i.e., refineries that did not produce their own crude and market their own products) with cost-to- sales ratios greater than one percent under the high-cost scenario. A further analysis of employment effects and potential closures was not possible because of insufficient financial data for individual refineries.

EPA compared the incremental compliance cost for the F037 and F038 standards in today's rule with that of the Listing Rule. The Agency found that today's rule will have an incremental compliance cost for F037 and F038 waste, including both nonwastewater and hazardous debris, of between $49 million and $58 million, while the Listing RIA estimated an incremental annual compliance cost of $53 million to $102 million. Based on its qualitative analysis, EPA believes that the economic impacts of today's rule will be less than the impacts estimated by the Listing RIA.

b. Remaining Wastes. Considering the economic impacts of LDRs for the newly listed organic wastes other than F037 and F038, the Agency estimated the costs associated with all wastes to be insignificant, with the possible exception of dinitrotoluene and toluenediamine production wastes. The Agency, however, did not have the data to examine these economic impacts.

A quantitative assessment of the economic impacts associated with the hazardous debris standards was not possible because of data limitations. The Agency does not have comprehensive site-specific information on the volumes of previously regulated or newly listed hazardous debris.

The Agency expects that the impacts for previously regulated debris will not be significant since the revised standards are likely to be no more costly, and in some cases less costly, than the standards which currently exist. The impacts of the rule on newly regulated hazardous debris are uncertain. The estimated incremental cost for these standards is expected to range between $3.8 million and $120 million annually. If a relatively large number of facilities bear the burden of this cost, it is likely that these standards will not have a significant impact.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 et seq., whenever an agency publishes a notice of rulemaking, it must prepare and make available for public comment a Regulatory Flexibility Analysis (RFA) that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). This analysis is unnecessary, however, if the rule is estimated not to have a significant economic effect on a substantial number of small entities.

According to EPA's guidelines for conducting an RFA, if over 20 percent of the population of small entities is likely to experience financial distress based on the costs of the rule, then the Agency considers that the rule will have a significant impact on a substantial number of small entities, and must perform an RFA. The Agency has virtually no data on small entities affected by today's rule. Because of the low incremental costs incurred for the newly listed waste standards, the Agency believes that the only area of potential importance is the hazardous debris treatment standards. The previously regulated debris standards, being potentially a regulatory relief, are, for this analysis, considered to not have an effect on small entities. For the debris contaminated with newly listed wastes, the impacts to small facilities are uncertain, although may be significant. Therefore, although insufficient data was available to make a determination, the Agency estimates that there are not significant impacts on over 20 percent of the population of small entities based on the costs of the rule, so the Agency has not conducted an RFA for today's rule.

C. Paperwork Reduction Act

The information collection requirements for newly listed wastes were promulgated in previous land disposal restriction rulemakings and approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 et seq. and have been assigned OMB control number 2050- 0085. A copy of the Information Collection Request (ICR) document (ICR
1442.03) may be obtained from Sandy Farmer, Information Policy Branch, EPA, 401 M Street SW. (PM-223Y), Washington, DC 20460 or by calling (202) 260-2740.
The new information collection requirements and revisions to existing requirements in this rule will be submitted for approval to OMB under the PRA. These requirements are not effective until OMB approves them and a technical amendment to that effect is published in the Federal Register.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223Y, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Jonathan Gledhill."

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 260
Administrative practice and procedure, Confidential business information, Hazardous waste.

40 CFR Part 261

Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 262

Exports, Hazardous materials transportation, Hazardous waste, Imports, Labeling, Packaging and containers, Reporting and recordkeeping requirements.

40 CFR Part 264

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds.

40 CFR Part 265

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds, Water supply.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 270

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Reporting and recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indians--land, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: June 30, 1992.

William K. Reilly,
Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 148--HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Section 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 et. seq.

2. Section 148.17 is added to subpart B of part 148 to read as follows:

Sec. 148.17 Waste specific prohibitions; newly listed wastes.

(a) Effective November 9, 1992, the wastes specified in 40 CFR part 261 as EPA hazardous waste numbers F037, F038, K107, K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126, K131, K136, U328, U353, and U359 are prohibited from underground injection.

(b) Effective June 30, 1995, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers K117, K118, K131, and K132 are prohibited from underground injection.

(c) The requirements of paragraphs (a) and (b) of this section do not apply:
(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of part 268; or
(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or
(3) During the period of extension of the applicable effective date, if an extension has been granted under Sec. 148.4 of this part.

PART 260--HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

3. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

4. In Sec. 260.10, a definition for "containment building" is added in alphabetical order and the definitions of "miscellaneous unit" and "pile" are revised to read as follows:

Sec. 260.10 Definitions.

* * * * *

Containment building means a hazardous waste management unit that is used to store or treat hazardous waste under the provisions of subpart DD of parts 264 or 265 of this chapter.

* * * * *

Miscellaneous unit means a hazardous waste management unit where hazardous waste is treated, stored, or disposed of and that is not a container, tank, surface impoundment, pile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground injection well with appropriate technical standards under 40 CFR part 146, containment building, or unit eligible for a research, development, and demonstration permit under Sec. 270.65 of this chapter.

* * * * *

Pile means any non-containerized accumulation of solid, nonflowing hazardous waste that is used for treatment or storage and that is not a containment building.

* * * * *

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

5. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

6. In Sec. 261.3 paragraphs (a)(2)(iii) and (c)(2)(ii)(C) are revised and paragraph (f) is added to read as follows:

Sec. 261.3 Definition of hazardous waste.

(a) * * *
(2) * * *
(iii) It is a mixture of a solid waste and a hazardous waste that is listed in subpart D of this part solely because it exhibits one or more of the characteristics of hazardous waste identified in subpart C of this part, unless the resultant mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part, or unless the solid waste is excluded from regulation under Sec. 261.4(b)(7) and the resultant mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part for which the hazardous waste listed in subpart D of this part was listed. (However, nonwastewater mixtures are still subject to the requirements of part 268 of this chapter, even if they no longer exhibit a characteristic at the point of land disposal).

* * * * *

(c) * * *
(2) * * *
(ii) * * *
(C)(1) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062 or F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in paragraphs (6), (7), and (13) of the definition for "Industrial furnace" in 40 CFR 260.10), that are disposed in subtitle D units, provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

Constituent	Maximum for any single composite sample--TCLP (mg/l)
Generic exclusion levels for K061 and K062 nonwastewater HTMR residues	
Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30

Thallium	0.020
Zinc	70

Generic exclusion levels for F006 nonwastewater HTMR residues

Antimony	0.10
Arsenic	0.50
Barium	7.6
Beryllium	0.010
Cadmium	0.050
Chromium (total)	0.33
Cyanide (total) (mg/kg)	1.8
Lead	0.15
Mercury	0.009
Nickel	1.0
Selenium	0.16
Silver	0.30
Thallium	0.020
Zinc	70

(2) A one-time notification and certification must be placed in the facility's files and sent to the EPA region or authorized state for K061, K062 or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to subtitle D units. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the subtitle D unit receiving the waste changes.

However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the subtitle D unit receiving the waste shipments; the EPA Hazardous Waste Number(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

* * * * *

(f) Notwithstanding paragraphs (a) through (d) of this section and provided the debris as defined in part 268 of this chapter does not exhibit a characteristic identified at subpart C of this part, the following materials are not subject to regulation under 40 CFR parts 260, 261 to 266, 268, or 270:

(1) Hazardous debris as defined in part 268 of this chapter that has been treated using one of the required extraction or destruction technologies specified in Table 1 of Sec. 268.45 of this chapter; persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements; or

(2) Debris as defined in part 268 of this chapter that the Regional Administrator, considering the extent of contamination, has determined is

no longer contaminated with hazardous waste.

PART 262--STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

8. The authority citation for part 262 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912, 6922, 6923, 6924, 6925, and 6937.

9. In Sec. 262.34, paragraph (a)(1)(iii) introductory text is amended by removing the semicolon at the end and replacing it with a colon, paragraph (a)(1)(iii)(B) and the concluding text of paragraph (a)(1) are revised, and paragraph (a)(1)(iv) is added to read as follows:

Sec. 262.34 Accumulation time.

(a) * * *
(1) * * *
(iii) * * *
(B) Documentation of each waste removal, including the quantity of waste removed from the drip pad and the sump or collection system and the date and time of removal; and/or
(iv) The waste is placed in containment buildings and the generator complies with subpart DD of 40 CFR part 265, has placed its professional engineer certification that the building complies with the design standards specified in 40 CFR 265.1101 in the facility's operating record no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit. The owner or operator shall maintain the following records at the facility:
(A) A written description of procedures to ensure that each waste volume remains in the unit for no more than 90 days, a written description of the waste generation and management practices for the facility showing that they are consistent with respecting the 90 day limit, and documentation that the procedures are complied with; or
(B) Documentation that the unit is emptied at least once every 90 days.

In addition, such a generator is exempt from all the requirements in subparts G and H of 40 CFR part 265, except for Secs. 265.111 and 265.114.

* * * * *

10. In Sec. 262.34(a), the first paragraph designated (a)(2) and the undesignated paragraph following (a)(2)(ii) are removed.

PART 264--STANDARDS FOR OWNER AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

11. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

12. Section 264.110 is amended by removing the word "and" from the end of

paragraph (b)(1), by adding a semicolon in place of the period at the end of paragraph (b)(2), by adding "; and" in place of the period at the end of paragraph (b)(3), and by adding a new paragraph (b)(4) to read as follows:

Sec. 264.110 Applicability.

* * * * *

(b) * * *
(4) Containment buildings that are required under Sec. 264.1102 to meet the requirement for landfills.

13. Section 264.111 is amended by revising paragraph (c) to read as follows:

Sec. 264.111 Closure performance standard.
* * * * *

(c) Complies with the closure requirements of this subpart, including, but not limited to, the requirements of Secs. 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.601 through 264.603, and 264.1102.

14. Section 264.112 is amended by revising paragraph (a)(2) to read as follows:

Sec. 264.112 Closure plan; amendment of plan.

(a) * * *
(2) The Director's approval of the plan must ensure that the approved closure plan is consistent with Secs. 264.111 through 264.115 and the applicable requirements of subpart F of this part, Secs. 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.601, and 264.1102. Until final closure is completed and certified in accordance with Sec. 264.115, a copy of the approved plan and all approved revisions must be furnished to the Director upon request, including requests by mail.

* * * * *

15. Section 264.140 is amended by adding a semicolon in place of ", and" at the end of paragraph (b)(1), by adding a semicolon in place of the period at the end of paragraph (b)(2), by adding "; and" in place of the period at the end of paragraph (b)(3), and by adding a new paragraph (b)(4) to read as follows:

Sec. 264.140 Applicability.

* * * * *

(b) * * *
(4) Containment buildings that are required under Sec. 264.1102 to meet the requirements for landfills.

* * * * *

16. Section 264.142 is amended by revising the introductory text of paragraph (a) to read as follows:

Sec. 264.142 Cost estimate for closure.

(a) The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in Secs. 264.111 through 264.115 and applicable closure requirements in Secs. 264.178, 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.601 through 264.603, and 264.1102.

* * * * *

17. Subpart DD is added to part 264 to read as follows:

Subpart DD--Containment Buildings

Sec.
264.1100 Applicability.
264.1101 Design and operating standards.
264.1102 Closure and post-closure care.
264.1103-264.1110 (Reserved)

Subpart DD--Containment Buildings

Sec. 264.1100 Applicability.

The requirements of this subpart apply to owners or operators who store or treat hazardous waste in units designed and operated under Sec. 264.1101 of this subpart. These provisions will become effective on February 18, 1993, although owner or operator may notify the Regional Administrator of his intent to be bound by this subpart at an earlier time. The owner or operator is not subject to the definition of land disposal in RCRA section 3004(k) provided that the unit:

(a) Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

(b) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel, wastes, and handling equipment within the unit;

(c) If the unit is used to manage liquids, has:

(1) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

(2) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

(3) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest practicable time, unless the unit has been granted a variance from the secondary containment system requirements under Sec. 264.1101(b)(4);

(d) Has controls sufficient to prevent fugitive dust emissions to meet the

no visible emission standard in Sec. 264.1101(c)(1)(iv); and
(e) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

Sec. 264.1101 Design and operating standards.

(a) All containment buildings must comply with the following design standards:
(1) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.

(2) The floor and containment walls of the unit, including the secondary containment system if required under paragraph (b) of this section, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. EPA will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this paragraph. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:
(i) They provide an effective barrier against fugitive dust emissions under paragraph (c)(1)(iv); and
(ii) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(3) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

(4) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

(b) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:
(1) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g., a geomembrane covered by a concrete wear surface).
(2) A liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building:
(i) The primary barrier must be sloped to drain liquids to the associated

collection system; and

(ii) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time.

(3) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

(i) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:

(A) Constructed with a bottom slope of 1 percent or more; and

(B) Constructed of a granular drainage material with a hydraulic conductivity of 1x10-2 cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a transmissivity of 3x10-5 m/2//sec or more.

(ii) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

(iii) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of Sec. 264.193(d)(1).

In addition, the containment building must meet the requirements of Sec. 264.193(b) and Secs. 264.193(c) (1) and (2) to be considered an acceptable secondary containment system for a tank.)

(4) For existing units other than 90-day generator units, the Regional Administrator may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of this subpart. In making this demonstration, the owner or operator must:

(i) Provide written notice to the Regional Administrator of their request by November 16, 1992. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

(ii) Respond to any comments from the Regional Administrator on these plans within 30 days; and

(iii) Fulfill the terms of the revised plans, if such plans are approved by the Regional Administrator.

(c) Owners or operators of all containment buildings must:

(1) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(i) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

(ii) Maintain the level of the stored/treated hazardous waste within the

containment walls of the unit so that the height of any containment wall is not exceeded;

(iii) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

(iv) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions (see 40 CFR part 60, appendix A, Method 22--Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares). In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices (see 40 CFR part 60 subpart 292 for guidance).

This state of no visible emissions must be maintained effectively at all times during routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit.

(2) Obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of paragraphs (a) through (c) of this section. For units placed into operation prior to February 18, 1993, this certification must be placed in the facility's operating record (on-site files for generators who are not formally required to have operating records) no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit.

(3) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, must repair the condition promptly, in accordance with the following procedures.

(i) Upon detection of a condition that has lead to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:

(A) Enter a record of the discovery in the facility operating record;

(B) Immediately remove the portion of the containment building affected by the condition from service;

(C) Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

(D) Within 7 days after the discovery of the condition, notify the Regional Administrator of the condition, and within 14 working days, provide a written notice to the Regional Administrator with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(ii) The Regional Administrator will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(iii) Upon completing all repairs and cleanup the owner or operator must notify the Regional Administrator in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with paragraph (c)(3)(i)(D) of this section.

(4) Inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

(d) For containment buildings that contain areas both with and without secondary containment, the owner or operator must:
(1) Design and operate each area in accordance with the requirements enumerated in paragraphs (a) through (c) of this section;
(2) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and
(3) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

(e) Notwithstanding any other provision of this subpart the Regional Administrator may waive requirements for secondary containment for a permitted containment building where the owner operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

Sec. 264.1102 Closure and post-closure care.

(a) At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.,) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Sec. 261.3(d) of this chapter applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in subparts G and H of this part.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (Sec. 264.310). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in subparts G and H of this part.

Sec. 264.1103-264.1110 (Reserved)

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

18. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, 6935, and 6936.

19. Section 265.110 is amended by removing the word "and" from the end of paragraphs (b)(1) and (b)(2), by adding "; and" in place of the period at the end of paragraph (b)(3), and by adding a new paragraph (b)(4) to read as follows:

Sec. 265.110 Applicability.

* * * * *

(b) * * *
(4) Containment building that are required under Sec. 265.1102 to meet the requirement for landfills.

20. Section 265.111 is amended by revising paragraph (c) to read as follows:

Sec. 265.111 Closure performance standard.
* * * * *

(c) Complies with the closure requirements of this subpart, including, but not limited to, the requirements of Secs. 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381, 265.404, and 264.1102.

21. In Sec. 265.112 (d)(4), the last two sentences are revised to read as follows:

Sec. 265.112 Closure plan; amendment of plan.

* * * * *

(d) * * *
(4) * * * The Regional Administrator must assure that the approved plan is consistent with Secs. with 265.111 through 265.115 and the applicable requirements of subpart F of this part, Secs. 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381, 265.404, and 264.1102. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

* * * * *

22. Section 265.140 is amended by revising paragraph (b) to read as follows:

Sec. 265.140 Applicability.

(b) The requirements of Secs. 265.144 and 265.146 apply only to owners and operators of:
(1) Disposal facilities;
(2) Tank systems that are required under Sec. 264.197 of this chapter to meet the requirements for landfills; and
(3) Containment buildings that are required under Sec. 265.1102 to meet the requirements for landfills.

* * * * *

23. Section 265.142 is amended by revising the introductory text of paragraph (a) to read as follows:

Sec. 265.142 Cost estimate for closure.

(a) The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in Secs. 265.111 through 265.115 and applicable closure requirements in Secs. 265.178, 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381, 265.404, and 265.1102

* * * * *

24. In Sec. 265.221, a new paragraph (h) is added to read as follows:

Sec. 265.221 Design and operating requirements.

* * * * *

(h) Surface impoundments that are newly subject to RCRA section 3005(j)(1) due to the promulgation of additional listings or characteristics for the identification of hazardous waste must be in compliance with paragraphs (a), (c) and (d) of this section not later than 48 months after the promulgation of the additional listing or characteristic. This compliance period shall not be cut short as the result of the promulgation of land disposal prohibitions under part 268 of this chapter or the granting of an extension to the effective date of a prohibition pursuant to Sec. 268.5 of this chapter, within this 48-month period.

25. Subpart CC is added and reserved and subpart DD is added to part 265 to read as follows:

Subpart DD--Containment Buildings

Sec.
265.1100 Applicability.
265.1101 Design and operating standards.
265.1102 Closure and post-closure care.
265.1103 -265.1110 (Reserved)

Subpart DD--Containment Buildings

Sec. 265.1100 Applicability.

The requirements of this subpart apply to owners or operators who store or treat hazardous waste in units designed and operated under Sec. 265.1101 of this subpart. These provisions will become effective on February 18, 1993, although the owner or operator may notify the Regional Administrator of his intent to be bound by this subpart at an earlier time. The owner or operator is not subject to the definition of land disposal in RCRA section 3004(k) provided that the unit:

(a) Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy

equipment that operate within the units, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

(b) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel and handling equipment within the unit;

(c) If the unit is used to manage liquids, has:

(1) A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

(2) A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

(3) A secondary containment system designed and constructed of materials to prevent migration of hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest possible time, unless the unit has been granted a variance from the secondary containment system requirements under Sec. 265.1101(b)(4);

(d) Has controls as needed to permit fugitive dust emissions; and

(e) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

Sec. 265.1101 Design and operating standards.

(a) All containment buildings must comply with the following design standards:

(1) The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.

(2) The floor and containment walls of the unit, including the secondary containment system if required under paragraph (b) of this section, must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit, and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. EPA will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of this paragraph. If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that meet these criteria:

(i) They provide an effective barrier against fugitive dust emissions under paragraph (c)(1)(iv); and

(ii) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

(3) Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

(4) A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics of the waste to be managed.

(b) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:
(1) A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g. a geomembrane covered by a concrete wear surface).

(2) A liquid collection and removal system to prevent the accumulation of liquid on the primary barrier of the containment building:
(i) The primary barrier must be sloped to drain liquids to the associated collection system; and
(ii) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time that protects human health and the environment.
(3) A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

(i) The requirements of the leak detection component of the secondary containment system are satisfied by installation of a system that is, at a minimum:
(A) Constructed with a bottom slope of 1 percent or more; and
(B) Constructed of a granular drainage material with a hydraulic conductivity of 1 x 10-/2/ cm/sec or more and a thickness of 12 inches (30.5 cm) or more, or constructed of synthetic or geonet drainage materials with a trasmissivity of 3 x 10-/5/ m /2//sec or more.

(ii) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

(iii) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings can serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of Sec. 265.193(d)(1).
In addition, the containment building must meet the requirements of Sec.
265.193 (b) and (c) to be considered an acceptable secondary containment system for a tank.)
(4) For existing units other than 90-day generator units, the Regional

Administrator may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of this Subpart. In making this demonstration, the owner or operator must:

(i) Provide written notice to the Regional Administrator of their request by February 18, 1993. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

(ii) Respond to any comments from the Regional Administrator on these plans within 30 days; and

(iii) Fulfill the terms of the revised plans, if such plans are approved by the Regional Administrator.

(c) Owners or operators of all containment buildings must:

(1) Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(i) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

(ii) Maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;

(iii) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

(iv) Take measures to control fugitive dust emissions such that any openings (doors, windows, vents, cracks, etc.) exhibit no visible emissions.

In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during normal operating conditions, including when vehicles and personnel are entering and exiting the unit.

(2) Obtain certification by a qualified registered professional engineer that the containment building design meets the requirements of paragraphs (a) through (c) of this section. For units placed into operation prior to February 18, 1993, this certification must be placed in the facility's operating record (on-site files for generators who are not formally required to have operating records) no later than 60 days after the date of initial operation of the unit. After February 18, 1993, PE certification will be required prior to operation of the unit.

(3) Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, must repair the condition promptly, in accordance with the following procedures.

(i) Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:

(A) Enter a record of the discovery in the facility operating record;

(B) Immediately remove the portion of the containment building affected by the condition from service;

(C) Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and
(D) Within 7 days after the discovery of the condition, notify the Regional Administrator of the condition, and within 14 working days, provide a written notice to the Regional Administrator with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(ii) The Regional Administrator will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(iii) Upon completing all repairs and cleanup the owner or operator must notify the Regional Administrator in writing and provide a verification, signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with paragraph (c)(3)(i)(D) of this section.

(4) Inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

(d) For containment building that contains both areas with and without secondary containment, the owner or operator must:
(1) Design and operate each area in accordance with the requirements enumerated in paragraphs (a) through (c) of this section;
(2) Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and
(3) Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

(e) Notwithstanding any other provision of this subpart, the Regional Administrator may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

Sec. 265.1102 Closure and post-closure care.

(a) At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Sec. 261.3(d) of this chapter applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in subparts G and H of this part.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in paragraph (a) of this section, the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills (Sec. 265.310). In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in subparts G and H of this part.

Secs. 265.1103--265.1110 (Reserved)

PART 268--LAND DISPOSAL RESTRICTIONS

26. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

27. In Sec. 268.2 paragraph (g) is revised and paragraph (h) added to read as follows:

Sec. 268.2 Definitions applicable in this part.

* * * * *

(g) Debris means solid material exceeding a 60 mm particle size that is intended for disposal and that is: A manufactured object; or plant or animal matter; or natural geologic material. However, the following materials are not debris: Any material for which a specific treatment standard is provided in subpart D, part 268; Process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and Intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume. A mixture of debris that has not been treated to the standards provided by Sec. 268.45 and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.

(h) Hazardous debris means debris that contains a hazardous waste listed in subpart D of part 261 of this chapter, or that exhibits a characteristic of hazardous waste identified in subpart C of part 261 of this chapter.

28. Section 268.5 is amended by adding "; or" in place of the semicolon at the end of paragraph (h)(2)(ii), by redesignating paragraph (h)(2)(v) as paragraph (h)(2)(vi), by revising paragraph (h)(2)(iv) and by adding new paragraph (h)(2)(v) to read as follows:

Sec. 268.5 Procedures for case-by-case extensions to an effective date.

* * * * *

(h) * * *

(2) * * *
(iv) The surface impoundment, if permitted, is in compliance with the requirements of subpart F of part 264 and Sec. 264.221 (c), (d) and (e) of this chapter; or
(v) The surface impoundment, if newly subject to RCRA section 3005(j)(1) due to the promulgation of additional listings or characteristics for the identification of hazardous waste, is in compliance with the requirements of subpart F of part 265 of this chapter within 12 months after the promulgation of additional listings or characteristics of hazardous waste, and with the requirements of Sec. 265.221 (a), (c) and (d) of this chapter within 48 months after the promulgation of additional listings or characteristics of hazardous waste. If a national capacity variance is granted, during the period the variance is in effect, the surface impoundment, if newly subject to RCRA section 3005(j)(1) due to the promulgation of additional listings or characteristics of hazardous waste, is in compliance with the requirements of subpart F of part 265 of this chapter within 12 months after the promulgation of additional listings or characteristics of hazardous waste, and with the requirements of Sec. 265.221 (a), (c) and (d) of this chapter within 48 months after the promulgation of additional listings or characteristics of hazardous waste; or
* * * * *

29. Section 268.7 is amended by revising paragraphs (a)(1)(iii), (a)(1)(iv), (a)(2) introductory text, (a)(3)(iv), (a)(3)(v), (a)(4) introductory text, (b)(4) introductory text, and (b)(5) introductory text, and by adding paragraphs (a)(1)(v), (a)(3)(vi), and (d) to read as follows:

Sec. 268.7 Waste analysis and recordkeeping.

(a) * * *
(1) * * *
(iii) The manifest number associated with the shipment of waste;
(iv) For hazardous debris, the contaminants subject to treatment as provided by Sec. 268.45(b) and the following statement: "This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45"; and
(v) Waste analysis data, where available.

(2) If a generator determines that he is managing a restricted waste under this Part, and determines that the waste can be land disposed without further treatment, with each shipment of waste he must submit, to the treatment, storage, or land disposal facility, a notice and a certification stating that the waste meets the applicable treatment standards set forth in subpart D of this part and the applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d). Generators of hazardous debris that is excluded from the definition of hazardous waste under Sec. 261.3(e)(2) of this chapter (i.e., debris that the Director has determined does not contain hazardous waste), however, are not subject to these notification and certification requirements.

* * * * *

(3) * * *
(iv) Waste analysis data, where available;
(v) For hazardous debris, the contaminants subject to treatment as

provided by Sec. 268.45(b) and the following statement: "This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45"; and

(vi) The date the waste is subject to the prohibitions.

(4) If a generator is managing prohibited waste in tanks, containers, or containment buildings regulated under 40 CFR 262.34, and is treating such waste in such tanks, containers, or containment buildings to meet applicable treatment standards under subpart D of this part, the generator must develop and follow a written waste analysis plan which describes the procedures the generator will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1, Sec. 268.45, however, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

* * * * *

(b) * * *

(4) A notice must be sent with each waste shipment to the land disposal facility which includes the following information, except that debris excluded from the definition of hazardous waste under Sec. 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, Sec. 268.45, and debris that the Director has determined does not contain hazardous waste) is subject to the notification and certification requirements of paragraph (d) of this section rather than these notification requirements:

* * * * *

(5) The treatment facility must submit a certification with each shipment of waste or treatment residue of a restricted waste to the land disposal facility stating that the waste or treatment residue has been treated in compliance with the applicable performance standards specified in subpart D of this part and the applicable prohibitions set forth in Sec. 268.32 or RCRA section 3004(d). Debris excluded from the definition of hazardous waste under Sec. 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, Sec. 268.45, and debris that the Director has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of paragraph (d) of this section rather than the certification requirements of this paragraph (b)(5).

* * * * *

(d) Generators or treaters who first claim that hazardous debris is excluded from the definition of hazardous waste under Sec. 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, Sec. 268.45, and debris that the Director has determined does not contain hazardous waste) are subject to the following notification and certification requirements:

(1) A one-time notification must be submitted to the Director or authorized State including the following information:

(i) The name and address of the Subtitle D facility receiving the treated debris;

(ii) A description of the hazardous debris as initially generated, including the applicable EPA Hazardous Waste Number(s); and

(iii) For debris excluded under Sec. 261.3(e)(1) of this chapter, the technology from Table 1, Sec. 268.45, used to treat the debris.

(2) The notification must be updated if the debris is shipped to a different facility, and, for debris excluded under Sec. 261.2(e)(1) of this chapter, if a different type of debris is treated or if a different technology is used to treat the debris.

(3) For debris excluded under Sec. 261.3(e)(1) of this chapter, the owner or operator of the treatment facility must document and certify compliance with the treatment standards of Table 1, Sec. 268.45, as follows:
(i) Records must be kept of all inspections, evaluations, and analyses of treated debris that are made to determine compliance with the treatment standards;
(ii) Records must be kept of any data or information the treater obtains during treatment of the debris that identifies key operating parameters of the treatment unit; and
(iii) For each shipment of treated debris, a certification of compliance with the treatment standards must be signed by an authorized representative and placed in the facility's files. The certification must state the following: "I certify under penalty of law that the debris has been treated in accordance with the requirements of 40 CFR 268.45. I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment."
* * * * *

30. In Sec. 268.9, paragraph (d) is revised to read as follows:

Sec. 268.9 Special rules regarding wastes that exhibit a characteristic.

* * * * *

(d) Wastes that exhibit a characteristic are also subject to Sec. 268.7 requirements, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generators or treaters files and sent to the EPA region or authorized state. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the subtitle D facility receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later that December 31.

(1) The notification must include the following information:
(i) Name and address of the Subtitle D facility receiving the waste shipment;
(ii) A description of the waste as initially generated, including the applicable EPA Hazardous Waste Number(s) and treatability group(s);
(iii) The treatment standards applicable to the waste at the point of generation.

(2) The certification must be signed by an authorized representative and must state the language found in Sec. 268.7(b)(5).

31. Section 268.14 is added to subpart B of part 268 to read as follows:

Sec. 268.14 Surface impoundment exemptions.

(a) This section defines additional circumstances under which an otherwise prohibited waste may continue to be placed in a surface impoundment.

(b) Wastes which are newly identified or listed under section 3001 after November 8, 1984, and stored in a surface impoundment that is newly subject to subtitle C of RCRA as a result of the additional identification or listing, may continue to be stored in the surface impoundment for 48 months after the promulgation of the additional listing or characteristic, not withstanding that the waste is otherwise prohibited from land disposal, provided that the surface impoundment is in compliance with the requirements of subpart F of part 265 of this chapter within 12 months after promulgation of the new listing or characteristic.

(c) Wastes which are newly identified or listed under section 3001 after November 8, 1984, and treated in a surface impoundment that is newly subject to subtitle C of RCRA as a result of the additional identification or listing, may continue to be treated in that surface impoundment, not withstanding that the waste is otherwise prohibited from land disposal, provided that surface impoundment is in compliance with the requirements of subpart F of part 265 of this chapter within 12 months after the promulgation of the new listing or characteristic. In addition, if the surface impoundment continues to treat hazardous waste after 48 months from promulgation of the additional listing or characteristic, it must then be in compliance with Sec.
268.4.

32. Section 268.36 is added to subpart C of part 268 to read as follows:

Sec. 268.36 Waste specific prohibitions--newly listed wastes.

(a) Effective November 9, 1992, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K107, K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126, K131, K132, and K136; and the wastes specified in 40 CFR 261.33(f) as EPA Hazardous Waste numbers U328, U353, and U359 are prohibited from land disposal.

(b) Effective June 30, 1993, the wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Numbers F037 and F038 that are not generated from surface impoundment cleanouts or closures are prohibited from land disposal.

(c) Effective June 30, 1994, the wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Numbers F037 and F038 that are generated from surface impoundment cleanouts or closures are prohibited from land disposal.

(d) Effective June 30, 1994, radioactive wastes that are mixed with hazardous wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Numbers F037 and F038; the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K107, K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126 K131, K132, and K136; or the wastes specified in 40 CFR 261.33(f) as EPA Hazardous Waste Numbers U328, U353, and U359 are prohibited from land disposal.

(e) Effective June 30, 1994, debris contaminated with hazardous wastes specified in 40 CFR 261.31 as EPA Hazardous Waste Numbers F037 and F038; the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K107,

K108, K109, K110, K111, K112, K117, K118, K123, K124, K125, K126 K131, K132, and K136; or the wastes specified in 40 CFR 261.33(f) as EPA Hazardous Waste Numbers U328, U353, and U359; and which is not contaminated with any other waste already subject to a prohibition are prohibited from land disposal.

(f) Between June 30, 1992 and June 30, 1993, the wastes included in paragraph (b) of this section may be disposed of in a landfill, only if such unit is in compliance with the requirements specified in Sec. 268.5(h)(2), and may be generated in and disposed of in a surface impoundment only if such unit is in compliance with either Sec. 268.5(h)(2) or Sec. 268.14.

(g) Between June 30, 1992 and June 30, 1994, the wastes included in paragraphs (d) and (e) of this section may be disposed of in a landfill only if such unit is in compliance with the requirements specified in Sec. 268.5(h)(2), and may be generated in and disposed of in a surface impoundment only if such unit is in compliance with either Sec. 268.5(h)(2) or Sec. 268.14.

(h) The requirements of paragraphs (a), (b), (c), (d), and (e) of this section do not apply if:
(1) The wastes meet the applicable standards specified in subpart D of this part;
(2) Persons have been granted an exemption from a prohibition pursuant to a petition under Sec. 268.6, with respect to those wastes and units covered by the petition;
(3) The wastes meet the applicable alternate standards established pursuant to a petition granted under Sec. 268.44;
(4) Persons have been granted an extension to the effective date of a prohibition pursuant to Sec. 268.5, with respect to the wastes covered by the extension.

(i) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in Secs. 268.41 and 268.43, the initial generator must test a representative sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable levels in subpart D of this part, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.

33. In Sec. 268.40, paragraph (b) is revised and paragraph (d) is added to read as follows:

Sec. 268.40 Applicability of treatment standards.

* * * * *

(b) A restricted waste for which a treatment technology is specified under Sec. 268.42(a) or hazardous debris for which a treatment technology is specified under Sec. 268.45 may be land disposed after it is treated using that specified technology or an equivalent treatment method approved by the Administrator under the procedures set forth in Sec. 268.42(b).

* * * * *

(d) If a treatment standard has been established in Secs. 268.41 through 268.43 for a hazardous waste that is itself hazardous debris, the waste is subject to those standards rather than the standards for hazardous debris under Sec. 268.45.

34. In Sec. 268.41, paragraph (a) text preceding table is revised, and Table CCWE is amended by revising the entry for "F001-F005 spent solvents," by removing the entries for "K061 (Low Zinc Subcategory--less than 15% Total Zinc)" and "K061 (High Zinc Subcategory--greater than 15% Total Zinc)-- Effective until August 7, 1991, by adding entries for "F037", "F038", and "K061", and by adding paragraph (c) to read as follows:

Sec. 268.41 Treatment standards expressed as concentrations in waste extract.

(a) Table CCWE identifies the restricted wastes and the concentrations of their associated constituents which may not be exceeded in the extract of a waste or waste treatment residual extracted using the test method in appendix I of this part for the allowable land disposal of such wastes. Compliance with these concentrations is required based upon grab samples.

268.41 Table CCWE.--Constituent Concentrations in Waste Extract

Line No.	Waste code	Commercial chemical name	See also	Regulated hazardous constituent	Wastewaters	Nonwastewaters
		* * * * * * *				
1.	F001-F005 spent solvents	NA	Table CCW in 268.43	Carbon disulfide		
2.		Cyclohexanone				
3.				Methanol		
		* * * * * * *				
4.	F037	NA	Table CCW in 268.43	Chromium (Total)		
5.				Nickel		
6.	F038	NA	Table CCW in 268.43	Chromium (Total)		
7.				Nickel		
		* * * * * * *				
8.	K061	NA	Table CCW in 268.43	Antimony		
9.				Arsenic		
10.				Barium		
11.				Beryllium		
12.				Cadmium		
13.		Chromium (Total)				
14.				Lead		
15.				Mercury		
16.				Nickel		
17.				Selenium		
18.				Silver		
19.				Thallium		
20.				Zinc		
		* * * * * * *				

(...Table continues...)

Line No.	CAS No. for regulated hazardous constituent	Concentration (mg/l)	Notes	Concentration (mg/l)	Notes
		* * * * * * *			
1.	75-15-0	NA		4.8	
2.	108-94-1	NA		0.75	
3.	67-56-1	NA		0.75	
		* * * * * * *			
4.	7440-47-32	NA		1.7	
5.	7440-02-0	NA		0.20	
6.	7440-47-32	NA		1.7	
7.	7440-02-0	NA		0.20	
		* * * * * * *			
8.	7440-36-0	NA		2.1	
9.	7440-38-2	NA		0.055	
10.	7440-39-3	NA		7.6	
11.	7440-41-7	NA		0.014	
12.	7440-43-9	NA		0.19	
13.	7440-47-32	NA		0.33	
14.	7439-92-1	NA		0.37	
15.	7439-97-6	NA		0.009	
16.	7440-02-0	NA		5	
17.	7782-49-2	NA		0.16	
18.	7440-22-4	NA		0.3	
19.		NA		0.078	
20.	7440-66-6	NA		5.3	
		* * * * * * *			

* * * * *

(c) The treatment standards for the constituents in F001-F005 which are listed in Table CCWE only apply to wastes which contain one, two, or all three of these constituents. If the waste contains any of these three constituents along with any of the other 26 constituents found in F001-F005, then only the treatment standards in Sec. 268.43 Table CCW are required.

35-36. In Sec. 268.42, Table 2 of paragraph (a) is amended by adding entries for K107, K108, K109, K110, K112, K123, K124, K125, K126, U328, U353, and U359 in alphanumerical order and paragraphs (b) and (d) are revised to read as follows:

Sec. 268.42 Treatment standards expressed as specified technologies.

* * * * *

268.42 Table 2.--Technology-Based Standards by RCRA Waste Code

Line No.	Waste code	See also	Waste descriptions and/or treatment subcategory
			* * * * * * *
1.	K107		Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides
2.	K108		Condensed column overheads from product separation and condensed reactor vent gases from the production of

		1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	
3.	K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	
4.	K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides	
5.	K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene	
		* * * * * * *	
6.	K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts	
7.	K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts	
8.	K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts	
9.	K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylene bisdithiocarbamic acid and its salts	
		* * * * * * *	
10.	U328	o-toluidine	
11.	U353	p-toluidine	
12.	U359	2-ethoxy-ethanol	
		* * * * * * *	

(...Table continues...)

Line No.	CAS No. for regulated hazardous constituents	Technology code	
		Wastewaters	Nonwastewaters
		* * * * * * *	
1.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
2.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
3.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
4.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
5.	NA	INCIN; or CHOXD fb, CARBN; or BIODG fb CARBN	INCIN.
		* * * * * * *	
6.	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.
7.	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.

8.	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.
9.	NA	INCIN; or CHOXD fb (BIODG or CARBN)	INCIN.
		* * * * * * *	
10.	95-53-4	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN	INCIN; or Thermal Destruction.
11.	106-49-0	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN	INCIN; or Thermal Destruction.
12.	110-80-5	INCIN; or CHOXD fb, (BIODG or CARBN); or BIODG fb CARBN	INCIN; or FSUBS.
		* * * * * * *	

(b) Any person may submit an application to the Administrator demonstrating that an alternative treatment method can achieve a measure of performance equivalent to that achieved by methods specified in paragraphs (a), (c), and (d) of this section for wastes or specified in Table 1 of Sec. 268.45 for hazardous debris. The applicant must submit information demonstrating that his treatment method is in compliance with federal, state, and local requirements and is protective of human health and the environment. On the basis of such information and any other available information, the Administrator may approve the use of the alternative treatment method if he finds that the alternative treatment method provides a measure of performance equivalent to that achieved by methods specified in paragraphs (a), (c), and (d) of this section for wastes or in Table 1 of Sec. 268.45 for hazardous debris. Any approval must be stated in writing and may contain such provisions and conditions as the Administrator deems appropriate. The person to whom such approval is issued must comply with all limitations contained in such a determination.

* * * * *

(d) Radioactive hazardous mixed wastes with treatment standards specified in Table 3 of this section are not subject to any treatment standards specified in Secs. 268.41 or 268.43, or Table 2 of this section. Radioactive hazardous mixed wastes not subject to treatment standards in Table 3 of this section remain subject to all applicable treatment standards specified in Secs. 268.41, 268.43, and Table 2 of this section. Hazardous debris containing radioactive waste is not subject to the treatment standards specified in Table 3 of this section but is subject to the treatment standards specified in Sec. 268.45.

37. In Sec. 268.43(a) Table CCW is amended by revising the entries for F001-F005 spent solvents, K015, K016, K018, K019, K020, K023, K024, K028, K030, K043, K048, K049, K050, K051, K052, K087, K093, K094, U028, U069, U088, U102, U107, and U190, by removing the entry for U042, and by adding the entries for F037, F038, K117, K118, K131, K132, and K136 in alphanumerical order to read as follows:

Sec. 268.43 Treatment standards expressed as waste concentrations.

(a) * * *

268.43.--Table CCW.--Constituent Concentrations in Wastes

Line No.	Waste code	Commercial chemical name	See also	Regulated hazardous constituent
		* * * * * * *		
1.	F001-F005 spent solvents	NA		Acetone
2.				Benzene
3.				n-Butyl alcohol
4.				Carbon tetrachloride
5.				Chlorobenzene
6.	Cresol (m- and p-isomers)			
7.				o-cresol
8.				o-Dichlorobenzene
9.				Ethyl acetate
10.				Ethyl benzene
11.				Ethyl ether
12.				Isobutyl alcohol
13.				Methylene chloride
14.				Methyl ethyl ketone
15.				Methyl isobutyl ketone
16.				Nitrobenzene
17.				Pyridine
18.				Tetrachloroethylene
19.				Toluene
20.				1,1,1-Trichloroethane
21.				1,1,2-Trichloroethane
22.				Trichloroethylene
23.				1,1,2-Trichloro-1,2,2-trifluoromethane
24.				Trichloromono-fluoromethane
25.				Xylenes (total)
		* * * * * * *		
26.	F037	NA	Table CCWE in 268.41	Acenaphthene
27.				Anthracene
28.				Benzene
29.				Benzo(a)anthracene
30.				Benzo(a)pyrene
31.				Bis(2-ethylhexyl) phthalate
32.				Chrysene
33.				Di-n-butyl phthalate
34.				Ethylbenzene
35.				Fluorene
36.				Naphthalene
37.				Phenanthrene
38.				Phenol
39.				Pyrene
40.				Toluene
41.				Xylene(s)
42.				Cyanides (Total)
43.				Chromium (Total)
44.				Lead
45.	F038	NA	Table CCWE	Benzene

			in 268.41	
46.				Benzo(a)pyrene
47.				Bis(2-ethylhexyl) phthalate
48.				Chrysene
49.				Di-n-butyl phthalate
50.				Ethylbenzene
51.				Fluorene
52.				Naphthalene
53.				Phenanthrene
54.				Phenol
55.				Pyrene
56.				Toluene
57.				Xylene(s)
58.				Cyanides (Total)
59.				Chromium (Total)
60.				Lead
		* * * * * * *		
61.	K015	NA	Table CCWE in 268.41	Anthracene
62.				Benzal Chloride
63.				Sum of Benzo(b) fluoranthene and Benzo(k) fluoranthene
64.				Phenanthrene
65.				Toluene
66.				Chromium (Total)
67.				Nickel
68.	K016	NA		Hexachlorobenzene
69.				Hexachlorobutadiene
70.	Hexachlorocyclopentadiene			
71.				Hexachloroethane
72.				Tetrachloroethene
		* * * * * * *		
73.	K018	NA		Chloroethane
74.				Chloromethane
75.				1,1-Dichloroethane
76.				1,2-Dichloroethane
77.				Hexachlorobenzene
78.				Hexachlorobutadiene
79.				Pentachloroethane
80.				1,1,1-Trichloroethane
81.				Hexachloroethane
82.	K019	NA		Bis(2-chloroethyl) ether
83.				Chlorobenzene
84.				Chloroform
85.				p-Dichlorobenzene
86.				1,2-Dichloroethane
87.				Fluorene
88.				Hexachloroethane
89.				Naphthalene
90.				Phenanthrene
91.	1,2,4,5-Tetrachlorobenzene			
92.				Tetrachloroethene
93.				1,2,4-Trichlorobenzene
94.				1,1,1-Trichloroethane

95.	K020	NA		1,2-Dichloroethane
96.	1,1,2,2-Tetrachloroethane			
97.				Tetrachloroethene
		* * * * * * *		
98.	K023	NA		Phthalic anhydride (measured as Phthalic acid)
99.	K024	NA		Phthalic anhydride (measured as Phthalic acid)
100.	K028	NA	Table CCWE in 268.41	1,1-Dichloroethane trans-1,2-
101.				Dichloroethane
102.				Hexachlorobutadiene
103.				Hexachloroethane
104.				Pentachloroethane
105.	1,1,1,2-Tetrachloroethane			
106.	1,1,2,2-Tetrachloroethane			
107.				1,1,1,-Trichloroethane
108.				1,1,2-Trichloroethane
109.				Tetrachloroethylene
110.				Cadmium
111.				Chromium (Total)
112.				Lead
113.				Nickel
		* * * * * * *		
114.	K030	NA		o-Dichlorobenzene
115.				p-Dichlorobenzene
116.				Hexachlorobutadiene
117.				Hexachloroethane
118.				Hexachloropropene
119.				Pentachlorobenzene
120.				Pentachloroethane
121.	1,2,4,5-Tetrachlorobenzene			
122.				Tetrachloroethene
123.				1,2,4-Trichlorobenzene
		* * * * * * *		
124.	K030	NA		2,4-Dichlorophenol
125.				2,6-Dichloropheno
126.				2,4,5-Trichlorophenol
127.				2,4,6-Trichlorophenol
128.	Tetrachlorophenols (Total)			
129.				Pentachlorophenol
130.				Tetrachloroethene
131.				Hexachlorodibenzo-p-dioxins
132.	Hexachlorodibenzofurans			
133.				Pentachlorodibenzo-p-dioxins
134.	Pentachlorodibenzo furans			
135.				Tetrachlorodibenzo-p-dioxins
136.	Tetrachlorodibenzofurans			
		* * * * * * *		
137.	K048	NA	Table CCWE in 268.41	Benzene
138.				Benzo(a)pyrene

139.				Bis(2-ethylhexyl) phthalate
140.				Chrysene
141.				Di-n-butyl phthalate
142.				Ethylbenzene
143.				Fluorene
144.				Naphthalene
145.				Phenanthrene
146.				Phenol
147.				Pyrene
148.				Toluene
149.				Xylene(s)
150.				Cyanides (Total)
151.				Chromium (Total)
152.				Lead
153.	K049	NA	Table CCWE in 268.41	Anthracene
154.				Benzene
155.				Benzo(a)pyrene
156.				Bis(2-ethylhexyl) phthalate
157.				Carbon disulfide
158.				Chrysene
159.				2,4-Dimethyl phenol
160.				Ethylbenzene
161.				Naphthalene
162.				Phenanthrene
163.				Phenol
164.				Pyrene
165.				Toluene
166.				Xylene(s)
167.				Cyanides (Total)
168.				Chromium (Total)
169.	K050	NA	Table CCWE in 268.41	Lead
170.				Benzo(a)pyrene
171.				Phenol
172.				Cyanides (Total)
173.				Chromium (Total)
174.				Lead
175.	K051	NA	Table CCWE in 268.41	Acenaphthene
176.				Anthracene
177.				Benzene
178.				Benzo(a) anthracene
179.				Benzo(a)pyrene
180.				Bis(2-ethylhexyl) phthalate
181.				Chrysene
182.				Di-n-butyl phthalate
183.				Ethylbenzene
184.				Fluorene
185.				Naphthalene
186.				Phenanthrene
187.				Phenol
188.				Pyrene
189.				Toluene

190.				Xylene(s)
191.				Cyandides (Total)
192.				Chromium (Total)
193.				Lead
194.				Benzene
195.				Benzo(a)pyrene
196.	K052	NA	Table CCWE in 268.41	o-Cresol
197.				p-Cresol
198.				2,4-Dimenthylphenol
199.				Ethylbenzene
200.				Naphthalene
201.				Phenanthrene
202.				Phenol
203.				Toluene
204.				Xylenes
205.				Cyanides (Total)
206.				Chromium (Total)
207.				Lead
		* * * * * * *		
208.	K087	NA	Table CCWE in 268.41	Acenaphthalene
209.				Lead
210.				Chrysene
211.				Fluoranthene
212.	Indeno (1,2,3-cd) pyrene			
213.				Naphthalene
214.				Phenanthrene
215.				Toluene
216.				Xylenes
217.				Benzene
218.				Lead
219.	K093	NA		Phthalic anhydride (measured as Phthalic acid)
220.	K094	NA		Phthalic anhydride (measured as Phthalic acid)
		* * * * * * *		
221.	K111	NA		2,4-Dinitrotoluene
222.				2,6-Dinitrotoluene
		* * * * * * *		
223.	K117	NA		Ethylene dibromide
224.				Methyl bromide
225.				Chloroform
226.	K118	NA		Ethylene dibromide
227.				Methyl bromide
228.				Chloroform
229.	K131	NA		Methyl bromide
230.	K132	NA		Methyl bromide
231.	K136	NA		Ethylene dibromide
232.				Methyl bromide
233.				Chloroform
		* * * * * * *		
234.	U028	Bis(2-ethylhexyl) phthalate		Bis(2-ethylhexyl) phthalate

		* * * * * * *	
235.	U069	Di-n-butyl phthalate	Di-n-butyl phthalate
		* * * * * * *	
236.	U088	Diethyl phthalate	Diethyl phthalate
		* * * * * * *	
237.	U102	Dimethyl phthalate	Dimethyl phthalate
		* * * * * * *	
238.	U107	Di-n-octyl phthalate	Di-n-octyl phthalate
		* * * * * * *	
239.	U190	Phthalic anhydride (measured as Phthalic acid)	Phthalic anhydride (measured as Phthalic acid)
		* * * * * * *	

(...Table continues...)

		Wastewaters		Nonwastewaters	
Line No.	CAS number for regulated hazardous constituent	Concentration (mg/l)	Notes	Concentration (mg/l)	Notes
		* * * * * * *			
1.	67-64-1	0.28		160	
2.	71-43-2	0.070		3.7	(/1/)
3.	71-36-3	5.6		2.6	
4.	56-23-5	0.057		5.6	
5.	108-90-7	0.057		5.7	
6.		0.77		3.2	
7.		0.11		5.6	
8.	95-50-1	0.088		6.2	
9.	141-7-6	0.34		33	
10.	100-41-4	0.057		6.0	
11.	60-29-7	0.12		160	
12.	78-83-1	5.6		170	
13.	75-9-2	0.089		33	
14.	78-93-3	0.28		36	
15.	108-10-1	0.14		33	
16.	98-95-3	0.068		14	
17.	110-86-1	0.014		16	
18.	127-18-4	0.056		5.6	
19.	108-88-3	0.08		28	
20.	71-55-6	0.054		5.6	
21.	79-00-5	0.030		7.6	(/1/)
22.	79-01-6	0.054		5.6	
23.	76-13-1	0.057		28	
24.	75-69-4	0.02		33	
25.		0.32		28	
		* * * * * * *			
26.	208-96-8	0.059	(/2/)	NA	
27.	120-12-7	0.059	(/2/)	28	(/1/)
28.	71-43-2	0.14	(/2/)	14	(/1/)

29.	50-32-8	0.059	(/2/)	20	(/1/)
30.	117-81-7	0.061	(/2/)	12	(/1/)
31.	75-15-0	0.28	(/2/)	7.3	(/1/)
32.	218-01-9	0.059	(/2/)	15	(/1/)
33.	105-67-9	0.057	(/2/)	3.6	(/1/)
34.	100-41-4	0.057	(/2/)	14	(/1/)
35.	86-73-7	0.059	(/2/)	NA	
36.	91-20-3	0.059	(/2/)	42	(/1/)
37.	85-01-8	0.059	(/2/)	34	(/1/)
38.	108-95-2	0.039	(/2/)	3.6	(/1/)
39.	129-00-0	0.067	(/2/)	36	(/1/)
40.	108-88-3	0.08	(/2/)	14	(/1/)
41.		0.32	(/2/)	22	(/1/)
42.	57-12-5	0.028	(/1/)	1.8	(/1/)
43.	7440-47-32	0.2		NA	
44.	7439-92-1	0.037		NA	
45.	71-43-2	0.14	(/2/)	14	(/1/)
46.	50-32-8	0.061	(/2/)	12	(/1/)
47.	117-81-7	0.28	(/2/)	7.3	(/1/)
48.	218-01-9	0.059	(/2/)	15	(/1/)
49.	84-74-2	0.057	(/2/)	3.6	(/1/)
50.	100-41-4	0.057	(/2/)	14	(/1/)
51.	86-73-7	0.059	(/2/)	NA	
52.	91-20-3	0.059	(/2/)	42	(/1/)
53.	85-01-8	0.059	(/2/)	34	(/1/)
54.	108-95-2	0.039	(/2/)	3.6	(/1/)
55.	129-00-0	0.067	(/2/)	36	(/1/)
56.	108-88-3	0.080	(/2/)	14	(/1/)
57.		0.32	(/2/)	22	(/1/)
58.	57-12-5	0.028	(/1/)	1.8	(/1/)
59.	7440-47-32	0.2		NA	
60.	7439-92-1	0.037		NA	
		* * * * * * *			
61.	120-12-7	0.059		3.4	(/1/)
62.	98-87-3	0.28		6.2	(/1/)
63.	207-08-9	0.055		3.4	
64.	85-01-8	0.059		3.4	(/1/)
65.	108-88-3	0.08		6.0	(/1/)
66.	7440-47-32	0.32		NA	
67.	7440-02-0	0.44		NA	
68.	118-74-1	0.055		28	(/1/)
69.	87-68-3	0.055		5.6	(/1/)
70.	77-47-4	0.057		5.6	(/1/)
71.	67-72-1	0.055		28	(/1/)
72.	127-18-4	0.056		6.0	(/1/)
		* * * * * * *			
73.	76-00-3	0.27		6.0	(/1/)
74.	74-87-3	0.19		NA	
75.	75-34-3	0.059		6.0	(/1/)
76.	107-06-2	0.21		6.0	(/1/)
77.	118-74-1	0.055		28	(/1/)
78.	87-68-3	0.055		5.6	(/1/)
79.	76-01-7	NA		5.6	
80.	71-55-6	0.054		6.0	
81.	67-72-1	0.055		28	(/1/)
82.	111-44-4	0.033		5.6	(/1/)
83.	108-90-7	0.057		6.0	(/1/)

84.	67-66-3	0.046	6.0	(/1/)
85.	106-46-7	0.09	NA	
86.	107-06-2	0.21	6.0	(/1/)
87.	86-73-7	0.059	NA	
88.	67-72-1	0.055	28	(/1/)
89.	91-20-3	0.059	5.6	(/1/)
90.	85-01-8	0.059	5.6	(/1/)
91.	95-94-3	0.055	NA	
92.	127-18-4	0.056	6.0	(/1/)
93.	120-82-1	0.055	19	(/1/)
94.	71-55-6	0.054	6.0	(/1/)
95.	106-93-4	0.21	6.0	(/1/)
96.	79-34-6	0.057	5.6	(/1/)
97.	127-18-4	0.056	6.0	(/1/)
		* * * * * * *		
98.	85-44-9	0.069	28	(/1/)
99.	85-44-9	0.069	28	(/1/)
100.	75-34-3	0.059	6.0	(/1/)
101.		0.054	6.0	(/1/)
102.	87-68-3	0.055	5.6	(/1/)
103.	67-72-1	0.055	28	(/1/)
104.	76-01-7	NA	5.6	(/1/)
105.	630-20-6	0.057	5.6	(/1/)
106.	79-34-6	0.057	5.6	(/1/)
107.	71-55-6	0.054	6.0	(/1/)
108.	79-00-5	0.054	6.0	(/1/)
109.	127-18-4	0.056	6.0	(/1/)
110.	7440-43-9	6.4	NA	
111.	7440-47-32	0.35	NA	
112.	7439-92-1	0.037	NA	
113.	7440-02-0	0.47	NA	
		* * * * * * *		
114.	95-50-1	0.088	NA	
115.	106-46-7	0.09	NA	
116.	87-68-3	0.055	5.6	(/1/)
117.	67-72-1	0.055	28	(/1/)
118.	1888-71-7	NA	19	(/1/)
119.	608-93-5	NA	28	(/1/)
120.	76-01-7	NA	5.6	(/1/)
121.	95-94-3	0.055	14	(/1/)
122.	127-18-4	0.056	6.0	(/1/)
123.	120-82-1	0.055	19	(/1/)
		* * * * * * *		
124.	120-83-2	0.044	0.38	(/1/)
125.	187-65-0	0.044	0.34	(/1/)
126.	95-95-4	0.18	8.2	(/1/)
127.	88-06-2	0.035	7.6	(/1/)
128.		NA	0.68	(/1/)
129.	87-86-5	0.089	1.9	(/1/)
130.	79-01-6	0.056	1.7	(/1/)
131.		0.000063	0.001	(/1/)
132.		0.000063	0.001	(/1/)
133.		0.000063	0.001	(/1/)
134.		0.000063	0.001	(/1/)
135.		0.000063	0.001	(/1/)
136.		0.000063	0.001	(/1/)
		* * * * * * *		

137.	71-43-2	0.14	(/2/)	14	(/1/)
138.	50-32-8	0.061	(/2/)	12	(/1/)
139.	117-81-7	0.28	(/2/)	7.3	(/1/)
140.	218-01-9	0.059	(/2/)	15	(/1/)
141.	84-74-2	0.057	(/2/)	3.6	(/1/)
142.	100-41-4	0.057	(/2/)	14	(/1/)
143.	86-73-7	0.059	(/2/)	NA	
144.	91-20-3	0.059	(/2/)	42	(/1/)
145.	85-01-8	0.059	(/2/)	34	(/1/)
146.	108-95-2	0.039	(/2/)	3.6	(/1/)
147.	129-00-0	0.067	(/2/)	36	(/1/)
148.	108-88-3	0.080	(/2/)	14	(/1/)
149.		0.32	(/2/)	22	(/1/)
150.	57-12-5	0.028	(/1/)	1.8	(/1/)
151.	7440-47-32	0.2		NA	
152.	7439-92-1	0.037		NA	
153.	120-12-7	0.059	(/2/)	28	(/1/)
154.	71-43-2	0.14	(/2/)	14	(/1/)
155.	117-81-7	0.061	(/2/)	12	(/1/)
156.	75-150-0	0.28	(/2/)	7.3	(/1/)
157.	75-15-0	0.014	(/2/)	NA	
158.	2218-01-9	0.059	(/2/)	15	(/1/)
159.	105-67-9	0.036	(/2/)	NA	
160.	100-41-4	0.057	(/2/)	14	(/1/)
161.	91-20-3	0.059	(/2/)	42	(/1/)
162.	85-01-8	0.059	(/2/)	34	(/1/)
163.	108-95-2	0.039	(/2/)	3.6	(/1/)
164.	129-00-0	0.067	(/2/)	36	(/1/)
165.	108-88-3	0.08	(/2/)	14	(/1/)
166.		0.32	(/2/)	22	(/1/)
167.	56-12-5	0.028	(/1/)	1.8	(/1/)
168.	7440-47-32	0.2		NA	
169.	7439-92-1	0.037		NA	
170.	50-32-8	0.061	(/2/)	12	(/1/)
171.	108-95-2	0.039	(/2/)	3.6	(/1/)
172.	57-12-5	0.028	(/1/)	1.8	(/1/)
173.	7440-47-32	0.2		NA	
174.	7439-29-1	0.037		NA	
175.	83-32-9	0.059	(/2/)	NA	
176.	120-12-7	0.059	(/2/)	28	(/1/)
177.	71-43-2	0.14	(/2/)	14	(/1/)
178.	50-32-8	0.059	(/2/)	20	(/1/)
179.	117-81-7	0.061	(/2/)	12	(/1/)
180.	75-15-0	0.28	(/2/)	7.3	(/1/)
181.	2218-01-9	0.059	(/2/)	15	(/1/)
182.	105-67-9	0.057	(/2/)	3.6	(/1/)
183.	100-41-4	0.057	(/2/)	14	(/1/)
184.	86-73-7	0.059	(/2/)	NA	
185.	91-20-3	0.059	(/2/)	42	(/1/)
186.	85-01-8	0.059	(/2/)	34	(/1/)
187.	108-95-2	0.039	(/2/)	3.6	(/1/)
188.	129-00-0	0.067	(/2/)	36	(/1/)
189.	108-88-3	0.08	(/2/)	14	(/1/)
190.		0.32	(/2/)	22	(/1/)
191.	57-12-5	0.028	(/1/)	1.8	(/1/)
192.	7440-47-32	0.2		NA	
193.	7439-92-1	0.037		NA	

194.	71-43-2	0.14	(/2/)	14	(/1/)
195.	50-32-8	0.061	(/2/)	12	(/1/)
196.	95-48-7	0.11	(/2/)	6.2	(/1/)
197.	106-44-5	0.77	(/2/)	6.2	(/1/)
198.	105-67-9	0.036	(/2/)	NA	
199.	100-41-4	0.057	(/2/)	14	(/1/)
200.	91-20-3	0.059	(/2/)	42	(/1/)
201.	85-01-8	0.059	(/2/)	34	(/1/)
202.	108-95-2	0.039	(/2/)	3.6	(/1/)
203.	108-88-3	0.08	(/2/)	14	(/1/)
204.		0.32	(/2/)	22	(/1/)
205.	56-12-5	0.028	(/1/)	1.8	(/1/)
206.	7440-47-32	0.2		NA	
207.	7439-92-1	0.037		NA	
		* * * * * * *			
208.	208-96-8	0.059	(/2/)	3.4	
209.	7439-92-1	0.037		NA	
210.	218-01-9	0.059	(/2/)	3.4	(/1/)
211.	206-44-0	0.068	(/2/)	3.4	(/1/)
212.	193-39-5	0.0055	(/2/)	3.4	(/1/)
213.	91-20-3	0.059	(/2/)	3.4	(/1/)
214.	85-01-8	0.059	(/2/)	3.4	(/1/)
215.	108-88-3	0.08	(/2/)	0.65	(/1/)
216.		0.32	(/2/)	0.07	(/1/)
217.	71-43-2	0.14	(/2/)	0.071	(/1/)
218.	7439-92-1	0.037		NA	
219.	85-44-9	0.069		28	(/1/)
220.	85-44-9	0.069		28	(/1/)
		* * * * * * *			
221.	121-14-2	0.32		140	(/1/)
222.	606-20-2	0.55		28	(/1/)
		* * * * * * *			
223.	106-93-4	0.028		15	(/1/)
224.	74-83-9	0.11		15	(/1/)
225.	67-66-3	0.046		5.6	(/1/)
226.	106-93-4	0.028		15	(/1/)
227.	74-83-9	0.11		15	(/1/)
228.	67-66-3	0.046		5.6	(/1/)
229.	74-83-9	0.11		15	(/1/)
230.	74-83-9	0.11		15	(/1/)
231.	106-93-4	0.028		15	(/1/)
232.	74-83-9	0.11		15	(/1/)
233.	67-66-3	0.046		5.6	(/1/)
		* * * * * * *			
234.	117-81-7	0.28		28	(/1/)
		* * * * * * *			
235.	84-74-2	0.057		28	(/1/)
		* * * * * * *			
236.	84-66-2	0.2		28	(/1/)
		* * * * * * *			
237.	131-11-3	0.047		28	(/1/)
		* * * * * * *			
238.	117-84-0	0.017		28	(/1/)
		* * * * * * *			
239.	85-44-9	0.069		28	(/1/)
		* * * * * * *			

/1/ Treatment standards for this organic constituent were

established based upon incineration in units operated in accordance with the technical requirements of 40 CFR 264 Subpart O or Part 265 Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may certify compliance with these treatment standards according to provisions in 40 CFR Section 268.7.

/2/ Based on analysis of composite samples.

* * * * * * *

Note: NA means Not Applicable.

38. In subpart D, Sec. 268.45 with Table 1 is added to read as follows:

Sec.268.45 Treatment standards for hazardous debris.

(a) Treatment standards. Hazardous debris must be treated prior to land disposal as follows unless EPA determines under Sec. 261.3(e)(2) of this chapter that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this subpart for the waste contaminating the debris:

(1) General. Hazardous debris must be treated for each "contaminant subject to treatment" defined by paragraph (b) of this section using the technology or technologies identified in Table 1 of this section.

(2) Characteristic debris. Hazardous debris that exhibits the characteristic of ignitability, corrosivity, or reactivity identified under Secs. 261.21, 261.22, and 261.23 of this chapter, respectively, must be deactivated by treatment using one of the technologies identified in Table 1 of this section.

(3) Mixtures of debris types. The treatment standards of Table 1 in this section must be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.

(4) Mixtures of contaminant types. Debris that is contaminated with two or more contaminants subject to treatment identified under paragraph (b) of this section must be treated for each contaminant using one or more treatment technologies identified in Table 1 of this section. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.

(5) Waste PCBs. Hazardous debris that is also a waste PCB under 40 CFR part 761 is subject to the requirements of either 40 CFR part 761 or the requirements of this section, whichever are more stringent.

(b) Contaminants subject to treatment. Hazardous debris must be treated for each "contaminant subject to treatment." The contaminants subject to treatment must be determined as follows:

(1) Toxicity characteristic debris. The contaminants subject to treatment for debris that exhibits the Toxicity Characteristic (TC) by Sec. 261.24 of this chapter are those EP constituents for which the debris exhibits the TC toxicity characteristic.

(2) Debris contaminated with listed waste. The contaminants subject to treatment for debris that is contaminated with a prohibited listed

hazardous waste are those constituents for which BDAT standards are established for the waste under Secs. 268.41 and 268.43.

(3) Cyanide reactive debris. Hazardous debris that is reactive because of cyanide must be treated for cyanide.

(c) Conditioned exclusion of treated debris. Hazardous debris that has been treated using one of the specified extraction or destruction technologies in Table 1 of this section and that does not exhibit a characteristic of hazardous waste identified under subpart C, part 261, of this chapter after treatment is not a hazardous waste and need not be managed in a subtitle C facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in Table 1 is a hazardous waste and must be managed in a subtitle C facility.

(d) Treatment residuals--(1) General requirements. Except as provided by paragraphs (d)(2) and (d)(4) of this section:
(i) Residue from the treatment of hazardous debris must be separated from the treated debris using simple physical or mechanical means; and
(ii) Residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by subpart D of this part for the waste contaminating the debris.

(2) Nontoxic debris. Residue from the deactivation of ignitable, corrosive, or reactive characteristic hazardous debris (other than cyanide-reactive) that is not contaminated with a contaminant subject to treatment defined by paragraph (b) of this section, must be deactivated prior to land disposal and is not subject to the waste-specific treatment standards of subpart D of this part.

(3) Cyanide-reactive debris. Residue from the treatment of debris that is reactive because of cyanide must meet the standards for D003 under Sec. 268.43.

(4) Ignitable nonwastewater residue. Ignitable nonwastewater residue containing equal to or greater than 10% total organic carbon is subject to the technology-based standards for D001: "Ignitable Liquids based on Sec. 261.21(a)(1)" under Sec. 268.42.

(5) Residue from spalling. Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of this section.

Table 1.--Alternative Treatment Standards For Hazardous Debris

Technology description	Performance and/or design and operating standard /1/	Contaminant restrictions /2/
A. Extraction Technologies:		
1. Physical Extraction		
a. Abrasive Blasting: Removal of contaminated debris surface layers using water and/or air pressure to propel a	Glass, Metal, Plastic, Rubber: Treatment to a clean debris surface./3/	All Debris: None.

solid media (e.g., steel shot, aluminum oxide grit, plastic beads)		
	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Removal of at least 0.6 cm of the surface layer; treatment to a clean debris surface./3/	
b. Scarification, Grinding, and Planing: Process utilizing striking piston heads, saws, or rotating grinding wheels such that contaminated debris surface layers are removed	Same as above	Same as above.
c. Spalling: Drilling or chipping holes at appropriate locations and depth in the contaminated debris surface and applying a tool which exerts a force on the sides of those holes such that the surface layer is removed. The surface layer removed remains hazardous debris subject to the debris treatment standards	Same as above	Same as above.
d. Vibratory Finishing: Process utilizing scrubbing media, flushing fluid, and oscillating energy such that hazardous contaminants or contaminated debris surface layers are removed./4/	Same as above	Same as above.
e. High Pressure Steam and Water Sprays: Application of water or steam sprays of sufficient temperature, pressure, residence time, agitation, surfactants, and detergents to remove hazardous contaminants from debris surfaces	Same as above	Same as above.

or to remove contaminated debris surface layers		
2. Chemical Extraction		
a. Water Washing and Spraying: Application of water sprays or water baths of sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and detergents to remove hazardous contaminants from debris surfaces and surface pores or to remove contaminated debris surface layers	All Debris: Treatment to a clean debris surface /3/; Contaminant must be soluble to at least 5% by weight in water solution or 5% by weight in emulsion; if debris is contaminated with a dioxin-listed waste,/6/ an "Equivalent Technology" approval under Sec. 268.42(b) must be obtained./8/	
	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit,/5/ except that this thickness limit may be waived under an "Equivalent Technology" approval under Sec. 268.42(b);/8/ debris surfaces must be in contact with water solution for at least 15 minutes	
b. Liquid Phase Solvent Extraction: Removal of hazardous contaminants from debris surfaces and surface pores by applying a nonaqueous liquid or liquid solution which causes the hazardous contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution while using appropriate agitation, temperature, and residence time./4/	Same as above	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Same as above, except that contaminant must be soluble to at least 5% by weight in the solvent.
c. Vapor Phase Solvent Extraction: Application of an	Same as above, except that brick, cloth, concrete, paper,	Same as above.

organic vapor using sufficient agitation, residence time, and temperature to cause hazardous contaminants on contaminated debris surfaces and surface pores to enter the vapor phase and be flushed away with the organic vapor./4/	pavement, rock and wood surfaces must be in contact with the organic vapor for at least 60 minutes	
3. Thermal Extraction		
a. High Temperature Metals Recovery: Application of sufficient heat, residence time, mixing, fluxing agents, and/or carbon in a smelting, melting, or refining furnace to separate metals from debris	For refining furnaces, treated debris must be separated from treatment residuals "Equivalent Technology" using simple physical or mechanical means,/9/ and, prior to further treatment, such residuals must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris	Debris contaminated with a dioxin-listed waste:/5/ Obtain an "Equivalent Technology" approval under Sec. 268.42(b)./8/
b. Thermal Desorption: Heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient temperature and residence time to vaporize hazardous contaminants from contaminated surfaces and surface pores and to remove the contaminants from the heating chamber in a gaseous exhaust gas./7/	All Debris: Obtain an "Equivalent Technology" approval under Sec. 268.42(b);/8/ treated debris must be separated from treatment residuals using simple physical or mechanical means,/9/ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 10 cm (4 inches) in one dimension (i.e., thickness limit),/5/ except that this thickness limit may be waived under the "Equivalent Technology" approval	All Debris: Metals other than mercury.
B. Destruction Technologies:		

1. Biological Destruction (Biodegradation): Removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegration of organic or nonmetallic inorganic compounds (i.e., inorganics that contain phosphorus, nitrogen, or sulfur) in units operated under either aerobic or anaerobic conditions	All Debris: Obtain an "Equivalent Technology" approval under Sec. 268.42(b);/8/ treated debris must be separated from treatment residuals using simple physical or mechanical means,/9/ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit),/5/ except that this thickness limit may be waived under the "Equivalent Technology" approval	All Debris: Metal contaminants.
2. Chemical Destruction a. Chemical Oxidation: Chemical or electolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combination of reagents--(1) hypochlorite (e.g., bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) perman-ganates; and/or (9) other oxidizing reagents of equivalent destruction efficiency./4/ Chemical oxidation specifically includes what is referred to as alkaline chlorination	All Debris: Obtain an "Equivalent Technology" approval under Sec. 268.42(b);/8/ treated debris must be separated from treatment residuals using simple physical or mechanical means,/9/ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris	All Debris: Metal contaminants.

	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm (1/2 inch) in one dimension (i.e., thickness limit),/5/ except that this thickness limit may be waived under the "Equivalent Technology" approval	
b. Chemical Reduction: Chemical reaction utilizing the following reducing reagents (or waste reagents) or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency./4/	Same as above	Same as above.
3. Thermal Destruction: Treatment in an incinerator operating in accordance with Subpart O of Parts 264 or 265 of this chapter; a boiler or industrial furnace operating in accordance with Subpart H of Part 266 of this chapter, or other thermal treatment unit operated in accordance with Subpart X, Part 264 of this chapter, or Subpart P, Part 265 of this chapter, but excluding for purposes of these debris treatment standards Thermal Desorption units	Treated debris must be separated from treatment residuals using simple physical or mechanical means,/9/ and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris	Brick, Concrete, Glass, Metal, Pavement, Rock, Metal: Metals other than mercury, except that there are no metal restrictions for vitrification.
		Debris contaminated

with		a dioxin-listed waste./6/ Obtain an "Equivalent Technology" approval under Sec. 268.42(b),/8/ except that this requirement does not apply to vitrification.
C. Immobilization Technologies:		
1. Macroencapsulation: Application of surface coating materials such as polymeric organics (e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media	Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes)	None.
2. Microencapsulation: Stabilization of the debris with the following reagents (or waste reagents) such that the leachability of the hazardous contaminants is reduced: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust). Reagents (e.g., iron salts, silicates, and clays) may be added to enhance the set/cure time and/or compressive strength, or to reduce the leachability of the hazardous constituents./5/	Leachability of the hazardous contaminants must be reduced	None.
3. Sealing: Application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to	Sealing must avoid exposure of the debris surface to potential leaching media and sealant must be resistent to degradation by the debris and its contaminants and	None.

	effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds, but paint may not be used as a sealant	materials into which it may come into contact after placement (leachate, other waste, microbes)

/1/ Hazardous debris must be treated by either these standards or the waste-specific treatment standards for the waste contaminating the debris. The treatment standards must be met for each type of debris contained in a mixture of debris types, unless the debris is converted into treatment residue as a result of the treatment process. Debris treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

/2/ Contaminant restriction means that the technology is not BDAT for that contaminant. If debris containing a restricted contaminant is treated by the technology, the contaminant must be subsequently treated by a technology for which it is not restricted in order to be land disposed (and excluded from Subtitle C regulation).

/3/ "Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

/4/ Acids, solvents, and chemical reagents may react with some debris and contaminants to form hazardous compounds. For example, acid washing of cyanide-contaminated debris could result in the formation of hydrogen cyanide. Some acids may also react violently with some debris and contaminants, depending on the concentration of the acid and the type of debris and contaminants. Debris treaters should refer to the safety precautions specified in Material Safety Data Sheets for various acids to avoid applying an incompatible acid to a particular debris/contaminant combination. For example, concentrated sulfuric acid may react violently with certain organic compounds, such as acrylonitrile.

/5/ If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific

treatment
standards for the waste contaminating the material, unless the debris has
been cleaned and separated from contaminated soil and waste prior to size
reduction. At a minimum, simple physical or mechanical means must be used to
provide such cleaning and separation of nondebris materials to ensure that
the debris surface is free of caked soil, waste, or other nondebris
material.
/6/ Dioxin-listed wastes are EPA Hazardous Waste numbers FO20, FO21, FO22,
FO23, FO26, and FO27.
/7/ Thermal desorption is distinguished from Thermal Destruction in that the
primary purpose of Thermal Desorption is to volatilize contaminants and to
remove them from the treatment chamber for subsequent destruction or other
treatment.
/8/ The demonstration "Equivalent Technology" under Sec. 268.42(b) must
document that the technology treats contaminants subject to treatment to a
level equivalent to that required by the performance and design and
operating standards for other technologies in this table such that residual
levels of hazardous contaminants will not pose a hazard to human health and
the environment absent management controls.
/9/ Any soil, waste, and other nondebris material that remains on the debris
surface (or remains mixed with the debris) after treatment is considered a
treatment residual that must be separated from the debris using, at a
minimum, simple physical or mechanical means. Examples of simple physical or
mechanical means are vibratory or trommel screening or water washing. The
debris surface need not be cleaned to a "clean debris surface" as defined in
note 3 when separating treated debris from residue; rather, the surface must
be free of caked soil, waste, or other nondebris material. Treatment
residuals are subject to the waste-specific treatment standards for the
waste contaminating the debris.

39. In subpart D, Sec. 268.46 is added to read as follows:

Sec. 268.46 Alternative treatment standards based on HTMR.

Table 1 identifies alternative treatment standards for F006 and K062 nonwastewaters.

Table 1.--Alternative Treatment Standards

	CAS No. for regulated Nonwastewaters

Waste code	Regulated hazardous constituent	hazardous constituent	CAS number	concentration (mg/1) TCLP
F006	See also Table CCWE in 268.41 and Table CCW in 268.43	Antiomony	7440-36-0	2.1
		Arsenic	7440-38-2	0.055
		Barium	7440-39-3	7.6
		Beryllium	7440-41-7	0.014
		Cadmium	7440-43-9	0.19
		Chromium (total)	7440-47-32	0.33
		Cyanide (mg/kg) (total)	57-12-5	1.8
		Lead	7439-92-1	0.37
		Mercury	7439-97-6	0.009
		Nickel	7440-02-0	5.0
		Selenium	7782-49-2	0.16
		Silver	7440-22-4	0.30
		Thallium		0.078
		Zinc	7440-66-6	5.3
K062	See also Table CCWE in 268.41 and Table CCW in 268.43	Antimony	7440-36-0	2.1
		Arsenic	7440-38-2	0.055
		Barium	7440-39-3	7.6
		Beryllium	7440-41-7	0.014
		Cadmium	7440-43-9	0.19
		Chromium (total)	7440-47-32	0.33
		Lean	7439-92-1	0.37
		Mercury	7439-97-6	0.009
		Nickel	7440-02-0	5.0
		Selenium	7782-49-2	0.16
		Silver	7440-22-4	0.30
		Thallium		0.078
		Zinc	7440-66-6	5.3

40. In Sec. 268.50, paragraph (a)(1) and the introductory text of paragraph (a)(2) are revised to read as follows:

Sec. 268.50 Prohibitions on storage of restricted wastes.

(a) * * *

(1) A generator stores such wastes in tanks, containers, or containment buildings on-site solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and the generator complies with the requirements in Sec. 262.34 and parts 264 and 265 of this chapter.

(2) An owner/operator of a hazardous waste treatment, storage, or disposal facility stores such wastes in tanks, containers, or containment buildings solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and:

* * * * *

41. In Part 268, appendix II is revised to read as follows:

Appendix II--Treatment Standards (As Concentrations in the Treatment

Residual Extract)

Note: The treatment standards for F001-F005 Spent Solvent Wastes appear in Secs. 268.41, 268.42, 268.43.

PART 270--EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

42. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

43. In Sec. 270.13, paragraph (n) is added to read as follows:

Sec. 270.13 Contents of Part A of the permit application.

* * * * *

(n) For hazardous debris, a description of the debris category(ies) and contaminant category(ies) to be treated, stored, or disposed of at the facility.

44. In Sec. 270.14, paragraph (b)(2) is revised to read as follows:

Sec. 270.14 Contents of Part B: General requirements.

* * * * *

(b) * * *
(2) Chemical and physical analyses of the hazardous waste and hazardous debris to be handled at the facility. At a minimum, these analyses shall contain all the information which must be known to treat, store, or dispose of the wastes properly in accordance with part 264 of this chapter.

* * * * *

45. In Sec. 270.42, paragraph (e)(3)(ii)(B) is revised to read as follows:

Sec. 270.42 Permit modification at the request of the permittee.

* * * * *

(e) * * *
(ii) * * *
(B) To allow treatment or storage in tanks or containers, or in containment buildings in accordance with 40 CFR part 268;
* * * * *

46. In Sec. 270.42, appendix I is amended by adding entry 6 to section I., and by adding new section M. to read as follows:

Appendix I to Sec. 270.42--Classification of Permit Modification

Modifications	Class
* * * * *	
I. Enclosed Waste Piles. * * *	

* * * * *

6. Conversion of an enclosed waste pile to a containment building unit 2

* * * * *

M. Containment Buildings.

1. Modification or addition of containment building units:

a. Resulting in greater than 25% increase in the facility's containment building storage or treatment capacity 3

b. Resulting in up to 25% increase in the facility's containment building storage or treatment capacity 2

2. Modification of a containment building unit or secondary containment system without increasing the capacity of the unit 2

3. Replacement of a containment building with a containment building that meets the same design standards provided:

a. The unit capacity is not increased 1

b. The replacement containment building meets the same conditions in the permit 1

4. Modification of a containment building management practice 2

5. Storage or treatment of different wastes in containment buildings:

a. That require additional or different management practices 3

b. That do not require additional or different management practices 2

47. In Sec. 270.72, paragraph (b)(6) is revised to read as follows:

Sec. 270.72 Changes during interim status.

* * * * *

(b) * * *

(6) Changes to treat or store, in tanks, containers, or containment buildings, hazardous wastes subject to land disposal restrictions imposed by part 268 of this chapter or RCRA section 3004, provided that such changes are made solely for the purpose of complying with part 268 of this chapter or RCRA section 3004.

* * * * *

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

48. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A--Requirements for Final Authorization

49. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by date of publication in the Federal Register, and by adding the following entries to Table 2 in chronological order by effective date to read as follows:

Sec. 271.1 Purpose and scope.

* * * * *

Table 1.--Regulations Implementing the Hazardous and Solid Waste Amendments of 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date

* * * * * * *

August 18, 1992	Land disposal restrictions for newly listed wastes in Sec. 268.36 (b)-(g)	(Insert Federal Register (FR) page number)	June 30, 1992.
.....Do	Land disposal restrictions for newly listed wastes in Sec. 268.36(a), hazardous debris, and generic exclusion for K062 and F006 nonwaste-waters	.....Do	November 9, 1992.

* * * * * * *

* * * * * * *

Table 2.--Self-Implementing Provisions of the Hazardous and Solid Waste Amendments of 1984

Effective date	Self-implementing provision	Federal Register RCRA citation	reference
* * * * * * *			
June 30, 1992	Surface Impoundment Retrofit	(Insert Federal Register (FR) page numbers)	August 18, 1992, 57 FR (insert page numbers).
November 9, 1992	Prohibition on land disposal of hazardous debris and newly listed wastes	.....Do	August 18, 1992, 57 FR (insert page numbers).
February 18, 1993	Containment buildings	.....Do	August 18, 1992, 57 FR (insert page numbers)

.

* * * * * * *

* * * * * * *

(FR Doc. 92-15997 Filed 8-17-92; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 3004 1002 3005 3007 1002 1003 3006 7003 3008 3013 1006 2002 3010 3014 3016 3017 3018 7004 3001 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-463 SEC. 7 -- Used Oil Recycling Act of 1980
Pub. Law 94-469 -- Toxic Substances Control Act (Act of 10/11/76)
Pub. Law 96-482 SEC. 17 -- Solid Waste Disposal Act Amendments of 1980
Pub. Law 92-500 SEC. 2 -- Federal Water Pollution Control Act Amendments of 1972
Pub. Law 94-580 SEC. 2 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 79-585 -- Atomic Energy Act of 1946
Pub. Law 91-596 -- Occupational Safety and Health Act of 1970
Pub. Law 98-616 SEC. 244 245 246 -- Hazardous and Solid Waste Amendments

of 1984
Pub. Law 83-703 -- Atomic Energy Act of 1954 (AEA)
Pub. Law 80-845 SEC. 307 -- Federal Water Pollution Control Act (Act of 6/30/48)

DIALOG(R)File 180:Federal Register

Identification and Listing of Hazardous Waste; CERCLA Hazardous Substance Designation; Reportable Quantity Adjustment; Coke By-Products Wastes
Volume: 57 Issue: 160 Page: 37284
CITATION NUMBER: 57 FR 37284
Date: TUESDAY, AUGUST 18, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Emergency and Remedial Response--(OERR); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR 261, 271, 302
NUMBERS: FRL-4134-2; RIN 2050-AC85
DATES: Effective: 19930218
CONTACT INFORMATION: RCRA-Superfund Hotline, 800-424-9346,, 800-553-7672 (TDD),, 703-920-9810,, 703-486-3323 (TDD),; Ron Josephson, 202-260-4770,; or; Gerain Perry, 202-260-2190
ACTION: Final rule
INTERNAL DATA: (FR Doc. 92-19347 Filed 8-17-92, 8:45 am)
Word Count: 19919
SUMMARY: The Environmental Protection Agency is today amending its regulations under the Resource Conservation and Recovery Act (RCRA) by listing as hazardous seven wastes generated during the production, recovery, and refining of coke by-products produced from coal. EPA is adding seven wastes to the list of hazardous wastes from specific sources. EPA is also amending appendix VII of 40 CFR part 261 to add the constituents for which these wastes are being listed. In addition, the Agency is finalizing the proposed determination not to list as hazardous wastes wastewaters from coking and tar refining operations.

The effect of listing K141 through K145, K147 and K148 will be to subject these materials to the hazardous waste regulations of 40 CFR parts 124, 262 through 266, 268, 270 and 271, the notification requirements of RCRA 3010, and the notification requirements under section 103 of CERCLA.

In addition to the listings, the Agency is today amending and clarifying an exclusion from the definition of solid waste for wastes from the coke by- products process that exhibit the TC and are recycled by being returned to coke ovens or mixed with coal tar. (57 FR 27880).

TEXT:

ENVIRONMENTAL PROTECTION AGENCY
40 CFR Parts 261, 271, and 302

(FRL-4134-2)

RIN 2050-AC85

Identification and Listing of Hazardous Waste; CERCLA Hazardous Substance Designation; Reportable Quantity Adjustment; Coke By-Products Wastes

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency is today amending its regulations under the Resource Conservation and Recovery Act (RCRA) by listing as hazardous seven wastes generated during the production, recovery, and refining of coke by-products produced from coal. EPA is adding seven wastes to the list of hazardous wastes from specific sources. EPA is also amending appendix VII of 40 CFR part 261 to add the constituents for which these wastes are being listed. In addition, the Agency is finalizing the proposed determination not to list as hazardous wastes wastewaters from coking and tar refining operations.

The effect of listing K141 through K145, K147 and K148 will be to subject these materials to the hazardous waste regulations of 40 CFR parts 124, 262 through 266, 268, 270 and 271, the notification requirements of RCRA 3010, and the notification requirements under section 103 of CERCLA.

In addition to the listings, the Agency is today amending and clarifying an exclusion from the definition of solid waste for wastes from the coke by- products process that exhibit the TC and are recycled by being returned to coke ovens or mixed with coal tar. (57 FR 27880).

EFFECTIVE DATE: Today's final rule will become effective on February 18, 1993.

ADDRESSES: The official record for this rulemaking is identified as Docket Number F-92-CBPF-FFFFF and is located in the EPA RCRA Docket, room M2427, 401 M Street, SW., Washington, DC 20460. The public must make an appointment in order to review docket materials by calling (202) 260-9327 for the RCRA portion of the docket, or (202) 260-3046 for the CERCLA portion of the docket. Both dockets are available for inspection from 9 a.m. to 4 p.m., Monday through Friday, excluding holidays. The public may copy up to 100 pages from the docket at no charge. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline toll-free at (800) 424-9346 (voice) or (800) 553-7672 (TDD), or, in the Washington, DC metropolitan area, (703) 920-9810 (voice) or (703) 486-3323 (TDD). For technical information on the RCRA portion of the rule, contact Mr. Ron Josephson of the Office of Solid Waste (OS-333) at (202) 260-4770. For technical information on the CERCLA portion of the rule, contact Ms. Gerain Perry, Office of Emergency and Remedial Response (OS-210) at (202) 260-2190.

SUPPLEMENTARY INFORMATION: The contents of today's preamble are listed in the following outline:

I. Background

Section 3001 of Subtitle C of RCRA mandates that EPA make a determination whether to list as hazardous certain wastes generated during the production, recovery, and refining of coke by-products produced from coal. EPA proposed to list a number of these wastes from the coke by-products process as hazardous in a notice published in the Federal Register on July 26, 1991 (56 FR 35758). Certain other wastes from the coke by-products industry are already listed as hazardous under RCRA. An overview of past regulatory actions taken by the Agency that affect this industry was provided in the preamble to the proposed rule (see 56 FR 35759).

On July 26, 1991, EPA proposed to add seven wastes from the coke by-products process to the list of wastes from specific sources. Today's notice promulgates these seven "K-listings."

In a separate Federal Register notice (57 FR 27880), EPA promulgated an exclusion from the definition of solid waste for Hazardous Waste No. K087, and other wastes from the coke by-products process that are hazardous only because they exhibit the Toxicity Characteristic (TC) specified in Sec. 261.24, when they are recycled by being returned to coke ovens as a feedstock to produce coke, added to the tar recovery process to produce coal tar, or mixed with coal tar prior to its sale or refining. This exclusion was conditioned on no land disposal of wastes. Today, the Agency is amending this exclusion to include the wastes being listed in this notice.

II. Summary of the Regulation

A. Overview of the Proposed Rule

The notice published on July 26, 1991 (56 FR 35758) proposed to amend the regulations for hazardous waste listing under RCRA by adding the following seven wastes generated during the production, recovery, and refining of coke by-products produced from coal to the list of hazardous wastes from specific sources under 40 CFR 261.32.

K141--Process residues from the recovery of coal tar, including, but not listed to, tar collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).

K142--Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.

K143--Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery

units from the recovery of coke by-products produced from coal.
K144--Wastewater treatment sludges from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.
K145--Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.
K147--Tar storage tank residues from coal tar refining.
K148--Residues from coal tar distillation, including, but not limited to, still bottoms.

The Agency also proposed to amend appendix VII of 40 CFR part 261 to add the following constituents for which these wastes were proposed for listing: Benzene and polynuclear aromatic hydrocarbons (PAHs), including benz(a)anthracene, benzo(a)pyrene, benzo(b and k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, and naphthalene.

Lastly, the Agency proposed to amend the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) regulations in 40 CFR part 302 by designating all of the proposed listed wastes as hazardous substances under CERCLA. Pursuant to section 102(b) of CERCLA, the reportable quantities (RQs) applicable to each of these wastes is one pound.
The proposed listings included process residues and storage tank residues other than those residuals already listed as EPA Hazardous Waste Nos. K035, K060, and K087. Several industry commenters requested clarification on the scope of the proposed listings. Details on the scope of the listings finalized in today's rule as well as descriptions of the modifications made to the proposed listings are discussed below under Wastes Included in Today's Listing. The proposed listings did not include wastewaters or wastewater treatment sludges from coke by-products recovery and tar refining.

Because a number of the wastes that were proposed for listing are recycled by members of the coke by-products industry, EPA supported the environmentally beneficial recycling of these wastes by proposing to exclude the listed wastes from the definition of solid waste when they are recycled in certain ways. This exclusion is conditioned on no land disposal of the wastes. These wastes are generally recycled using one of the two following methods: (1) Combining the residue with coal feedstock prior to or just after charging the coal into the coke oven, and (2) mixing the residue with coal tar prior to its being sold as a product. In order to maintain hazardous waste control over the listed wastes in the event of mismanagement, the Agency proposed that the exclusions apply at the point of reinsertion of the wastes into the coke ovens or the point at which they are mixed with coal tar. The exclusions were intended to encourage waste minimization while maintaining RCRA control over the wastes prior to the recycling step (i.e., during interim storage and transportation) and when using management practices other than recycling.

EPA proposed the listings of K141-K145 and K147-K148 in response to the Hazardous and Solid Waste Amendments (HSWA) of 1984. Section 3001(e)(2) of RCRA, added by HSWA, requires EPA to make a listing determination for wastes generated from the coke by-products industry.

B. Overview of the Final Rule

1. Hazardous Waste Listings

Today's rule adds to the list of wastes from specific sources the seven listings proposed on July 26, 1991. These are as follows:

K141--Process residues from the recovery of coal tar, including, but not limited to, tar collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).

K142--Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.

K143--Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.

K144--Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.

K145--Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.

K147--Tar storage tank residues from coal tar refining.

K148--Residues from coal tar distillation, including, but not limited to, still bottoms.

Today's rule also amends appendix VII of part 261 to include the constituents for which these wastes are listed.

2. Recycling Exclusion

Several recycling exclusions were proposed on July 26, 1991 as 40 CFR 261.4 (a)(10-(12). Public comments on these exclusions were requested separately from comments on the rest of the listing proposal. For a brief summary of these public comments and EPA's response to them, see the Summary of Public Comments and Responses section later in this preamble. The public comments concerning the recycling exclusion are addressed fully in the exclusion rule promulgated on June 22, 1992 (57 FR 27880).

This rule excluded from the definition of solid waste Hazardous Waste No. K087, and any other wastes from the coke by-products process that are hazardous only because they exhibit the TC, when they are recycled to coke ovens as a feedstock to produce coke, to the tar recovery process to produce coal tar, or mixed with coal tar prior to its sale or refining. This exclusion for recycling is conditioned on there being no land disposal for the materials up to the point of recycling (see 40 CFR 261.4(a)(10); 57 FR 27888). Today, EPA is amending this exclusion to include the wastes being listed in this notice within the scope of the exclusion. The extension of the exclusion to the wastes being listed in today's rule is logical given the fact that many, if not all of the wastes listed here qualify for the existing exclusion under Sec. 261.4(a)(10). In addition, all commenters to the proposed rule who commented on recycling issues supported this action.

As indicated in the proposal, the Agency is including the following additional materials in the recycling exclusion under 40 CFR 261.4(a)(10): K060, K087, K141, K142, K143, K144, K145, K147, K148, and wastes from the coke by-products industry that are hazardous only because they exhibit the TC. The exclusion does not apply if other hazardous wastes (e.g., spent solvents, TC hazardous wastes from other industries, etc.) are mixed with the above-mentioned residues or charged to a coke oven. If the "no land

disposal" condition of the exclusion is met, the wastes listed above are not solid wastes and, thus, not hazardous wastes, when they are recycled to coke ovens or tar recovery processes, or mixed with coal tar. The effect of this exclusion from the definition of solid waste is to remove these coke by- product wastes from RCRA control when they are recycled within the coking and tar refining industries. In other words, as long as coke by-product wastes are being recycled within the terms of the exclusion at 40 CFR 261.4(a)(10), no permit is needed for the storage or management of these wastes, no manifest is required for transport of these wastes, and so on. It is important to note, however, that certain recordkeeping requirements under the Land Disposal Restrictions program still attach to wastes that have been excluded from RCRA regulation. These requirements are discussed later in this preamble in the section entitled Interaction with Other Regulations.

C. Industry Overview

In the preamble to the proposed rule, EPA presented a description of the coking and tar refining industries, along with descriptions and quantities of wastes generated and descriptions of waste management practices employed for the wastes. This information remains the most recent and accurate information on the industry available to EPA and was relied upon in developing the final rule. The industry statistics are based on 1987 data which indicate that 21 domestic companies produced approximately 28 million metric tons of coke at 34 plants. Updated information provided by an industry trade association indicates that there are currently 32 active plants which are divided into two segments: Captive coke producers (22 plants) and merchant coke producers (10 plants). The 22 captive coke plants are operated by major iron and steel companies and produce blast furnace coke that is generally used on-sit or within the same company at integrated iron and steel plants to produce steel.

The 10 merchant coke plants generally produce blast furnace coke for sale to iron and steel companies, and metallurgical coke for sale to iron and steel foundries and to other metallurgical and chemical industries. A list of active plants is provided in the Background Document for today's rule.

In 1985, about 1,200 million liters of coal tar, 3.7 billion liters of sodium phenolate, 7,000 metric tons of naphthalene, and 580 million liters of light oil were produced as coke by-products. The crude coal tar is sold to independent tar refiners for the production of other coal tar by-products.

The 1985 production of these coal tar by-products was approximately 45 million liters of light oil, 500 million liters of creosote oil, 550 million liters of refined tar (excluding tar used as road tar), and 470,000 metric tons of coal tar pitch. More recent data indicate that domestic coke plants produced 256,823,533 gallons of crude coal tar in 1991.

Table 1 presents estimates, based on data collected from 1985 to 1987, of the quantities of waste generated from the production of coke and coke by-products, recovery of coke by-products, and coal tar refining. The assumptions and data used to generate these estimates are provided in the Background Document for this rule. Tables containing the waste management practices used for these wastes and the percentage of facilities employing each waste management practice are also presented in the Background Document.

Overall, at least 40 percent of the facilities who reported waste

management practices in the 1985 RCRA 3007 questionnaire recycle the wastes and products addressed in today's rule.

Table 1.--Estimated Nationwide Waste Quantities (Mt/Yr)

	Waste Quantity
K141--Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations)	3,100
K142--Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal	10,000
K143--Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal	4,500
K144--Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal	900
K145--Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	450
K147--Tar storage tank residues from coal tar refining	2,800
K148--Residues from coal tar distillation, including, but not limited to, still bottoms	270

D. Process and Waste Descriptions

1. The Coking Process

Coke is manufactured by anaerobic carbonization of coal in high temperature (900-1200 deg.C) coke ovens. Coke is the main product and is used as a reductant in the blast furnaces used in iron manufacturing. The coke oven gas (COG) is processed through recovery units to separate other such saleable by- products as coal tar, light oil, and ammonia liquor from the gas stream and the remainder of the gas stream is then used as fuel.

Figure 1 is a general process flow diagram that indicates the sources of by-product residues that are the subject of this rule. During the recovery of coal tar from the coke oven gas, tar residue accumulates in the tar decanter tank (K087), the tar collection sump (K141) and at the bottom of tar storage tanks (K147). The light oil recovery process generates wash and light oil residues (K143) in the scrubber tower, the stripping still, and in a decanter or centrifuge used to separate a polymerized resin referred to as wash oil muck from the recycled wash oil. A wastewater collecting sump, used to separate the oil and water in wastewaters from the light oil recovery area, generates wastewater sump residues (K144). Naphthalene recovery residues (K145) are generated in the final cooling tower, naphthalene separator and collection sumps. Facilities may also use an ammonia still, in which a "lime sludge" accumulates (K060).

BILLING CODE 6560-50-M

BILLING CODE 6560-50-C

2. The Tar Refining Process

Coal tar is typically refined to produce commercial and industrial products including pitch, creosote oil, refined tar, naphthalene, and commercial materials such as bitumen. Coal tar is refined by either batch

or continuous distillation. The heavy liquid components such as pitch and creosote are sent to a distillation column for further refining. The pitch, which is generated at the softening point of tar, is discharged from the still, cooled, extruded, and poured into barrels or other containers for storage.

The coal tar refining plant may produce two process residuals that will be added to the list of wastes from specific sources. The first process residual is generated at the bottom of the coal tar storage tanks (K147). Based on the information provided to the Agency during the industry study and public comment periods, this residual is generated infrequently. Large volumes of tar storage tank bottoms were recently generated during the tank clean-outs required for compliance with the benzene NESHAPs rule. However, mechanical mixers or air agitators were installed at several plants to prevent future formation of this residual. The same residual is generated in coal tar storage tanks at coking facilities.

The second process waste from the refining plant, identified as K148, is high boiling-point residue, which accumulates on the fire tubes and at the bottom of the batch still and must be removed periodically. These tar refining residuals are either recycled to coke ovens at the same or adjacent facilities, or sold to other coking facilities as products. Tar distillation residues may also be recycled to the distillation tank along with crude coal tar.

In addition to the above, a sludge is often formed from the treatment of tar refining wastewaters. This sludge carries the K035 listing.

E. Wastes Included in Today's Listing

Today's rule adds seven wastes to the list of hazardous wastes from specific sources (40 CFR 261.32). These listings encompass all of the same materials described and proposed for listing in the proposed rule. The seven wastes added to Sec. 261.32, K141, K142, K143, K144, K145, K147, and K148, retain the same scope as the corresponding proposed listed wastes. The listing descriptions also remain the same as those proposed, with the exception of the description of K144 wastes, which are now more accurately called "wastewater sump residues" rather than "wastewater treatment sludges." (For further explanation, see Footnote 1 to Table 6 below.) This change is based on information and comments received from the coke by-products industry. K144 wastes include the same materials as those originally proposed.

Descriptions of the manufacturing process and sources of the wastes are provided earlier in this preamble and are presented in greater detail in the Background Document for today's rule and in the preamble to the July 1991 proposed rule. EPA also provides data describing the composition of the wastes being listed in each of these documents.

Two commenters requested that more specific language be used to describe the listed wastes. The commenters requested that terms such as "including but not limited to" be deleted from the waste descriptions. These terms, however, are necessary in describing these wastes because the manufacturing processes generating the wastes are not always identical. If the Agency limited the scope of the listings to residues generated only by the specific unit operations shown in the generic process flow diagram, then

residues of similar chemical composition that are generated from the same stage of the coke by-product recovery operation may not be encompassed by the listing. For example, wash oil circulation sludge generally has the same chemical composition as residues from wash oil recovery units when used to wash light oil and, therefore, would be listed as K143. However, in certain instances, wash oil may be used to wash other by-products such as naphthalene, and the wash oil circulation sludge would then be listed as K145. This preamble further clarifies the scope of the listings by providing a table that contains each of the coke by-product wastes specified in the proposed Consent Decree which resolves issues raised in EDF vs. Reilly, Civ. No. 89-0598 (D.D.C.) along with the appropriate hazardous waste listing numbers (see Summary of Public Comments and Responses section).

As proposed, EPA is finalizing the determination not to list wastewaters from coking and tar refining operations. One commenter believed that these wastes should be listed as hazardous wastes because certain hazardous constituents were found at concentrations exceeding the health-based levels by over six orders of magnitude. As stated in the preamble to the proposed rule, EPA has found that these constituents are not typically and frequently found in the wastewaters at quantifiable levels. For example, constituents other than benzene that were identified as concerns by the commenter were either detected below the detection limit or not detected in at least 75% of the coking and tar refining wastewater samples collected by EPA. Since benzene is the only constituent of concern that is typically and frequently present at concentrations of regulatory concern and is a contaminant that is regulated by both the Toxicity Characteristic, EPA believes that wastewaters will be adequately regulated by both the TC rule and Effluent Guidelines for Industrial Point Source Discharges under the Clean Water Act. Any wastewater that exhibits the TC and is land disposed prior to receiving adequate treatment (or release through the Clean Water Act programs) must comply with all RCRA requirements.

Raw wastewater releases are unlikely for several reasons. First, a statutory ban exists on the disposal of liquids in landfills. Also, all facilities in this industry have closed their surface impoundments and lagoons in favor of more modern treatment plants. While problems existed in the past with wastewaters being mixed with other process wastes and causing environmental problems, such releases are less likely to happen, and, if they did, would cause the released materials to be a hazardous waste mixture (as described on page 35780 of the July 26, 1991 proposal). Lastly, the wastewater treatment plants at the coke by-products facilities have been or are being upgraded in compliance with the Clean Water Act and other EPA regulatory programs. Many of the upgraded plants use biological treatment process that may degrade both benzene and PAHs of concern below levels of regulatory concern.

One commenter stated that EPA is required to list a waste as hazardous if it exhibits any of the hazardous waste characteristics and cited 40 CFR 261.11(a) (1). EPA would like to clarify here that when considering a solid waste for listing, the Administrator may list a waste on the basis that it exhibits a hazardous waste characteristic but this is not a requirement. Indeed, a policy that required all wastes exhibiting a characteristic to be listed would render subpart C of part 261 meaningless. Section 261.11 reads, "The Administrator shall list a solid waste as a hazardous waste only upon determining that the solid waste meets one of the following criteria: (1) It exhibits any of the characteristics of hazardous waste

identified in Subpart C * * * while the Agency has the authority to list a waste based solely on this criterion, the language of this section does not mean that the Agency is required to list upon determining that a waste exhibits a characteristic.

F. Basis for Listing

As stated in the preamble to the proposed rule, the Agency has based today's listing determination on the criteria set forth in 40 CFR 261.11(a)(3). In the preamble to the July 1991 proposed rule, EPA provided a detailed discussion of the basis for listing K141-L145, K147 and K148. The discussion included quantitative data on the concentrations of constituents of concern found in the wastes, summaries of the known health effects of the constituents of concern, data describing the relative persistence and mobility of the constituents of concern, mismanagement case studies, and an analysis of the relative hazards posed by the wastes. In general, the information presented in the preamble to the proposed rule remains the most current available to EPA and serves as the basis for today's listings for K141 through K145, K147, and K148.

In the preamble to the proposed rule, EPA provided a list of constituents found to be present in the wastes that were not selected as constituents of concern at the time of proposal, and stated that additional constituents may be added upon promulgation based upon the consideration of comments and/or additional data (56 FR 35772). After reviewing the analytical data presented in the Background Document to the proposed rule and the current health effects information on the constituents present in the wastes, one additional constituent that appeared on that list, chrysene, has been selected as a constituent of concern. As stated in the preamble to the proposed rule, the addition of chrysene to the list of constituents of concern has no effect on the Agency's ultimate decision to list these wastes as hazardous. Tables 2 and 3 are revised versions of Tables 5, 6, and 7 from the preamble to the proposed rule; they present the selected constituents of concerns in each of the newly listed wastes, and the range of measured concentrations of constituents in coke by-products and tar refining products.

In addition, the health effects information for many of the constituents of concern has been revised. Indeno (1, 2, 3-cd)pyrene has been raised from a possible human carcinogen (Class C) to a probable human carcinogen (Class B), and the qualitative information upon which this change was based is provided on EPA's Integrated Risk Information System (IRIS). Because the health- effects information on IRIS is peer reviewed by inter-Agency workgroups that reach consensus decisions regarding the data, the new carcinogen classification is considered scientifically sound. (More information regarding this change and IRIS is included in the background document to today's rule.)

Also, the health-based limits have been revised slightly for benzo(a)pyrene, benzo(b and k)fluoranthene, indeno(1, 2, 3-cd)pyrene, benz(a)anthracene, and naphthalene. In all cases, the change is two orders of magnitude or less and does not affect the results of the listing analyses which indicate that the wastes listed in today's rulemaking should be listed as hazardous. The specific changes are as follows:

Table 2.--Constituents of Concern

Constituents	K141	K142	K143	K144	K145	K147	K148
Benzene	X	X	X	X	X	X	
Benz(a)anthracene	X	X	X	X	X	X	X
Benzo(a)pyrene	X	X	X	X	X	X	X
Benzo(b and k)fluoranthene	X	X	X	X	X	X	X
Chrysene	X	X	X	X	X	X	X
Dibenz(a,h)anthracene	X	X		X	X	X	X
Indeno(1,2,3-cd)pyrene	X	X		X		X	X
Naphthalene	X	X	X	X	X	X	

Note: X indicates that the constituent has been found to be present at levels of regulatory concern in the individual waste stream.

Table 3.--Coke and Coke by-Product Wastes: Constituents of Concern and Range of Measured Concentrations
(All Values in PPM)

		K141 Process residues from coal tar recoverya	K142 Tar Storage Tank Residues	
Line No.	Constituent		Range	Avg.
1.	Benzene	3,850	230-290	260
2.	Benz(a)anthracene	7,850	5,400-7,400	6,600
3.	Benzo(a)pyrene	8,450	4,500-8,300	6,500
4.	Benzo(b)fluoranthenec	5,450	5,200-10,000	7,500
5.	Benzo (K) fluoranthene c			
6.	Chrysene	7,950	4,000-7,400	6,000
7.	Dibenz(a,h)anthracene	1,750	720-1,600	1,000
8.	Indeno (1,2,3-cd)pyrene	6,150	2,000-4,100	2,900
9.	Naphthalene	95,000	32,000-84,000	55,000

(...Table continues...)

	K143 Residues from light oil processing		K144 Wastewater treatment sludges from light oil refining		K145 Residues from naphthalene collection and recovery	
Line No.	Range	Avg.	Range	Avg.	Range	Avg.
1.	39-8,500	1,600	200-14,000	3,000	120-3,000	1,000
2.	ND-320 b69		<15-140 b68		<3-<96 b22	
3.	<10-130 b34		<20-130 b65		ND-22 b7	
4.	<5-230 b59		<15-220 b75		2.3-48 b26	
5.						
6.	<5-250 b59		<15-120 b66		2.7-<96 b22	
7.	ND-<500 b38		7<-<61 b15		ND-5 b1.3	
8.	ND-<500 b40		<15-77 b37		ND-9.9 b4	
9.	1,400-480,000	52,000	360-53,000	27,000	5.7-300,000	140,000

a Only one data point exists. However, this residual is presumed to be comparable in composition to tar decanter sludge (listed waste K087).

b Arithmetic averages are based on one half the quantitation limit for constituents detected below quantitation limits and zero for constituents no detected (ND).

c GC peak resolution was not adequate to provide quantitation of the two

isomers individually. The results shown are the sum of the two isomers.
Source: Background Document.

Constituent	K147 Tar storage tank residues Range	Avg.	K148 Tar Distillation residuals Range	Avg.
Benzene	230-290	260	NA	NA
Benz(a)anthracene	5,400-7,400	6,600	160-10,000	4,500
Benzo(a)pyrene	4,500-8,300	6,500	330-7,300	3,600
Benzo(b)fluoranthenea	5,200-10,000	7,500	150-13,000	6,100
Benzo(k)fluoranthenea				
Chrysene	4,000-7,400	6,000	240-7,900	3,800
Dibenz(a,h)anthracene	720-1,600	1,000	36-1,400	800
Indeno(1,2,3-cd)pyrene	2,000-4,100	2,900	110-3,300	1,700
Naphthalene	32,000-84,000	55,000	17-2,400	850

a GC peak resolution was not adequate to provide quantitation of the two isomers individually. The results shown are the sum of the two isomers.
NA--Constituent not analyzed (volatiles were not anticipated in still bottoms that have been heated to high temperatures).
Source: Background.

On July 17, 1992, (57 FR 31776) the Agency promulgated an MCL of 2x10-4 mg/L for benzo(a)pyrene. As indicated in the preamble to the proposed rule, EPA uses promulgated Maximum Contamination Limits (MCLs) when available.
Therefore, the newly finalized MCL is being used in today's rule.

In addition, in April 1992, the Agency verified a risk specific dose (RSD) of 1.7x10-7 mg/kg/day for benzo(a)pyrene. This RSD was then used to determine health-based numbers for benzo (b and k) fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene, which are calculated relative to the potency of benzo(a)pyrene. More information regarding these calculations and the reasons for the adjustments to them is provided in the background document to today's rule.

The same study used as the basis for the proposed level of concern for naphthalene is used for the level of concern used in today's rule. However, the revised provisional oral RfD for naphthalene was raised one order of magnitude (from 0.004 to 0.04) when the uncertainty factor was decreased from 10,000 to 1,000 (since the proposal). The revised provisional RfD is listed in the Annual 1992 Health Effects Assessment Summary Tables (HEAST). For more information on the changes in the health-based numbers for naphthalene, see the Background Document to today's rule.

A 1986 reference was the source for the proposed RSD of 3.2x10-7 mg/kg/day for benz(a)anthracene. However, a new 1988 source was identified which indicates a proposed RSD of 4.7x10-8 mg/kg/day. All of these new references are included in the docket to today's rule.

The Agency believes that these changes have no effect on the conclusion that the constituents of concern in the wastes being listed today are systemic toxicants and/or carcinogens present in concentrations capable of causing adverse health effects and therefore have no effect on today's ultimate listing decision. The constituents of concern are present at high enough concentrations to exceed both the proposed levels of concern, most of which were higher than the concentrations of concern used in today's

rule, and those used in today's rule.

One commenter requested that the Agency base the health-based concentration limits on proposed MCLs, instead of RSDs, when available. Historically, final listing determinations have not been based on proposed health-based numbers.

The Agency has recently proposed, in another rulemaking, the use of proposed MCLs to establish jurisdictional boundaries of RCRA subtitle C. (See 57 FR 21450-21522, May 20, 1992.) Since that issue remains unresolved, the Agency chooses not to use proposed MCLs for this rulemaking. Moreover, the adoption of proposed MCLs for the applicable constituents of concerns in today's rule would not change the overall conclusion regarding the hazard posed by the wastes due to the extremely high concentrations of the constituents of concern in the wastes. Thus, as shown in Tables 4-4F and 5, the health-based limits for the constituents of concern continue to rely on Reference Doses (RfDs), Risk-Specific Doses (RSDs), and final MCLs. For more information on the adoption of MCLs for benzo(a)pyrene and not other PAHs, see the Phase V drinking water rule, published July 17, 1992 (57 FR 31776).

Tables 4 through 4F are revised versions of Tables 8 through 8F of the proposed rule. They summarize the Agency's analysis of the hazards posed by the constituents of concern present in the listed wastes and products by presenting the average concentrations of the previous and additional hazardous constituents in the wastes, the updated health-based water concentration limits and updated hypothetical environmental exposure factors.

In this analysis, EPA projected ground-water concentrations for the constituents of concern based on average waste concentrations (rather than maximum concentrations) and assuming three dilution and attenuation factors: 100, 1,000, and 10,000. These three levels encompass a broad range of dilution/attenuation factors (DAFs). The drinking water well concentrations calculated for dilution/attenuation levels of 100, 1,000, and 10,000 make the assumption that the concentration of each constituent of concern in the well water would be 1 percent, 0.1 percent, and 0.01 percent, respectively, of its average concentration in the waste. The calculated ratios of estimated drinking water concentration values to health-based water concentration-limit values presented in these tables serve to illustrate that, under the assumptions used here, even if only 0.01 percent of the average constituent levels in the wastes (i.e., HEEF of 10,000) reaches environmental receptors, the exposure concentrations could exceed the health-based levels of concern by up to five orders of magnitude.

Table 4.--Basis for Listing: Health Effects of the Constituents of Concern in K141

Line No.	Hazardous constituent	Average waste conc. detected (ppm)	Health-based water concentration limits (ppm)	Basic a
1.	Benzene	3,850	5x10-3	MCL (A)
2.	Benz(a)anthracene	7,850	2x10-6	RSD (B2)
3.	Benzo(a)pyrene	8,450	2x10-4	MCL (B2)
4.	Benzo(b)fluoranthene, Benzo(k)fluoranthene d	5,450	4x10-5	RSD (B2)
5.	Chrysene	7,950	5x10-4	RSD (B2)
6.	Dibenz(a,h)anthracene	1,750	7x10-7	RSD (B2)
7.	Indeno(1,2,3-cd)pyrene	6,150	4x10-4	RSD (B2)

8.	Naphthalene			95,000		1	RfD

(...Table continues...)

Line No.	Estimated conc.b (ppm) HEEF 100	HEEF 1000	HEEF 10,000	Drinking Well based limit ratiosc HEEF 100	HEEF 1000	Conc. to Health-- HEEF 10,000
1.	38.5	3.85	0.385	7,700	770	77
2.	78.5	7.85	0.785	39,000,000	3,900,000	390,000
3.	84.5	8.45	0.845	420,000	42,000	4,200
4.	54.5	5.45	0.545	1,400,000	140,000	14,000
5.	79.5	7.95	0.795	160,000	16,000	1,600
6.	17.5	1.75	0.175	25,000,000	2,500,000	250,000
7.	61.5	6.15	0.615	150,000	15,000	1,500
8.	950	95	9.5	950	95	9.5

a Reference Dose (RfD), Risk-Specific Dose (RSD), and Maximum Contaminant Level (MCL) are explained in the Background Document to today's rule, as are the classes of carcinogens. Classes A and B carcinogens are based on exposure limits at a 10-6 risk level.

b Calculated for three hypothetical environmental exposure factors (HEEFs).

c Ratio obtained by dividing values in estimated drinking well concentration column by values in health-based, water concentration limit column for all three HEEFs.

d GC peak resolution was not adequate to provide quantitation of the two isomers individually. The results show the sum of the two isomers.

Source: Background Document.

Table 4A.--Basis for Listing: Health Effects of the Constituents of Concern in K142

Line No.	Hazardous constituent	Average waste conc. detected (ppm)	Health-based water concentration limits (ppm)	Basis a
1.	Benzene	260	5x10-3	MCL (A)
2.	Benz(a)anthracene	6,600	2x10-6	RSD (B2)
3.	Benzo(a)pyrene	6,500	2x10-4	MCL (B2)
4.	Benzo(b)fluoranthene, Benzo(k)fluoranthene d	7,500	4x10-5	RSD (B2)
5.	Chrysene	6,000	5x10-4	RSD (B2)
6.	Dibenz(a,h)anthracene	1,000	7x10-7	RSD (B2)
7.	Indenol(1,2,3-cd)pyrene	2,900	4x10-4	RSD (B2)
8.	Naphthalene	55,000		1 RfD

(...Table continues...)

Line No.	Estimated conc.b (ppm) HEEF 100	HEEF 1000	HEEF 10,000	Drinking Well based limit ratios c HEEF 100	HEEF 1000	Conc. to Health-- HEEF 10,000
1.	2.6	0.26	0.026	520	52	5
2.	66	6.6	0.66	33,000,000	3,300,000	330,000
3.	65	6.5	0.65	330,000	33,000	3,300
4.	75	7.5	0.75	1,900,000	190,000	19,000
5.	60	6	0.6	120,000	12,000	1,200
6.	10	1	0.1	14,000,000	1,400,000	140,000
7.	29	2.9	0.29	73,000	7,300	730

8. 550 55 5.5 550 55 5.5

a Reference Dose (RfD), Risk-Specific Dose (RSD), and Maximum Contaminant Level (MCL) are explained in the Background Document to today's rule, as are the classes of carcinogens. Class A and B carcinogens are based on exposure limits at a 10-6 risk level.

b Calculated for three hypothetical environmental exposure factors (HEEFs).

c Ratio obtained by dividing values in estimated drinking well concentration column by values in health-based, water concentration limit column for all three HEEFs.

d GC peak resolution was not adequate to provide quantitation of the two isomers individually. The results show the sum of the two isomers.

Source: Background Document.

Table 4B.--Basis for Listing: Health Effects of the Constituents of Concern in K143

Line No.	Hazardous constituent	Average waste conc. detected (ppm)	Health-based water concentration limits (ppm)	Basis a
1.	Benzene	1,600	5x10-3	MCL (A)
2.	Benz(a)anthracene	69	2x10-6	RSD (B2)
3.	Benzo(a)pyrene	34	2x10-4	MCL(B2)
4.	Benzo(b)fluoranthene, Benzo(k)fluoranthene d	59	4x10-5	RSD (B2)
5.	Chrysene	59	5x10-4	RSD (B2)
6.	Naphthalene	52,000	1	RfD

(...Table continues...)

Line No.	Estimated HEEF 100	Drinking conc.b HEEF 1000	Well (ppm) HEEF 10,000	Calculated based limit HEEF 100	Conc. to Ratios c HEEF 1000	Health-- HEEF 10,000
1.	16	1.6	0.16	3,200	320	32
2.	0.69	0.069	0.007	350,000	35,000	3,500
3.	0.34	0.034	0.003	1,700	170	17
4.	0.59	0.059	0.006	15,000	1,500	150
5.	0.59	0.059	0.006	1,200	120	1.2
6.	520	52	5.2	520	52	5.2

a Reference Dose (RfD), Risk-Specific Dose (RSD), and Maximum Contaminant Level (MCL) are explained in the Background Document to today's rule, as are the classes of carcinogens. Class A and B carcinogens are based on exposure limits at a 10-6 risk level.

b Calculated for three hypothetical environmental exposure factors (HEEFs).

c Ratio obtained by dividing values in estimated drinking well concentration column by values in health-based, water concentration limit column for all three HEEFs.

d GC peak resolution was not adequate to provide quantitation of the two isomers individually. The results show the sum of the two isomers.

Source: Background Document.

Table 4C.--Basis for Listing: Health Effects of the Constituents of Concern in K144

Line No.	Hazardous constituent	Average waste conc. detected (ppm)	Health-based water concentration limits (ppm)	Basis a
1.	Benzene	3,000	5x10-3	MCL (A)
2.	Benz(a)anthracene	68	2x10-6	RSD (B2)
3.	Benzo(a)pyrene	65	2x10-4	MCL (B2)
4.	Benzo(b)fluoranthene, Benzo(k)fluoranthene d	75	4x10-5	RSD (B2)
5.	Chrysene	61	5x10-4	RSD (B2)
6.	Dibenz(a,h)anthracene	15	7x10-7	RSD (B2)
7.	Indeno(1,2,3-cd)pyrene	37	4x10-4	RSD (B2)
8.	Naphthalene	27,000	1	RfD

(...Table continues...)

Line No.	Estimated Drinking conc.b HEEF 100	Well (ppm) HEEF 1000	Calculated based limit HEEF 10,000	Conc. to ratios c HEEF 100	HEEF 1000	Health-- HEEF 10,000
1.	30	3.0	0.30	6,000	600	60
2.	0.68	0.068	0.007	340,000	34,000	3,500
3.	0.65	0.065	0.007	3,300	330	33
4.	0.75	0.075	0.008	19,000	1,900	200
5.	0.61	0.061	0.006	1,200	120	12
6.	0.15	0.015	0.002	210,000	21,000	2,100
7.	0.37	0.037	0.0037	930	93	9.3
8.	270	27	2.7	2,70	27	2.7

a Reference Dose (RfD), Risk-Specific Dose (RSD), and Maximum Contaminant Level (MCL) are explained in the Background Document to today's rule, as are the classes of carcinogens. Class A and B carcinogens are based on exposure limits at a 10-6 risk level.
b Calculated for three hypothetical environmental exposure factors (HEEFs).
c Ratio obtained by dividing values in estimated drinking well concentration column by values in health-based, water concentration limit column for all three HEEFs.
d GC peak resolution was not adequate to provide quantitation of the two isomers individually. The results show the sum of the two isomers.
Source: Background Document.

Table 4D.--Basis for Listing: Health Effects of the Constituents of Concern in K145

Line No.	Hazardous constituent	Average waste conc. detected (ppm)	Health-based water concentration limits (ppm)	Basis a
1.	Benzene	1,000	5x10-3	MCL (A)
2.	Benz(a)anthracene	22	2x10-6	RSD (B2)
3.	Benzo(a)pyrene	7	2x10-4	MCL (B2)
4.	Benzo(b)fluoranthene,	26	4x10-5	RSD (B2)

Benzo(k)fluoranthene d
5. Dibenz(a,h)anthracene 15 7x10-7 RSD (B2)
6. Naphthalene 140,000 1 RfD

(...Table continues...)

Line No.	Estimated HEEF 100	Drinking conc.b HEEF 1000	Well (ppm) HEEF 10,000	Calculated based limit HEEF 100	Conc. to ratios c HEEF 1000	Health-- HEEF 10,000
1.	10	1.0	0.10	2,000	200	20
2.	0.22	0.022	0.002	110,000	11,000	1,000
3.	0.07	0.007	0.001	350	350	3.5
4.	0.26	0.026	0.0026	6,500	650	65
5.	0.15	0.015	0.002	210,000	21,000	2,100
6.	1,400	140	14	1,400	140	14

a Reference Dose (RfD), Risk-Specific Dose (RSD), and Maximum Contaminant Level (MCL) are explained in the Background Document to today's rule, as are the classes of carcinogens. Class A and B carcinogens are based on exposure limits at a 10-6 risk level.
b Calculated for three hypothetical environmental exposure factors (HEEFs).
c Ratio obtained by dividing values in estimated drinking well concentration column by values in health-based, water concentration limit column for all three HEEFs.
d GC peak resolution was not adequate to provide quantitation of the two isomers individually. The results show the sum of the two isomers.
Source: Background Document.

Table 4E.--Basis for Listing: Health Effects of the Constituents of Concern in K147

Line No.	Hazardous Constituent	Average waste conc. detected (ppm)	Health-based water concentration limits (ppm)	Basisa
1.	Benzene	260	5x10-3	MCL (A)
2.	Benz(a)anthracene	6,600	2x10-6	RSD (B2)
3.	Benzo(a)pyrene	6,500	2x10-4	MCL (B2)
4.	Benzo(b)fluoranthene, Benzo(k)fluoranthened	7,500	4x10-5	RSD (B2)
5.	Chrysene	6,000	5x10-4	RSD (B2)
6.	Dibenz(a,h)anthracene	1,000	7x10-7	RSD (B2)
7.	Indeno(1,2,3-cd)pyrene	2,900	4x10-4	RSD (B2)
8.	Naphthalene	55,000	1	RfD

(...Table continues...)

Line No.	Estimated HEEF 100	Drinking Conc.b (ppm) HEEF 1000	Well HEEF 10,000	Calculated based limit HEEF 100	Conc. to ratiosc HEEF 1000	Health-- HEEF 10,000
1.	2.6	0.26	0.026	520	52	5
2.	66	6.6	0.66	33,000,000	3,300,000	330,000
3.	65	6.5	0.65	330,000	3,300	330
4.	75	7.5	0.75	1,900,000	190,000	19,000
5.	60	6	0.6	120,000	12,000	1,200
6.	10	1	0.1	14,000,000	1,400,000	140,000

7. 29 2.9 0.29 73,000 7,300 730
8. 550 55 5.5 550 55 5.5
aReference Dose (RfD), Risk-Specific Dose (RSD), and Maximum Contaminant Level (MCL) are explained in the Background Document to today's rule, as are the classes of carcinogens. Class A and B carcinogens are based on exposure limits at a 106 risk level.
bCalculated for three hypothetical environmental exposure factors (HEEFs).
cRatio obtained by dividing values in estimated drinking well concentration column by values in health-based, water concentration limit column for all three HEEFs.
dGC peak resolution was not adequate to provide quantitation of the two isomers individually. The results show the sum of the two isomers.
Source: Background Document.

Table 4F.--Basis for Listing: Health Effects of the Constituents of Concern in K148

Line No.	Hazardous constituent	Averge waste conc. detected (ppm)	Health-based water concentration limits (ppm)	Basis a
1.	Benz(a)anthracene	4,500	2x10-6	RSD (B2)
2.	Benzo(a)pyrene	3,600	2x10-4	MCL (B2)
3.	Benzo(b)fluoranthene, Benzo(k)fluoranthene d	6,100	4x10-5	RSD (B2)
4.	Chrysene	3,800	5x10-4	RSD (B2)
5.	Dibenz(a,h)anthracene	800	7x10-7	RSD (B2)
6.	Indeno(1,2,3-cd)pyrene	1,700	4x10-4	RSD (C)

(...Table continues...)

Line No.	Estimated conc.b (ppm) HEEF 100	HEEF 1,000	HEEF 10,000	Calculated Drinking Well conc. to Health-based limit ratios c HEEF 100	HEEF 1000	HEEF 10,000
1.	4.5	4.5	0.45	23,000,000	2,300,000	230,00
2.	3.6	3.6	0.36	180,000	18,000	1,800
3.	6.1	6.1	0.61	1,500,000	150,000	15,000
4.	3.8	3.8	0.38	76,000	7,600	760
5.	0.8	0.8	0.08	11,000,000	1,100,000	110,000
6.	1.7	1.7	0.17	43,000	4,300	430

aReference Dose (RfD), Risk-Specific Dose (RSD), and Maximum Contaminant Level (MCL) are explained in the Background Document to today's rule, as are the classes of carcinogens. Class A and B carcinogens are based on exposure limits at a 10-6 risk level.
bCalculated for three hypothetical environmental exposure factors (HEEFs).
cRatio obtained by dividing values in estimated drinking well concentration column by values in health-based, water concentration limit column for all three HEEFs.
dGC peak resolution was not adequate to provide quantitation of the two isomers individually. The results show the sum of the two isomers.
Source: Background Document.

Table 5 is a revised version of Table 9 from the preamble to the proposed rule. It presents updated data on the water solubilities and partition coefficients (log Kow and log Koc) which, as explained in the proposed rule, provide an indication of the mobility and persistence of the constituents of concern. Several comments were submitted regarding the mobility and persistence of the constituents of concern; these comments are addressed below in the Summary of Public Comments and Responses section of this preamble.

As stated in the preamble to the proposed rule, the Agency considered the use of leachability models and subsurface fate and transport models to estimate concentrations of these constituents in drinking water. Several commenters believed that these models should have been used to determine the potential hazards posed by these wastes and products, while other commenters support the Agency's decision not to use models. This issue is addressed further in the Summary of Public Comments and Responses section of this preamble. However, as stated in the preamble, EPA continues to believe that the limitations of the available models, when applied to wastes or products generated from coking and tar refining processes, underestimate the hazard posed by the wastes.

Table 5.--Ground-Water Mobility and Persistence of Constituents of Concern

Line No.	Constituents of concern	Health-based water concentration limits (ppm)
1.	Benzene	5x10-3
2.	Benzo(a) anthracene	2x10-6
3.	Benzo(a)pyrene	2x10-4
4.	Benzo(b) flouranthenec	4x10-5
5.	Benzo(k)fluoranthenec	4x10-5
6.	Chrysene	5x10-4
7.	Dibenz(a,h)anthracene	7x10-7
8.	Indeno(1,2,3-cd)pyrene	4x10-4
9.	Naphthalene	1

(...Table continues...)

Line No.	Water solubility (ppm)	Log Kowa	Log Koc b	Persistence
1.	1.78x103	2.13	1.92	low
2.	5.7x10-3	5.61	6.14	high
3.	3.8x10-3	6.04	5.60-6.29	high
4.	1.4x10-2	6.57	5.74	high
5.	5.5x10-4	6.85	6.64	high
6.	1.8x10-3	5.60	5.39	high
7.	5.0x10-4	6.50	6.22	high
8.	5.3x10-4	5.97	7.49	high
9.	3.17x101	3.30	3.04	high

Source: Montgomery, John H., Groundwater Chemicals Desk Reference, 1990.
aKow=Octanol-water partition coefficient.
bKoc=Soil sorption coefficient.
cThe health-based limit for benzo(b)fluoranthene was also applied to benzo(k)fluoranthene because the GC peak resolution was not adequate to provide quantitation of the isomers individually, and

therefore, the results are the sum of the two isomers.

III. Summary of Public Comments and Responses

A. Hazardous Waste Listings

Several comments were submitted regarding the technical basis used by the Agency in making the listing determinations on wastes generated from the coking and tar refining industries. Five commenters expressed concerns over leachability and mobility, ground-water fate and transport models, dilution and attenuation assumptions, carcinogenicity risk levels, persistence, and mismanagement case studies. The substance of these comments is explained in more detail below.

As explained in the preamble to the proposed rule, the Agency believes that the use of available leaching and subsurface fate and transport models is not appropriate for evaluating wastes and products generated during the production, recovery, and refining of coke by-products (see FR 35769). Three commenters disagree that these models (i.e., the Toxicity Characteristic Leaching Procedure (TCLP), the EPA Composite Model for Landfills (EPACML), and the Organic Leachate Model (OLM)) would underestimate the migration and transport of hazardous constituents to a drinking water source, as stated by the Agency.

Three commenters believe that the TCLP data should be considered as a basis for listing wastes generated from the coking and tar refining industries.
They believe that the leaching procedure results in higher leached concentrations of constituents than would occur in an actual environmental setting due to the method's particle size reduction step. One commenter supports the Agency's decision not to rely on TCLP data as a basis for listing because of the belief that the TCLP results in lower concentrations of constituents than would occur in the environment.

The Agency notes that the TCLP was developed by evaluating various laboratory methods that use different extraction media, extraction procedures, and liquid: solid ratios, and by determining the method which best obtained the concentrations of inorganic and organic constituents found in leachate from a simulated co-disposal landfill scenario. The simulated leachate was generated from large-scale columns, called lysimeters, packed with municipal waste and using this municipal waste leachate as a leaching fluid in studies on industrial wastes. Particle size reduction is used to simulate both the size reduction caused by the action of heavy landfill equipment and the degradation of structural integrity caused by repeated wet/ dry and freeze/thaw cycles. The laboratory conditions selected for the TCLP were those which best simulated the concentrations of inorganic and organic constituents in leachate from wastes co-disposed with municipal wastes in landfills.

The TCLP is a reasonable worst-case mismanagement scenario which the Agency has historically used to determine whether a waste should be classified as hazardous. However, for wastes that clog the glass fiber filter utilized in the TCLP, it has been shown that portions of wastes that are mobile in soil columns are often classified as solids by TCLP standards (RTI, 1988). As stated in July's proposed rule, the tarry samples analyzed in support of today's rulemaking were found to pose problems with sample

homogenization, filtration, and dispersion of solids in the leaching medium due to the varying amounts of tar in the wastes. Due to these analytical problems, the Agency maintains its belief that the TCLP results may underestimate the concentrations of constituents in leachates generated from the proposed wastes and should not be used as a basis for listing these wastes.

Three commenters also requested that EPA reconsider the use of the OLM and the EPACML. One commenter stated that the Agency is freely disregarding the TCLP and OLM results for this listing decision and that the models are not serving their mandated purpose. This commenter also stated that even though the EPACML may not account for immiscible flow conditions, the constituent concentrations at drinking water wells would not be underestimated. Another commenter stated that the OLM and EPACML apply more realistic environmental exposure factors (than the HEEFs) and that these models actually overestimate rather than underestimate constituent mobility because they do not account for biodegradation.

As described in the proposed rule, the EPACML estimates the dilution and attenuation of specific constituents during migration from leachate at the bottom of an unlined landfill (see U.S. EPA, "Background Document for EPA's Composite Landfill Model (EPACML)", 1990). If the Agency had applied the EPACML as it has in past rulemakings, leachate would have been diluted by a factor of 135 (at the 85th percentile of the probability distribution). (See 55 FR 11798, March 29, 1990). If hazardous constituent levels were to be reduced by that factor, the calculated constituent levels at the receptor sites would still exceed the health-based numbers by several orders of magnitude. However, the Agency notes that problems still exist in applying this model to these wastes. Due to the physical and chemical nature of the proposed listed wastes, immiscible flow may occur. Migration of constituents in the immiscible layer may be underestimated by a model that considers only homogenous flow. The underestimation occurs because the EPACML model does not account for the increased constituent concentrations that reach the receptor well in spiked patterns. The effect could be pronounced with wastes containing constituents in high concentrations. Because of these concerns, the Agency did not apply the EPACML to the proposed listed wastes.

The OLM is an empirical equation which was developed through application of modeling techniques to a data base of waste constituent concentrations and experimentally measured leachate concentrations (see 51 FR 41082 and 50 FR 48886). The OLM takes into account the concentrations of organic constituents and their aqueous solubility. EPA believes that, with the possible exception of tar distillation residues, the wastes proposed for listing may be subject to significant cosolvency effects. However, the OLM does not consider cosolvency effects and therefore tends to underestimate pollutant mobility in waste matrices where cosolvency may be significant. The Agency's response to the issue of biodegradation is discussed below.

Fate and transport models serve their intended purpose when applied to appropriate situations. Although the Agency prefers to use specific case studies and/or general modeling results to estimate potential risks from the mismanagement of wastes, the Agency is not required to use a particular model in evaluating the hazards posed by certain wastes. In this situation, however, due to the physical and chemical nature of the coke by-product wastes, the Agency selected an alternative approach to evaluate the potential hazard posed by these wastes. The Agency selected the use of

Hypothetical Environmental Exposure Factors (HEEFs), applied to average constituent concentrations found in the wastes, as an alternative approach to estimating the mobility of constituents from the waste under a wide range of environmental conditions. Using this approach, the Agency concludes that under a range of possible environmental conditions, these wastes would pose a substantial hazard to human health and the environment if mismanaged.

The Agency recognizes that the basis for listing wastes as hazardous since 1980 has not always explicitly included the use of models to predict concentrations of hazardous constituents at receptor sites. Rather, EPA has relied on a weight-of-evidence approach including such factors as damage incidents and probability of mismanagement. The recently proposed Hazardous Waste Identification Rule (HWIR, 57 FR 21450--21522, May 20, 1992) contains several options that, depending on which is promulgated, may change the Agency's procedure for the identification and listing of hazardous wastes in the future.

Two commenters claimed that the Agency did not consider biodegradation in its risk analysis and therefore, overestimated the concentration of constituents at the receptor well. The commenters provided general examples of successful biodegradation under aerobic conditions but did not provide data to support these claims or examples under anaerobic conditions. As stated in the proposed rule, the Agency believes that benzene and PAHs are not expected to biodegrade in ground water due to the relatively low biological activity present in the ground-water system. In addition, the persistence of the contaminants of concern is demonstrated by their presence in soil, ground water and surface water at the mismanagement sites described in the proposed rule.

One commenter submitted a journal article that describes a testing program of wells serving water-supply systems in California in which benzene is either undetected or detected in small concentrations at the majority of wells. The article suggests that, due to the large number of leaking underground storage tanks existing throughout the state, the absence of benzene near water-supply wells implies that biodegradation is occurring in the ground water.

The Agency agrees with the commenter only in that benzene generally biodegrades in ground waters with environments that are conducive to high biological activity (i.e., with high dissolved oxygen levels or acclimated microorganisms). The Agency notes benzene has been found to be present in the ground water at receptor wells of several contaminated sites described in the preamble of the proposed rule. For example, at a steel manufacturing plant operating in New York from 1920 through 1983 on Lake Erie, benzene was detected at concentrations up to 340 ppm at ground-water monitoring wells installed near two waste management areas, a pit and a landfill, which received coking wastes almost exclusively. Thus, the Agency maintains that benzene is a persistent and mobile constituent of concern and that wastes containing benzene in sufficiently high concentrations may pose a hazard when improperly managed.

Several commenters questioned the Agency's concern over cosolvency effects relative to the use of the OLM in evaluating the proposed wastes. The commenters believed that use of the OLM should be reconsidered because the Land Disposal Restrictions for solvents prevent the disposal of solvents in landfills. Therefore, the commenters believed that cosolvency effects should not be considered and that the proposed wastes should be evaluated

using the OLM. The Agency's concern over cosolvency effects is not directed at the commingling of the proposed listed wastes with listed solvents which must be treated prior to land disposal. The mobility of constituents may also be enhanced by the presence of organic phases that behave as solvents, such as benzene, from these and other codisposed hazardous wastes, or carboxylic acids from municipal waste leachates.

Two commenters criticized the use of and values for the Hypothetical Environmental Exposure Factors (HEEFs) because they believed the factor to be unrealistic as compared to the dilution and attenuation that occurs in actual environmental conditions. One commenter compared leaching and mobility factors generated by using the OLM and a dilution and attenuation factor (DAF) of 12 (which was generated by the EPACML) to the HEEFs used to support this listing determination and stated that the OLM factors are more realistic than the HEEFs because they are higher. Another commenter believed that the use of HEEFs is unrealistic because the estimated drinking well concentrations exceed the water solubilities for some constituents in some wastes and therefore, the constituents cannot be present in ground water at these concentrations. The commenters also stated that the Agency did not provide a scientific or sound basis for the HEEFs.

HEEFs are meant to be benchmarks of projected dilution and attenuation, and, as such, allow EPA to project potential exposure scenarios to see if health-based criteria can be exceeded under mismanagement conditions. The Agency believes these comparisons add to the weight-of-evidence approach used to determine whether or not a waste is potentially hazardous. In this case, several constituents exceed health-based criteria by several orders of magnitude at HEEFs used in this rulemaking to project dilution. (See discussion in "Basis for Listing," section II.F. above.) In addition, the Agency believes that the HEEFs should not be compared to values generated by the OLM since, as explained earlier, the OLM may significantly underestimate the constituent concentrations leached from these wastes due to the oily/ tarry nature of the wastes and the possibility of immiscible flow of migrating constituents. Although other methodologies (i.e., TCLP) tend to underestimate hazardous constituent concentrations in these wastes, they still may show unacceptably high constituent concentrations.

The Agency selected the use of HEEFs to evaluate the potential hazards associated with mismanagement of the proposed listed wastes because, as explained above, the models generally used to evaluate potential release, and fate and transport of hazardous constituents from landfills may not be appropriate for evaluating wastes from the coking and tar refining industries. As stated in the preamble to the proposed rule (56 FR 35769), "(t)he concentrations and toxicities of hazardous constituents in the wastes are of such a magnitude that, even under conservative assumptions regarding the potential for release of the constituents to the environment (use of HEEFs) and their subsequent transport in the subsurface environment, improper management of the wastes poses an unacceptable health risk."

This same range of 1.0 to 0.01 percent of the waste disposed reaching the point of exposure was also used as a basis for listing three categories of wastes from wood preserving operations that use chlorophenolic, creosote, and/or inorganic (arsenical and chromium) preservatives (see 55 FR 50450; December 6, 1990). The Agency has used a Dilution Attenuation Factor (DAF) of 100 for evaluating the mobility of constituents. The TCLP only uses a dilution and attenuation factor of 20. The Agency believes that a HEEF of 20 times 100 (or 2,000) would represent a way of projecting a benchmark of

the leachability and mobility of constituents from a waste. Therefore, a HEEF of 10,000, in comparison, could represent a conservative basis for evaluating the hazard posed by a waste considering the uncertainty associated with estimating dilution and attenuation. The Agency notes that each of the constituents of concern have waste concentrations that equal or exceed their health-based limits assuming a HEEF of 10,000.

The Agency relies on information regarding the solubility of a pure substance in water as one of several indicators of the mobility of a constituent in ground water. The Agency does not believe that water solubilities should be quantitatively compared to the solubility of the substance in ground water that has been contaminated by a mismanaged waste because this does not represent a pure substance in water. Solubilities are dependent on many factors, including the presence of an organic or oily phase. The phenomenon of constituents occurring in ground water at concentrations exceeding their water solubilities is not completely understood; however, it has been demonstrated at a number of contaminated sites, as presented in the mismanagement case studies of the proposed rule. In addition, even if the concentrations of these constituents in ground-water systems were limited to the solubility of the pure substance in water, the estimated drinking well concentrations would exceed the health-based water concentration limits by several orders of magnitude. Several commenters supported the Agency's position of evaluating constituent solubilities based on mismanagement cases at a site.

Based on the information in Tables 4-4F of todays's rule, the concentrations of hazardous constituents in the proposed listed wastes indicate that the wastes will have an adverse impact on human health and the environment. For example, even with an estimated leaching and mobility factor as high as 10,000, the exposure concentrations for each of the wastes are at least equal to the health-based level for at least one constituent of concern, and up to five orders of magnitude greater for another constituent of concern. This approach demonstrates that these wastes pose significant hazards to human health and the environment over a wide range of potential mobility and transport scenarios.

One commenter questioned the 10-5 and 10-6 risk levels used for carcinogens, stating that the National Contingency Plan under CERCLA uses 10- 4 to 10-6 risk levels as a basis for cleanup standards at Superfund sites.

When developing its preliminary remediation goals at Superfund sites, EPA uses 10-6 as a point of departure, which is considered the most desirable risk level, all things being equal, in establishing remediation goals (55 FR 8717; March 8, 1990). Site-specific factors that determine the overall risk to human health and the environment, remedy-specific factors that are based on the treatment technology, and potential future uses for the site and wastes are all factors used in determining the point within the range of 10-4 to 10-6 that defines the final cleanup standard. The Listing Program under RCRA, however, must evaluate certain wastes to determine if they are hazardous under all plausible mismanagement scenarios. The Agency does not rely on future use and site-specific information in its evaluation.

Therefore, the Agency believes that there is no basis to depart from the more protective risk factor of 10-6. The Agency notes, however, that even if the lower risk factor of 10-4 was used, the highly concentrate coke by-product wastes would still exceed the health-based limits (albeit for fewer constituents) and would still be listed today as hazardous wastes.

Another commenter claimed that the RfDs and RSDs used to develop the health-based concentration limits do not have a regulatory basis because they are not promulgated standards. The Agency does not "propose" health-based limits for promulgation as rules when listing wastes, as suggested by the commenter, because unlike Agency rules, these numbers do not prescribe behavior. Comparison of the health-based limits to the waste concentrations is only used in the initial listing process as a tool for demonstrating "(t)he nature of the toxicity presented by the constituent" in the waste, one of the criteria the Agency uses to make the listing determination (See 40 CFR 261.11(a)(3)(i)). These numbers serve as scientific guidance to the Agency in making its listing determinations. The RfDs and RSDs were presented in the proposed rule and made available for comment. The public had the opportunity to comment on the Agency's choice to use specific limits, the soundness of those limits and their underlying assumptions, and, most importantly, the Agency's overall assessment that those wastes possess toxic constituents in levels capable of causing harm to human health and the environment. However, only the waste listings are finalized; the health-based limits are used to support the listing decision. Additional information regarding the health- based limits and assumptions is provided in the background document to this rule.

Several comments were submitted regarding specific proposed listed wastes. Four commenters stated that K148, residues from coal tar distillation, does not exhibit leachability. Two commenters substantiated this claim with TCLP data and two other commenters related the leachability of K148 to that of asphalt because it has a higher melting point and asphalt binders decrease the leachability of arsenic wastes. As explained earlier in this section, the Agency does not believe that the TCLP can be used to determine the leachability of wastes such as K148 that are difficult to filter. In addition, the Agency did not receive any data to substantiate reduced leachability of K148, as compared to asphalt, particularly in the presence of other coking and/or tar refining wastes.

Several commenters questioned the relationship of the mismanagement case histories in the proposed rule (56 FR 35775) to the proposed listed wastes and believed that the Agency has not demonstrated that the wastes are capable of posing human health and environmental damage. One commenter believed that the Agency must cite actual human exposure in order to demonstrate that the wastes are capable of posing substantial harm. The Agency believes that, from the nature of the activities performed at these sites (i.e., primarily coking and tar refining operations), it is reasonable to conclude that the resulting environmental contamination was caused primarily by wastes generated from these operations. Due to the extent of contamination found at these sites relative to the health-based levels, the data are sufficient to demonstrate that potential exposure and harm exist, which is all that is required by 40 CFR 261.11(a)(3).

One commenter submitted detailed analytical concerns on one of the 13 analytical data reports used to support these listings. Overall, many of the comments addressed specific quality assurance/quality control steps in the analytical process. The Agency agrees with some of the quality concerns which address constituents that were not used to support the listing. However, most of the comments were either misinterpretations of the requirements of methods from "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods" (SW-846), or they addressed requirements of the Contract Laboratory Program (CLP) instead of the SW-846 methods. These

concerns are each addressed in detail and are available in the background document for today's rule. The Agency further notes that the data presented in the particular analytical data report in question support the listing of only one waste, and in addition, represent the lowest end of the concentration ranges found for the constituents of concern for this waste. EPA does not believe that any of the analytical comments affect the conclusions presented in today's rulemaking.

One commenter requested that the Agency clarify whether the K148 listing includes tar plant wastewater collection sump sludges. The Agency reviewed the specific waste streams that were originally grouped under the heading of tar plant wastewater collection sump sludges from the RCRA 3007 Questionnaires completed in 1985 and determined that these waste streams were incorrectly described as tar plant wastewater collection sludges and are already addressed in today's listings. Specifically, these waste streams were generated during coke by-product recovery operations rather than tar refining operations. Most of these waste streams are actually residues from sumps that collect wastewaters (i.e., from tar dewatering) generated from the tar recovery process and are encompassed by K141, process residues from the recovery of coal tar. One of the waste streams formerly grouped under the tar plant wastewater collection sump sludges heading is actually the tar product stream that is fed directly to the tar dehydrator.

The same commenter also requested that EPA discuss the final listing determination for each of the coke by-product wastes specified in the proposed Consent Decree which resolves issues raised in EDF vs. Reilly, Civ.
No. 89-0598 (D.D.C.). The Agency has reviewed the RCRA 3007 Questionnaires and accompanying process flow diagrams which were the original sources for the waste categories specified in the consent decree and has determined that each of these wastes is addressed fully in today's rule. Table 6 presents the listing determination for each of these wastes:

Table 6.--Listing Determinations on Wastes in Proposed Consent Decree

Waste stream proposed in consent decree	Listing determination
Process residues from coal tar recovery operations including tar collection sump residue	K141.
Tar storage tank residues	K147.
Residues from light oil plant processing units	K143.
Wastewater treatment sludges from light oil refining, including interceptor sump sludge	K144./1/
Residues from naphthalene collection and recovery	K145.
Wastewaters from coking and coke by-product operations	No listing.
Tar storage tank residues, still bottoms, and residues from coal tar distillation	K148.
Wastewaters from coal tar refining	No listing.
Benzol scrubber sludge	K143.
Oil/water separator effluent	No listing (wastewater).
Tar plant wastewater collection sump	

sludge K141 (see explanation in text above).

Naphthalene skimmer sludge	K145.
Wash oil circulation sludge and still residue	K143, or K145./2/
Primary light oil rectifier bottoms	K143.

/1/ This waste stream is referred to at some facilities as wastewater sump residues rather than wastewater treatment sludges. To avoid confusion with the wastewater treatment sludges produced after combined wastewater treatment (see Figure 1), the Agency has decided to adopt the former description. The proposed language describing the waste has, therefore, been revised accordingly.

/2/ When wash oil is used in light oil recovery, it is classified as K143, whereas when it is used in naphthalene recovery, it is classified as K145.

One commenter believed that the wastewater treatment sludge from coke by-product recovery wastewater should be listed as a hazardous waste. The commenter compared the data generated from tar refinery wastewaters in support of this rulemaking to data from the Best Demonstrated Available Technology (BDAT) Background Document for wastewater treatment sludges generated in the production of creosote, K035. The commenter concluded that the constituents of concern may be present at low or non-detected levels in tar refining wastewaters and still be found at high concentrations in the wastewater treatment sludges due to partitioning from the wastewaters.

The Agency does not believe it has enough information to make a listing determination at this time for these wastewater treatment sludges. As stated in the preamble to the proposed rule, EPA does not have analytical data on the concentrations of constituents of concern in these sludges. The Agency also does not believe that the data presented by the commenter justify investigation of these sludges. The sludge sample referred to by the commenter, which contained high concentrations of PAHs, was from the bottom oil layer of the oil/water separator, which precedes the wastewater treatment unit in the creosote wastewater treatment plant. The other K035 samples presented in the Background Document represent sludges generated following either biological treatment or solar evaporation and contain these constituents at concentrations two to three orders of magnitude lower than the bottom oil layer.

As stated earlier in this section, the constituents of concern were not typically and frequently found at levels of regulatory concern in the coke byproduct wastewaters and therefore, the Agency does not believe that they would be typically and frequently found at levels of regulatory concern in the wastewater treatment sludges. In addition, since a significant number of facilities use biological treatment to treat these wastewaters before discharging them to a POTW or through their NPDEs permitted outfall, even low concentrations of organics would be biologically consumed in the treatment process. Lastly, the PAHSs found in the tar refining wastewaters were generally found at concentrations an order of magnitude lower in the coke by- products wastewaters than in the creosote wastewaters. The Agency expects that concentrations of PAHs would, therefore, be lower in the coke by- products treatment sludges. This probably occurs because the heavier organic layers are removed prior to wastewater treatment in the coke

by-products recovery process.

B. Recycling Exclusion

The Agency received comments from several industry groups concerning the recycling exclusions proposed on July 26, 1991 (56 FR 35787) as Sec. 261.4(a)(10)-(12). All the commenters supported the general concept of an exclusion from the definition of solid waste for coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke.

Two commenters made reference to the September 14, 1991 effective date of the benzene by-product NESHAP rule as a major reason for the immediate promulgation of an exclusion at the point of generation. This compliance date forced coke oven operators to either retrofit or replace the storage vessels used for coke by-product residues. This action generated large amounts of residues that would have to be sent off-site for disposal if they were not excluded at the point they were generated. The large amounts generated would cause the facilities to exceed the 90-day accumulation limit and, thus, become subject to permitting standards. In addition to the NESHAP deadline, the effective date of the permitting standards for boilers and industrial furnaces (BIF rule; 56 FR 7134) was August 21, 1991. Absent some regulatory relief by that date, commenters asserted that coke oven operators would be forced to stop recycling coke by-product residues due to the technical infeasibility of meeting the destruction and removal standards imposed by the BIF rule.

In response to commenter concerns over the effective date of the BIF rule, because the Agency did not want to disrupt the legitimate recycling of coke by-product residues, and because large amounts of residues were being generated as a result of the NESHAPs rule, EPA issued an Administrative Stay on September 5, 1991 (56 FR 43874). The effect of this action was to stay the permitting standard of the BIF rule as they apply to coke ovens that process TC hazardous residues in the production of coke. In a later Federal Register notice (57 FR 27880), EPA nullified the stay by promulgating an exclusion from the definition of solid waste for coke by-product residues that exhibit the Toxicity Characteristic when they are recycled by being returned to coke ovens or mixed with coal tar. The Agency also clarified the scope of the exclusion by placing certain conditions on it (i.e., no land disposal).

One commenter (an industry trade association) requested that the exclusion for coke by-product residues be expanded to encompass materials burned as fuel in blast furnaces in iron and steelmaking operations. Because the residues contain the same constituents as the final coke product, the commenter contended that burning of coke by-product residues in blast furnaces along with coke would not have a significant effect on the composition of the steel product. EPA disagrees with the commenter. Blast furnaces normally are charged with coal tar product that contains the coke by-products covered by this rule, as opposed to the actual coke by-product wastes themselves. Due to this distinction, the Agency believes that the introduction of raw by-product wastes into the blast furnace may have an adverse effect on emissions from the blast furnace. In addition, the use of by-product wastes in blast furnaces may cause other engineering problems not posed by the processing of coal tar product. (Nor have any other interested members of the public had any opportunity to comment on this issue.) The Agency has insufficient information on the use of coke

by-product wastes in blast furnaces and may evaluate this practice further in the future. Until such time, this issue is outside the scope of today's rulemaking. See also 50 FR at 49171-72, 49174 (November 29, 1985) (general discussion of use of secondary materials in blast furnaces).

Before publication of the exclusion rule on June 22, 1992, coke by-product residues that exhibited the TC as generated were solid and hazardous wastes, and had to be managed as such. If these residues were stored on-site for a period exceeding 90 days, they had to be stored in accordance with RCRA Subtitle C controls on storage, including permitting standards. If hazardous residues were shipped off-site for recycling or disposal, they were required to be shipped with a manifest. Facilities that received hazardous waste residues for recycling were required to have a RCRA permit if the residues were stored at the facility prior to recycling. Coking industry representatives indicated that this strict regulatory regime for coke by- product residues served as a disincentive for waste minimization and recycling efforts in the coke by-products industry. Over 50 percent of the commenters to the proposed rule stated that coke by-products facilities that currently do not have RCRA permits would not obtain a RCRA permit to manage the residues prior to recycling, due to the corrective action implications of a permit and the associated costs. Consequently, absent some regulatory relief, the residues would be sent off-site for incineration or disposal.

This was not the Agency's intent. As discussed in the Administrative Stay under rules existing at that time, EPA views the required pretreatment steps as part of the recycling process. The Agency recognizes that prior processing of the residues is necessary to obtain a homogeneous material suitable for charging to a coke oven with coal or mixing with coal tar. Therefore, this processing is considered an integral part of the recycling process itself and, as such, is exempt from regulation under 40 CFR 261.6(c)(1). The exemption encompasses all the units associated with the recycling operation, in this case, the process units and ball mills used to process the residues prior to reinsertion to coke ovens.

In any case, this issue is now moot because the materials are excluded from being solid waste. As long as the terms of the exclusion are met (i.e., no land disposal from the point of generation to the time the wastes are recycled and proper documentation is kept), no RCRA regulations apply. However, generators of these wastes must be aware of the prohibition on speculative accumulation of wastes intended for recycling. A material is not accumulated speculatively if the person accumulating it can show that the material is potentially recyclable and has a feasible means of being recycled; and that, during the calendar year (commencing on January 1), the amount of material recycled or transferred to a different site for recycling equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period. (See 40 CFR 261.1(c)(8).) Therefore, the burden of proof rests with the person accumulating materials for recycling. EPA believes that speculative accumulation will not be a problem for most generators of coke by-product residues due to the ongoing use/reuse of these materials in their processes.

Three commenters requested a clarification in the final rule that today's rule does not apply to closing or historic sites. The commenters are incorrect. Since inception of the RCRA program, hazardous waste listings apply to the material being disposed, not when it is disposed of. A listed

coke by-product waste disposed in 1970 is still that same listed waste. (Chem. Waste Management v. EPA, 869 F.2d 1526 (D.C. Cir. 1989)) Hazardous waste listings thus apply retroactively to wastes disposed in units that ceased operation prior to the effective date of the listings. This does not mean that such wastes must be exhumed for proper treatment; they are subject to subtitle C controls only when they are actively managed. EPA has interpreted "active management" as physically disturbing accumulated wastes within a management unit or disposing of additional hazardous wastes in existing units containing previously disposed wastes (September 1, 1989; 54 FR 36597). Therefore, the listings promulgated today do apply to wastes disposed before the effective date of this rule, when such wastes are actively managed. For example, if an abandoned site is being remediated and wastes or contaminated media are being removed from the site, any wastes meeting the listing descriptions finalized today must be managed in accordance with all applicable requirements.

One commenter was concerned about environmental media contaminated with the wastes being listed today. The commenter believed that recycling of such media should be treated the same as the recycling of the listed wastes. EPA clarifies here that the recycling of materials extracted from media that are contaminated with the wastes being listed today will fall within the exclusion for recycling as long as the recycling practice meets the terms of the exclusion (i.e., no land disposal). If extracted material from contaminated media can be safely and effectively recycled, EPA sees no reason to regulate such recycling more stringently than the recycling of the process wastes themselves. Recycling of the listed materials is acceptable as long as they are not land disposed again. Extraction of recyclable materials from contaminated media remains subject to all applicable requirements of RCRA and CERCLA. In addition, the residues from this process (i.e., leftover media that is unrecyclable, or other treatment residues) not only will be hazardous waste but, once EPA prohibits these wastes from land disposal, would have to meet the treatment standard for these wastes before they could be land disposed.

Several commenters made reference to the similarity between the coke by-products recovery process and the recycling practice addressed in the AMC I decision, involving in-process recycled materials in the petroleum refining industry (AMC v. EPA, 824 F.2d, D.C. Cir. 1987). The commenters believe that the similarities between the two situations provide a sound basis for an exclusion for coke by-product residues, conditioned on no land disposal of materials.

EPA agrees that it is possible to craft a reasonable exclusion that allows these materials to be recycled so as not to become part of the waste management problem. EPA does not agree with the commenters' characterization of the AMC I decision, an opinion now substantially repudiated by the D.C. Circuit.

Upon promulgation of the exclusion, the recycling of coke by-product plant residues, by reinsertion to coke ovens, the tar recovery or refining process, or mixing with coal tar, was excluded from regulation, provided the condition of the exclusion at 40 CFR 261.4(a)(10) is met (i.e., no land disposal up to point of recycling). Consequently, if the terms of the exclusion are satisfied, coke by-product plant residues shipped off-site for recycling need not be accompanied by a manifest because they are not solid wastes and, therefore, not hazardous wastes. Of course, management of

coke by-product residues that involves land disposal carries the provision that those residues must be managed in accordance with all applicable RCRA requirements.

It is important to note that, although manifesting is not required for coke by-product wastes being shipped for recycling within the terms of the exclusion, generators of theses wastes remain subject to LDR notification requirements under Sec. 268.7(a)(6). This provision requires generators of restricted wastes that have been excluded from the definition of solid or hazardous waste or otherwise exempted from Subtitle C regulation to place a one-time notice in the facility's operating record. The requirements of the LDR program as they relate to this rulemaking are discussed more fully in the section of this preamble entitled Interaction with Other Regulations.

Four commenters objected to EPA's reliance on the "used to produce a fuel" rationale in 40 CFR 261.2(c)(2) for classifying coke by-product residues as solid wastes. Two commenters stated that the recycling of coke by-product residues into coke ovens falls under 40 CFR 261.2(e)(1) and, therefore, an exclusion at Sec. 261.4(a) is unnecessary because the residues are already excluded from the definition of solid waste since they are used as ingredients in an industrial process to make a product (coke). EPA's rationale in classifying coke by-product residues as solid wastes in the July 26, 1991 proposal is also the reasons why 40 CFR 261.2(e)(1) does not exclude coke by-product residues from classification as a solid waste. 40 CFR 261.2(e)(2) provides that materials burned for energy recovery, used to produce a fuel, or otherwise contained in fuels are solid wastes, even if the recycling involves use, reuse, or return to the original process, as described in Sec. 261.2(e)(1). The fact that coke has been recognized in the iron and steel industry for a long time not only for its physical and chemical value but also for its heating value in driving the iron reduction process in the blast furnace causes the "fuel" classification for coke.

The regulations classify secondary materials burned for energy recovery, used to produce a fuel, or otherwise contained in a fuel, as solid wastes because EPA believes that Congress intended the Agency to read its authority over waste-derived fuels expansively. EPA believes its authority over recycling is broadest when the recycling practice resembles a classic waste management activity, in this case, incineration. However, in the case involving recycling of coke by-product residues, the process is unlike waste management since the residues are similar to the coke and coal tar products, are amenable to use in the same process, and have no significant effect on the chemical composition of the products.

One commenter requested that the exclusion be expanded to include the recycling of coal tar materials generated by electric utilities during the remediation of historic manufactured gas plant (MGP) sites, specifically, the burning of coal tar wastes as fuels in high efficiency boilers. EPA wishes to clarify that the process of coal gasification is distinct from the coking process, from both a technical and a regulatory standpoint. The wastes from abandoned coal gasification plants are, therefore, not a part of this listing. The process referred to by the commenter is outside the scope of the recycling exclusion promulgated on June 22, 1992. The commenter may petition the Agency under 40 CFR 260.20 for a regulatory determination concerning the recycling activities at remediated MGP sites under a separate rulemaking.

One commenter proposed expanded approaches for dealing with the recycling of coke oven wastes. First, they recommended that EPA exempt these wastes

from regulation as a hazardous waste when they are used as part of a CERCLA cleanup or RCRA corrective action. Secondly, the commenter urged the Agency to adopt a generic recycling exemption (i.e., from regulation as a hazardous waste) for recycling of these wastes and MGP wastes by any type of process if a person submits a petition and EPA approves such petition. This petitioning process would be similar to the existing process for delisting petitions.

Regarding the first suggestion, at a CERCLA site, treatment of a waste does not need a RCRA permit as long as the work is being done on-site and as long as Applicable and Relevant and Appropriate Requirements (ARARs) are observed.

In these cases, where the wastes are removed from a remediated site, the material extracted can still be recycled to a coke oven if it meets the description of a waste in today's rule and if a coke by-products facility is willing to accept it. (Subsequent land disposal of the material again would void the exclusion.) Further, the issue of a national policy regarding recycling at remedial sites outside the scope of this rulemaking, which deals only with listing determinations regarding coke by-product wastes (RCRA 3001(e)). The Agency has recently raised the issue of cleanups at RCRA or CERCLA sites in the Hazardous Waste Identification Rule proposed on May 20, 1992 (57 FR 21450--21522). The Agency will resolve issues related to recycling at these sites as it decides which option in the HWIR rule to promulgate, in response to public comments.

With regard to the second point, under the exclusion to the definition of solid waste in Sec. 261.4(a)(10), the materials can be excluded if they are returned to an excluded process (e.g., coke oven). The materials in question must have enough coke by-products material to meet the requirements of 261.4(a)(10). Given the demonstrated ability of several recyclers to accomplish extracting, reprocessing, and recycling of these materials without land disposal, the Agency feels that the current regulatory structure is sufficient to encourage not only the recycling of coke by-products wastes at operational facilities but also the remediation of these materials where they have been found in sufficient quantities in the environment (e.g., abandoned sites).

Finally, one commenter requested that a Regulatory Flexibility Analysis be conducted. The Regulatory Flexibility Act (5 U.S.C. 601 et seq.) requires that whenever an agency publishes a notice of rulemaking, it must prepare a Regulatory Flexibility Analysis (RFA) that describes the effect of the rule on small entities. An RFA is unnecessary, however, if the Agency's administrator certifies that the rule will not have a significant economic effect on a substantial number of small entities. The commenter contended that the proposed rule would have a significant economic impact on their business because it proposed to exclude only processes that occur subsequent to the company's recycling activities. The Agency reiterates that any processing of coke by-products that occurs prior to recycling is considered part of the recycling process and is, therefore, excluded from regulation, provided that the terms of the exclusion are met. As a result, small entities are not significantly affected and a Regulatory Flexibility Analysis is unnecessary.

Additional detail and responses to additional comments are available in the Background Document to today's rule.

IV. Interaction With Other Regulations

A. Land Disposal Restrictions

The 1984 amendments to RCRA (HSWA) mandate that the Agency promulgate land disposal prohibition determinations under a specific schedule for wastes identified and listed prior to enactment of HSWA (RCRA sections 3004 (d), (e), and (g)(4); 42 U.S.C. 6924 (d), (e), and (g)(4)). If the Agency failed to promulgate land disposal restrictions by the dates specified in section 3004(g)(4), the wastes were absolutely prohibited from land disposal after May 8, 1990. The statute also requires the Agency to make a land disposal prohibition determination for any hazardous waste that is newly listed or identified after November 8, 1984, within six months of the date of promulgation of the listing or identification (RCRA 3004(g)(4)). However, the statute does not provide for automatic prohibition of the land disposal of such wastes if EPA fails to meet this deadline.

The Agency is in the process of completing treatability and capacity analyses for the wastes covered by today's rule. For this reason, the Agency will address land disposal restrictions for these wastes in the near future.

It should be noted that because the statute does not provide for automatic restriction or prohibition of land disposal for newly listed and identified wastes until such restrictions are promulgated, land disposal of these wastes will not be restricted or prohibited until the Agency promulgates land disposal restrictions for these wastes. However, these wastes may exhibit one of the prohibited hazardous characteristics or be subject to other regulatory or statutory restrictions such as the prohibition on disposing liquids in landfills. Wastes that exhibit the Toxicity Characteristic are considered newly identified and are not covered by the LDR, unless they also exhibit the EP Toxicity Characteristic (see the Third Third LDR Rule, June 1, 1990; 55 FR 22520). EPA expects to propose prohibitions and treatment standards for TC wastes, as well as for the wastes newly listed today, during the summer of 1992.

EPA wishes to point out that generators of restricted hazardous wastes that have been excluded or exempted from regulation are subject to a notification requirement under the Land Disposal Restrictions program in accordance with Sec. 268.7(a)(6) (see 55 FR 3878; January 31, 1991). This subparagraph requires generators of restricted wastes that are excluded from the definition of solid or hazardous waste or otherwise exempt from Subtitle C regulation to place a one-time notice in the facility's files. This notice must contain information on the generation, subsequent exclusion or exemption from RCRA regulation, and the disposition of the waste. This recordkeeping requirement is similar to the provision in Sec. 261.2(f) requiring documentation of claims that a material is not a solid waste. The information on the disposition of the waste must indicate that the waste is not land disposed or placed in any type of land-based unit and, therefore, remains eligible for the exclusion. The existing listed wastes covered by the exclusion at Sec. 261.4(a)(10) (i.e., K060 and K087) are already prohibited from land disposal and have BDAT treatment standards associated with them and are therefore already subject to this recordkeeping requirement. The wastes being listed today will be addressed by the Agency in a future LDR rulemaking and will therefore become subject to the notification requirement once the prohibition for these wastes takes effect. As discussed above, these prohibitions and treatment standards for the TC wastes are expected to be proposed this summer.

V. State Authority

A. Applicability of Final Rule in Authorized States

Under Section 3006 of RCRA, EPA may authorize qualified States to administer and enforce RCRA programs within the State. (See 40 CFR part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under sections 3008, 7003, and 3013 of RCRA, although authorized States have primary enforcement responsibility.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final RCRA authorization administered its authorized hazardous waste program entirely in lieu of EPA. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in the State which the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under section 3006(g) of RCRA (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by the HSWA take effect in authorize States at the same time that they take effect in nonauthorized States. EPA is directed to implement these requirements and prohibitions in authorized States, including the issuance of permits, until the State modifies its program to reflect the Federal standards, and applies for and is granted authorization. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in authorized States in the interim.

Today's rule is promulgated pursuant to section 3001(e)(2) of RCRA, a provision added by HSWA. Therefore, the Agency is adding these requirements to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and that take effect in all States, regardless of their authorization status. States may apply for either interim or final authorization for the HSWA provisions identified in 40 CFR 271.1(j) Table 1, as discussed in the following section of the preamble.

B. Effect on State Authorization

As noted previously, today's rule is promulgated pursuant to provisions added by HSWA. The addition of K141 through K145 and K147 and K148 to the list of hazardous wastes from specific sources is promulgated pursuant to section 3001(e)(2) of RCRA, a provision added by HSWA.

As noted above, EPA will implement the HSWA portions of today's rule in authorized States until they modify their programs to adopt these rules and such modifications are approved by EPA. Because this rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final RCRA authorization under section 3006 (g)(2) or 3006(b), respectively, on the basis that State regulations are substantially equivalent or fully equivalent to EPA's regulations. The

procedures and schedules for State program modifications for either interim or final authorization are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire on January 1, 1993 (see 40 CFR 271.24(c)).

It should also be noted that 40 CFR 271.21(e) requires that States having final RCRA authorization must modify their programs to reflect Federal program changes and must subsequently submit the modifications to EPA for approval. The deadline by which States must modify their programs to reflect this rule is July 1, 1994 (or July 1, 1995, if statutory changes are required). Once EPA approves the modification, the State requirements become RCRA subtitle C requirements.

States with authorized RCRA programs may already have regulations similar to those promulgated in today's rule. Such State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement its regulations as RCRA requirements until the State program modification is submitted to EPA and approved. Of course, States with existing regulations may continue to administer and enforce those regulations as a matter of State law. In addition, in implementing the Federal program, EPA will work with the States under cooperative agreements to minimize duplication of efforts; in many cases, EPA will be able to defer to the States in their efforts to implement their programs, rather than take separate actions under Federal authority.

States that submit their official applications for final authorization less than 12 months after the effective date of EPA's regulations are not required to include regulations equivalent to the EPA regulations in their application. However, States must modify their programs by the deadlines set forth in 40 CFR 271.21(e)(2). States that submit official applications for final authorization 12 months after the effective date of these standards must include standards equivalent to these standards in their application.

The requirements States must meet when submitting final authorization applications are set forth in 40 CFR 271.3.

VI. CERCLA Designation and Reportable Quantities

All hazardous wastes listed in 40 CFR 261.31 through 261.33, as well as any solid waste that exhibits one or more of the hazardous waste characteristics, also are hazardous substances under section 101(14) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. Therefore, the seven wastes being listed today are CERCLA hazardous substances. Hazardous substances are listed in Table 302.4 at 40 CFR 302.4 along with their respective reportable quantities (RQs); thus, EPA is today adding entries for K141, K142, K143, K144, K145, K147, and K148 to Table 302.4.

Under CERCLA 103(a), the person in charge of a vessel or facility from which a hazardous substance has been released in a quantity that equals or exceeds its RQ must immediately notify the National Response Center of the release as soon as that person has knowledge of the release. In addition to this reporting requirement under CERCLA, section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA) requires owners or operators of certain facilities to report the release of a hazardous

substance to State and local authorities. EPCRA section 304 notification must be given to the community emergency coordinator of the local emergency planning committee for each area likely to be affected by the release, and to the State emergency planning commission of any State likely to be affected by the release.

Under section 102(b) of CERCLA, all hazardous wastes are assigned a statutory RQ of one pound unless and until adjusted by regulation. The Agency's methodology for adjusting RQs of individual hazardous substances begins with an evaluation of the intrinsic physical, chemical, and toxicological properties of each hazardous substance. The intrinsic properties examined, called "primary criteria," are aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, chronic toxicity, and potential carcinogenicity. Generally, for each intrinsic property, the Agency ranks hazardous substances on a scale, associating a specific range of values on each scale with an RQ of 1, 10, 100, 1,000, or 5,000 pounds. The data for each hazardous substance are evaluated using various primary criteria; each hazardous substance may receive several tentative RQ values based on its particular intrinsic properties. The lowest of the tentative RQs becomes the "primary criteria RQ" for that substance.

After the primary criteria RQs are assigned, substances are further evaluated for their susceptibility to certain degradative processes, which are used as secondary adjustment criteria. These natural degradative processes are biodegradation, hydrolysis, and photolysis (BHP). If a hazardous substance, when released into the environment, degrades relatively rapidly to a less hazardous form by one or more of the BHP processes, its RQ, as determined by the primary RQ adjustment criteria, is generally raised one level. This adjustment is made because the relative potential for harm to public health or welfare or the environment posed by the release of such a substance is reduced by these degradative processes. Conversely, if a hazardous substance degrades to a more hazardous form after its release, the original substance is assigned an RQ equal to the RQ for the reaction product. The downward adjustment is appropriate because the hazard posed by the release of the original substance is increased if it degrades to a more hazardous form.

The methodology summarized above is applied to adjust the RQs of individual hazardous substances. An additional process applies to RCRA waste streams that contain individual hazardous substances as constituents. As the Agency has stated (54 FR 33440, August 14, 1989), to assign an RQ to a waste stream, the Agency determines the RQ for each waste stream constituent and then assigns the lowest of these constituent RQs to the waste stream itself.

Waste streams K141, K142, K143, K144, K145, K147, and K148 each contain at least one constituent with an RQ of one pound (the lowest RQ). In order to coordinate RCRA and CERCLA rulemakings, the Agency included regulatory RQs of one pound for each waste stream in the July 26, 1991 proposed rule (56 FR 35758). EPA received no comments on these proposed RQ adjustments. The Agency is, therefore, promulgating these RQ adjustments by including final RQs of one pound for waste streams K141, K142, K143, K144, K145, K147, and K148 in Table 302.4 (40 CFR 302.4).

VII. Cost and Economic Analysis

Executive Order No. 12291 requires that a regulatory agency determine whether a new regulation will be "major" and, if so, that a Regulatory Impact Analysis (RIA) be conducted. An RIA is a quantification of the potential benefits, costs, and economic impacts of the rule. A "major" rule is defined as a regulation likely to: (1) Result in an annual effect on the economy of $100 million or more; (2) increase costs or prices for consumers, individuals, industries, Federal, State, and local government agencies, or geographic regions; or (3) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

The Agency estimated the costs of today's final rule to determine if it is a major regulation as defined by Executive Order 12291. Today's final rule is not a major rule, having costs below $100 million annually. Additionally, the Agency's cost analysis concluded that these costs would not result in significant price increases or significant adverse effects on competition, trade, employment, or investment. Because impacts of this rule do not meet the criteria set forth by Executive Order 12291, the Agency has determined that today's rule is not a major one. An effect and economic impact analysis has been performed, estimating the costs and economic impact incurred as a result of today's rule. This section of the preamble discusses the results of this analysis. The full Cost and Economic Impact Analysis document is available in the public docket.

A. Cost Analysis

The Agency developed costs for today's final rule on a facility-specific basis for the coking industry (30 active coke facilities) and the tar refining industry (eight active tar refining facilities). Baseline management practice costs and post-regulatory management practice costs were developed at each facility; the incremental compliance cost of today's rule is determined as the post-regulatory cost minus the baseline cost.

The baseline management options include practices such as recycling to the coke oven or tar decanter, on-site landfilling, off-site reclamation, and burning in a boiler or blast furnace. The compliance management options include recycling to the coke oven or cement kiln for all waste streams, no generation-circulation for tar storage tank residues for coking merchant plants and tar refining plants, and off-site reclamation for K143 wash oil purifier residue and decanter muck.

Tables 7 and 8 summarize the annualized after-tax costs by waste code for baseline, least costly compliance option (recycle to the oven and no generation-circulation for tar storage tank residues from tar refining) and most costly compliance option (cement kiln). Tables 9 and 10 summarize the annualized after-tax costs by facility, including the part 262 costs. The total incremental annual after-tax compliance cost of today's rule is estimated to be between $380,000 (not including a $200,000 estimated savings for the tar refining industry) and $6.6 million. The Economic Impact Screening Analysis, available in the docket, provides a complete description of the cost analysis.

Table 7--Summary of Coking Industry Impacts Following Compliance for Hazardous Waste Listings K141-K145
(After tax private cost)

Line No.	Waste stream	Coke production (tons/ product year)a	Residual (tons/ year)	Current management practice	Baseline Annualized cost ($/yr)
1.	K141	24,924,631	3,102	Baseline	54,980
2.	K142	24,637,897	10,023	Baseline	497,012
3.	K143		22,860,399		
4.	(a) Scrubber residue	452		Baseline	11,873
5.	(b) Wash oil residue	3,617		Baseline	30,862
6.	K144	16,297,707	870	Baseline	23,480
7.	K145	15,251,593	453	Baseline	14,994
8.	Total				633,201

(...Table continues...)

Line No.	Least costly compliance option: Compliance management practice	Annualized cost ($/yr)	Incremental annualized cost ($/yr)
1.	Recycle to oven	234,732	149,752
2.	Recycle to oven	661,443	175,450
3.			
4.	Recycle to oven	29,817	18,075
5.	Recycle to oven	236,702	207,857
6.	Recycle to oven	37,411	33,930
7.	Recycle to oven	29,919	15,207
8.		1,220,024	600,279

(...Table continues...)

Line No.	Most costly compliance option: Compliance management practice	Annualized cost ($/yr)	Incremental annualized cost ($/yr)
1.	Cement Kiln	952,364	897,334
2.	Cement Kiln	3,147,559	2,650,547
3.			
4.	Cement Kiln	150,671	238,025
5.	Cement Kiln	1,016,390	985,528
6.	Cement Kiln	343,023	319,542
7.	Cement Kiln	220,580	205,587
8.		5,830,594	5,197,393

a 1984 production data from 1985 RCRA 3007 questionnaire.

Table 8.--Summary of Tar Industry Impacts Following Compliance for Hazardous Waste Listings K147--K148
(After Tax Private Cost)

Line No.	Product	Tar processed gal/year)*	Residual (tons/ year)	Current management practice	Baseline Annualized cost ($/yr)
1.	K147	178,368,000	2,516	Baseline	153,450
2.	K148	175,928,000	242	Baseline	12,237
3.				Total	165,687

(...Table continues...)

	Least costly compliance option		
Line No.	Compliance management practice	Annualized cost ($/yr)	Incremental annualized cost ($/yr)
1.	No generation-circ.	2,088	0
2.	Recycle to oven	16,342	4,105
3.		18,430	4,105

(...Table continues...)

	Most costly compliance option		
Line No.	Compliance management practice	Annualized cost ($/yr)	Incremental annualized cost ($/yr)
1.	Cement Kiln	789,891	636,440
2.	Cement Kiln	105,877	93,640rn,n,n,n,s,n,s,s,n,s
3.		895,768	730,080

a 1984 production data from RCRA 3007 questionnaire.

B. Economic Impact Analysis

The Agency assessed the economic impacts incurred due to today's final rule for the coke industry and the tar refining industry. The economic impacts for both industries were estimated by calculating the ratio derived from dividing the annual incremental after-tax compliance costs by the value of production on a facility-specific basis. A ratio greater than one percent of sales (value of production) indicates potentially significant adverse effects.

1. Coking Industry

EPA estimated costs for the 30 active coke facilities for which data was available. However, the economic impact analysis was conducted for all 32 coking facilities. Economic impacts for the two facilities for which the Agency did not possess data were estimated using the average production and incremental compliance costs for the 30 active coke facilities. Table 9 summarizes the impacts by facility and industry total for coking. Except for those facilities that claimed confidentiality (CBI facilities), Table 9 shows for each facility in the industry the estimated annual value of production, least costly and most costly incremental annualized compliance costs, and costs of compliance as a percent of value of production.

Assuming facilities adopt the least costly management options, costs of compliance are insignificant for all facilities. For the least costly management options, the industry aggregate costs of compliance to value of production ratios is estimated at 0.009 percent (compared to the proposed rule industry aggregate of -0.001 percent). There are no adverse economic impacts associated with the least costly option. The increase in the industry aggregate cost to value of production ratio from the proposed rule is attributable to a contract recycler recycling the waste at the coking plant at $100/ton. The price of $100/ton includes capital expenditures for storage and processing equipment, removal of waste, and processing. The proposed rule costs included only facility labor for removal of waste, except for K143 which also included storage tanks.

Assuming that facilities adopt the most costly compliance option, cement kiln in all cases, there are no adverse economic impacts. For the most costly management option, the industry aggregate costs of compliance to

value of production ratios is estimated at 0.13 percent (compared to the proposed rule industry aggregate of 0.36 percent).

Table 9.--Summary of Coking Facility and Industry Impacts Following Compliance With Proposed Hazardous Waste Listings (K141-K145)

DPRA facility ID No.	Estimated No. of production	Least costly options annualized compliance costs ($/yr)	Least costly options Incremental value of production ($/yr)	Least costly options Incremental as a percent of value of production (%)	Most costly options Costs of compliance ($/yr)	Most costly options Costs of compliance as a percent of value of production (%)
32	35,452,470	(1,715)	-0.005		36,226	0.10
31	42,237,649	2,180	0.005		32,404	0.08
10	63,842,000	2,932	0.005		81,212	0.13
26	80,094,745	10,557	0.013		122,092	0.15
24	73,820,932	15,111	0.020		125,814	0.17
22	78,427,293	2,358	0.003		43,999	0.06
8	94,202,216	5,788	0.006		125,539	0.13
15	85,064,165	10,266	0.012		122,056	0.14
23	83,800,535	8,716	0.010		109,003	0.13
1	132,008,745	12,316	0.010		142,520	0.11
9	155,552,951	21,612	0.014		225,317	0.14
11	107,763,220	3,503	0.003		28,693	0.03
20	159,286,321	11,316	0.007		127,295	0.08
28	139,573,882	10,645	0.008		122,191	0.09
30	128,027,092	8,923	0.007		185,977	0.15
4	209,541,571	18,395	0.009		178,545	0.09
2	187,411,097	19,117	0.010		213,670	0.11
25	168,991,246	20,841	0.012		232,759	0.14
16	336,478,730	70,182	0.021		752,809	0.22
3	275,262,890	27,028	0.010		291,834	0.11
27	262,956,386	16,782	0.006		353,208	0.13
7	464,034,330	16,457	0.004		385,011	0.08
50 /1/	138,629,820	21,625	0.016		235,075	0.17
52 /1/	172,462,500	31,264	0.018		348,351	0.20
CBI /2/	474,025,289	(8,794)	-0.002		640,133	0.14
Other /3/	276,596,538	23,894	0.009		350,782	0.13
Total industry	4,425,544,613	382,299	0.009		5,612,515	0.13

/1/ The estimated value of production for this firm is based strictly on their production of coke. No information is available on the rest of their production line. Thus, the value of production is likely underestimated and the impacts on these facilities overestimated.

/2/ Information for CBI facilities is aggregated to protect the confidentiality of each individual facility.

/3/ There are two active coking facilities for which no production or waste generation data are available. The average values for all other coking facilities are used as proxies for these two facilities, so that industry impacts are not underestimated. Thus, the average value of production is assumed for each of these facilities, as is the average incremental annualized compliance costs for both the least costly options and the most

costly options.
Source: DPRA Incorporated.

2. Tar Refining Industry

There are 14 active tar refining facilities. Of these 14 facilities, three facilities do not generate K147 and K148. In addition, for three of the facilities no production or waste generation data are available. Incremental compliance costs were estimated for the eight active tar refining facilities for which the Agency has data. However, the Agency conducted an economic impact analysis for 11 tar refining plants (the three facilities that do not generate K147 and K148 were omitted). Economic impact for the three facilities for which there are no data were estimated using the average production and incremental compliance costs for the eight active tar refining facilities. Table 10 summarizes the impacts by industry total for tar refining. Nearly all the tar refiners requested confidentiality on the data they submitted on the RCRA 3007 questionnaire; therefore, Table 10 presents only aggregated information.

Assuming facilities adopt the least costly management options, costs of compliance are insignificant for all facilities. For the least costly management options, the industry aggregate costs of compliance to value of production ratios is estimated to be too small to be measurable as a cost or savings (compared to the proposed rule industry aggregate of -0.04 percent).
There are no adverse economic impacts associated with the least costly option.

Assuming the facilities adopt the most costly compliance option, cement kiln in all cases, there are no adverse economic impacts. For the most costly management option, the industry aggregate costs of compliance to value of production ratios is estimated at 0.26 percent (compared to the proposed rule industry aggregate of 0.97 percent). Under the proposed rule, five tar refining facilities were adversely affected, with costs to sales ratios exceeding one percent.

Table 10.-- Summary of Tar Refining Industry Effects Following Compliance With Proposed Hazardous Waste Listings (K 147 and K 148)

		Least costly option /2/		Most costly option /3/	
Facility name /1/	Estimated value of production	Incremental annualized costs ($/yr)	Costs of compliance as a percent of value of production (%)	Incremental annualized compliance costs ($/yr)	Costs of compliance as a percent of value of production (%)
Aggregated facilities	$384,801,384 /4/	0	0	1,011,248	0.26

/1/ Because most tar refining facilities requested confidentiality, individual facility names are not shown. Rather, data from all facilities are presented in aggregate figures.
/2/ Least costly option: No generation/circulation for tar storage tank residues (K147). Recycle to oven for still bottoms (K148).
/3/ Most costly option: Cement kiln for both K147 and K148.
/4/ Incremental annualized compliance costs were determined to be

insignificant, either as a cost or a savings.
Source: Prepared for the U.S. EPA by DPRA Incorporated.

VIII. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980 (RFA), 5 U.S.C. 601 et seq., whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). This analysis is unnecessary, however, if the agency's administrator certifies that the rule will not have a significant economic effect on a substantial number of small entities.

EPA has examined the rule's potential effects on small entities as required by the Regulatory Flexibility Act. I certify that today's proposed rule will not have a significant economic effect on a substantial number of small entities.

IX. Paperwork Reduction Act

This rule does not contain any new information collection requirements under RCRA that are subject to OMB review under the Paperwork Reduction Act of 1990, 44 U.S.C. 3501 et seq. Release reporting required as a result of proposing the listed wastes as hazardous substances under CERCLA and adjusting the reportable quantities (RQs) has been approved under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq., and has been assigned OMB control number 2050-0046.

X. Compliance and Implementation

A. Section 3010 Notification

Generally, when new hazardous wastes are listed, all persons who generate, transport, treat, store, or dispose of the newly listed waste(s) are required to notify either EPA, or a State authorized by EPA to implement the hazardous waste program, of their activities pursuant to Section 3010 of RCRA. However, under the Solid Waste Disposal Amendments of 1980 (Pub. L. 96-482), EPA was given the option of waiving the notification requirements under Section 3010 of RCRA following revision of the Section 3001 regulations, at the discretion of the Administrator. EPA is proposed to waive this notification requirement for persons who handle wastes that are covered by today's rule and have already notified EPA that they manage other hazardous wastes and have received an EPA identification number. EPA is waiving the notification requirement because of the likelihood that persons managing today's newly listed wastes already are managing one or more hazardous wastes that generally are associated with the generation of K141-K145, K147, and K148 and have, therefore, previously notified EPA and received an EPA identification number. In the event that any person who generates, transports, treats, stores, or disposes these wastes has not previously notified and received an identification number, that person must obtain an identification number pursuant to 40 CFR 262.12 before that person can generate, transport, treat, store, or dispose of these wastes.

B. Compliance Dates for Facilities

Today's hazardous wastes listings are promulgated pursuant to HSWA. HSWA requirements are applicable in authorized States at the same time as in unauthorized States. Therefore, EPA will regulate the wastes listed today until States are authorized to regulate these wastes. The Agency will apply these Federal regulations to these wastes and to their management in both authorized and unauthorized States.

Newly regulated facilities (i.e., facilities at which the only hazardous wastes that are managed are today's newly listed wastes in units subject to permit requirements) must qualify for interim status within six months of publication of the rule in order to continue managing these wastes in such units. To retain interim status, a newly-regulated land disposal facility must, within eighteen months after publication of the rule, submit a part B permit application and certify that the facility is in compliance with all applicable ground-water monitoring and financial responsibility requirements (see RCRA section 3005(e)(3)).

Interim status facilities that manage the wastes listed today must file an amended part A permit application within six months of publication of today's rule (the effective date of the rule) if they are to continue managing these wastes in units that require a permit. The facilities must file the necessary amendments by the effective date of the rule, or they will not obtain interim status with respect to these wastes.

Currently permitted facilities that manage today's newly listed wastes must request permit modifications if they are to continue managing these wastes in units that require a permit. Since EPA will initially be responsible for processing these permit modifications, the Federal procedures for permit modifications to add newly listed or identified wastes will be followed. (See Sec. 270.42(g).) This provision generally requires that a permitted facility that is "in existence" for the newly listed or identified waste on the effective date of the waste listing must submit a Class 1 modification by that date. Essentially, this modification notifies the Agency and the public that the facility is handling the waste and identifies the units involved. By submitting this notice, the facility is temporarily allowed to continue management of the newly listed wastes until the Agency can make a final modification to the permit. Next, within 180 days of the effective date the permittees must submit a more detailed permit modification request (i.e., a Class 2 or 3 modification). This information will be used by the Agency to develop a final permit modification.

List of Subjects

40 CFR Part 261

Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indians-lands, Intergovernmental relations, Penalties, Reporting and recordkeeping

requirements, Water pollution control, Water supply.

40 CFR Part 302

Air pollution control, Chemicals, Hazardous substances, Hazardous materials, Hazardous wastes, Intergovernmental relations, Natural resources, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

Dated: July 31, 1992.

William K. Reilly,
Administrator.

For the reasons set out in the preamble, chapter I of title 40 of the Code of Federal Regulations is amended as follows:

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. In Sec. 261.4, paragraph (a)(10) is revised to read as follows:

Sec. 261.4 Exclusions.

(a) * * *

(10) EPA Hazardous Waste Nos. K060, K087, K141, K142, K143, K144, K145, K147, and K148, and any wastes from the coke by-products processes that are hazardous only because they exhibit the Toxicity Characteristic (TC) specified in section 261.24 of this part when, subsequent to generation, these materials are recycled to coke ovens, to the tar recovery process as a feedstock to produce coal tar, or mixed with coal tar prior to the tar's sale or refining. This exclusion is conditioned on there being no land disposal of the wastes from the point they are generated to the point they are recycled to coke ovens or tar recovery or refining processes, or mixed with coal tar.

* * * * *

3. Section 261.32 is amended by adding the following hazardous waste listings in alphanumeric order to the subgroup Coking to read as follows:

Sec. 261.32 Hazardous wastes from specific sources.

* * * * *

Industry and EPA hazardous waste No.	Hazard	Hazardous waste code

* * * * * * *

Coking:

* * * * * * *

K141 Process residues from the recovery of coal tar, (T) including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).

K142 Tar storage tank residues from the production of coke (T) from coal or from the recovery of coke by-products produced from coal.

K143 Process residues from the recovery of light oil, (T) including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.

K144 Wastewater sump residues from light oil refining, (T) including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.

K145 Residues from naphthalene collection and recovery (T) operations from the recovery of coke by-products produced from coal.

K147 Tar storage tank residues from coal tar refining. (T)

K148 Residues from coal tar distillation, including but not (T) limited to, still bottoms.

4. In part 261, Appendix VII is amended to add the following waste streams in alphanumeric order to read as follows:

Appendix VII--Basis for Listing Hazardous Waste

EPA hazardous waste No.	Hazardous constituents for which listed
* * * * * * *	
K141	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K142	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K143	Benzene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene.
K144	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene.
K145	Benzene, benz(a)anthracene, benzo(a)pyrene, dibenz(a,h)anthracene, naphthalene.
K147	Benzene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.
K148	Benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene.

* * * * * * *

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

1. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

2. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication:

Sec. 271.1 Purpose and scope.

* * * * *

(j) * * *

Table 1.--Regulations Implementing the Hazardous and Solid Waste Amendments of 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* * * * * * *			
August 18, 1992.	The listing of wastes from the production, recovery, and refining of coke by-products produced from coal	(Insert FR page numbers)	February 18, 1993.

* * * * *

PART 302--DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

1. The authority citation for part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

2. Section 302.4 is amended by adding the waste streams K141 through K145, K147, and K148 to Table 302.4 in alphanumeric order. The appropriate footnotes to Table 302.4 are republished without change.

Table 302.4.--List of Hazardous Substances and Reportable Quantities

Hazardous substances	CASRN	Regulatory synonyms	Statutory RQ	Code	Final RQ o	RCRA waste number	Pounds Category	(Kg)
* * * * * * *								
K141			1*	4	K141	X	1	(0.454)
Process related from the recovery of coal tar, including, but not limited to, tar collecting								

sump residues from the production of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations.)

K142 1* 4 K142 X 1 (0.454)
Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.

K143 1* 4 K143 X 1 (0.454)
Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.

K144 1* 4 K144 X 1 (0.454)
Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.

K145 1* 4 K145 X 1 (0.454)
Residues from naphthalene collection and recovery operations from the recovery of

coke by-products
produced from
coal.
K147 1* 4 K147 X 1 (0.454)
Tar storage tank
residues from
coal tar
refining.
K148 1* 4 K148 X 1 (0.454)
Residues from coal
tar distillation,
including, but
not limited to,
still bottoms.
o--indicates the statutory source as defined by 1, 2, 3, 4, or 5 below.
4--indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA Section 3001.
1*--indicates that the 1-pound RQ is a CERCLA statutory RQ.
* * * * *

(FR Doc. 92-19347 Filed 8-17-92, 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 3010 3001 3007 3004 3006 3008 7003 3013 3005 1006 2002 3002 3017 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-482 SEC. 17 -- Solid Waste Disposal Act Amendments of 1980
Pub. Law 99-499 SEC. 304 -- Superfund Amendments and Reauthorization Act of 1986 (SARA); Emergency Planning and Community Right-to-Know Act of 1986
Pub. Law 92-500 SEC. 2 -- Federal Water Pollution Control Act Amendments of 1972
Pub. Law 96-510 SEC. 103 102 101 104 -- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); Hazardous Substance Response Revenue Act of 1980
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-616 SEC. 221 201 245 -- Hazardous and Solid Waste Amendments of 1984
Pub. Law 80-845 SEC. 311 501 -- Federal Water Pollution Control Act (Act of 6/30/48)

DIALOG(R)File 180:Federal Register

Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Financial Responsibility for Third-Party Liability, Closure, and Post-Closure
Volume: 57 Issue: 180 Page: 42832
CITATION NUMBER: 57 FR 42832
Date: WEDNESDAY, SEPTEMBER 16, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR 264 265
NUMBERS: FRL-4106-2; RIN 2050-AC71
DATES: Effective: 19920916
CONTACT INFORMATION: RCRA Hotline, 800-424-9346, 202-260-3000; Ed Coe, 202-260-6259
ACTION: Final rule
INTERNAL DATA: (FR Doc. 92-22248 Filed 9-15-92; 8:45 am)
Word Count: 12980

SUMMARY: The Environmental Protection Agency (EPA) is amending its financial assurance requirements under subtitle C of the Resource Conservation and Recovery Act (RCRA). On July 1, 1991 (56 FR 30201), the Agency proposed several amendments to the regulations related to third-party liability coverage, namely, the claims reporting provision and the provisions for obtaining a letter of credit. The Agency proposed to expand the use of the non-parent corporate guarantee to owners and operators of hazardous waste facilities for demonstrating financial responsibility for closure and post- closure care. In this action the Agency is promulgating those changes.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264 and 265

(FRL-4106-2)

RIN 2050-AC71

Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Financial Responsibility for Third-Party Liability, Closure, and Post-Closure

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is amending its financial assurance requirements under subtitle C of the Resource Conservation and Recovery Act (RCRA). On July 1, 1991 (56 FR 30201), the Agency proposed several amendments to the regulations related to third-party liability coverage, namely, the claims reporting provision and the provisions for obtaining a letter of credit. The Agency proposed to

expand the use of the non-parent corporate guarantee to owners and operators of hazardous waste facilities for demonstrating financial responsibility for closure and post- closure care. In this action the Agency is promulgating those changes.

EFFECTIVE DATE: September 16, 1992.

FOR FURTHER INFORMATION CONTACT: RCRA Hotline at 1-800-424-9346 (in Washington, DC, call 260-3000), or Ed Coe at (202) 260-6259, Office of Solid Waste (OS-341), U.S. Environmental Protection Agency, Washington DC, 20460.

SUPPLEMENTARY INFORMATION:

Preamble Outline

I. Authority

This proposed rule is issued under the authority of section 3004 of the Resource Conservation and Recovery Act (RCRA), as amended, 42 U.S.C. 6924.

II. Amendments to the September 1, 1988 Rule Regarding Third Party Liability Coverage

A. Background

On September 1, 1988, the Agency issued a final rule that expanded the instruments available to owners and operators to demonstrate financial responsibility for third party liability. (see 53 FR 33938). Prior to the September 1, 1988 rule, the RCRA regulations at 40 CFR 264.147 allowed the use of a financial test, a parent corporate guarantee, or insurance for third party liability assurance. In the September 1, 1988 rulemaking, the Agency expanded the options to include the letter of credit, surety bond, trust fund, and non-parent corporate guarantee. The September 1, 1988 rulemaking also established in Secs. 264.147 and 265.145 a claims reporting requirement for third-party claims.

Chemical Waste Management, Inc. (CWM) challenged several provisions of the September 1, 1988 rulemaking, in particular, several provisions related to the letter of credit and the claims reporting requirement. On February 23, 1990 the parties entered into a Joint Stipulation of Settlement in which the Agency agreed to: (1) Revise the claims reporting requirement of Secs.

264.147 and 265.147 to clarify the type of claims that must be reported; (2) amend Sec. 264.151(k) to authorize the creation of a standby trust fund for owners and operators who obtain letters of credit to demonstrate liability coverage; and (3) issue a correction to Secs. 264.147(a)(2) and 265.147(a)(2) to insert a reference to the financial test. In accordance with the February 23 settlement agreement, the Agency proposed changes to the claims reporting requirement of Secs. 264.147 and 265.147 and the use of a standby trust fund under Sec. 264.151(k) on July 1, 1991 (56 FR 30201). The technical correction to Secs. 264.147(a)(2) and 265.147(a)(2) was also published on that date.

Today's notice promulgates the changes pertaining to claims reporting and the standby trust proposed on July 1, 1991.

In addition to the changes resulting from the settlement agreement, today's notice also promulgates a conforming change to Secs. 264.147(f)(6) and 265.147(f)(6) to expand the instruments available to owners and operators that no longer meet the requirements of the financial test for liability coverage. This change was proposed in the July 1, 1991 notice.

The July 1, 1991 notice also proposed provisions not promulgated today. First, that notice proposed modifications to the financial tests for closure, post-closure and third-party liability. In addition, it proposed amendments to the post-closure deed requirement at Secs. 264.119(b)(2), 264.143(i), 265.119(b)(2), and 265.143(h). EPA is continuing to evaluate comments received on the proposed revisions to the financial tests and has decided not to proceed with those revisions and the revisions to the post-closure deed requirements at this time. EPA believes deferring action on the amendments promulgated today until such time as revisions to the financial tests and all other issues arising from the July 1, 1991 notice are resolved is not necessary to protect human health and the environment and would unduly burden the regulated community. Because the July 1, 1991 notice would have amended the financial tests and other provisions that the Agency is continuing to evaluate, the notice included proposed changes to the wording of the financial assurance instruments in Sec. 264.151 that differ from the language in today's rule. Today's rule amends the language of the financial assurance instruments only to the extent necessary to reflect amendments to Secs.
264.143, 264.145, and 264.147, and Secs. 265.143, 265.145, 265.147.

B. Claims Reporting Requirement

As is discussed above, the September 1, 1988 rule established in Secs. 264.147 and 265.147 a requirement that owners and operators report, in writing, to the Regional Administrator whenever: (1) A claim for bodily injury or property damages caused by the operation of a hazardous waste management facility is made against the owner, operator, or instrument providing financial assurance for liability coverage; and (2) the amount of financial assurance for liability coverage is reduced. In its complaint filed in response to the September 1, 1988 rulemaking, CWM asserted that the claims reporting requirement, as worded, was overly broad and thereby unduly burdensome. CWM argued that it required reporting of every claim filed against the owner or operator, no matter how valid.

This reporting requirement was intended to provide the Agency with early warning of potential instrument failure due to pending claims and to

provide the Agency with data concerning the incidence of third party claims. EPA certainly did not intend the interpretation of this provision suggested by CWM. Instead, in a memorandum, from Sylvia K. Lowrance to the RCRA Branch Chiefs, of January 25, 1990, EPA clarified that it expected reporting of valid claims only. Today's rule revises Secs. 264.147(a)(2), 264.147(b)(2), 265.147(a)(2), and 265.147(b)(2) to clarify that intent and require reporting of third party claims only when: (1) a claim results in reduction of the amount of an instrument; (2) a Certification of Valid Claim is entered between the owner or operator and third party claimant; or (3) a final court order establishing a judgment is issued.

In general, comments generally favored the revised claims reporting requirement. Commentors felt that the revised reporting requirement would clarify the types of claims that need to be reported to the Regional Administrator. However, one commentor felt that "Certification of Valid Claim" was not defined clearly enough. This commentor should note the regulatory language of Sec. 264.151 (h)(2), (k), (l), (m), and (n). In those sections, the Agency has established precise language for a Certification of Valid Claim. This language is not modified by today's rule. In light of the precise language in Sec. 264.151, the Agency disagrees that further clarification of the term, "Certification of Valid Claim", is required.

Another commentor expressed concern that States that have adopted the September 1, 1988 reporting requirement will not adopt the revised reporting requirement contained in this rule. The Agency understands this commentor's concern. However, as was discussed in the preamble of the July 1, 1992 proposal, the revised rule language promulgated today is not more stringent than the claims reporting requirement of the September 1, 1988 rule. Because authorized States can have requirements that are more stringent than the Federal program, States are free to interpret the September 1, 1988 language more broadly than EPA does. This is explained in more detail in the Effect of Rule on State Authorization section found later in this notice. However, the Agency urges States to accept the interpretation of EPA's January 25, 1990 memorandum and adopt the specific language promulgated today.

C. Standby Trust for Owners and Operators Who Use a Letter of Credit to Demonstrate Liability Coverage

The September 1, 1988 rule, discussed above, required that: (1) owners or operators using letters of credit to demonstrate liability coverage designate third-party claimants as beneficiaries in the event of a valid claim, and (2) the issuer of the letter of credit determine whether a claim against the instrument is valid and should be paid. In the February 23, 1990 settlement agreement with CWM, the Agency agreed to amend the letter of credit requirements (Secs. 264.147(h) and 265.147(h)) and the language of the letter of credit mechanism (Sec. 264.151(k)) to allow for the creation of a standby trust fund and the designation of an independent trustee as beneficiary.
Thus, the trustee, rather than the issuer of the letter of credit, is responsible for distributing funds to the claimants when a claim for damages is filed against the owner or operator.

This rule promulgates those changes to the letter of credit instrument by adding new Secs. 264.147(1), 265.147(1) and 264.151(n) relating

specifically to the requirements and instrument language of the standby trust. The Agency believes that these revisions make the letter of credit more available to owners and operators without reducing its integrity.

Commentors generally favored the addition of this financial instrument to those currently available for use by owners and operators to demonstrate financial responsibility.

One commentor expressed concern that the letter of credit with standby trust mechanism would replace the letter of credit mechanism that is currently allowed for use by owners and operators. The Agency reiterates that the letter of credit mechanism with a standby trust is an additional mechanism that owners and operators can use to demonstrate financial responsibility.

One commentor suggested several modifications to the wording of the letter of credit with standby trust instrument that were unrelated to creation of the standby trust. The Agency did not, in proposing this rule, contemplate modification to its existing financial assurance mechanisms, and did not, therefore, solicit comment on those types of changes. Other wording changes were made that were minor and not addressed by this commentor. Therefore the suggestions received from the commentor are outside the scope of this rule, but the Agency does note these suggested wording changes and may address them at a later date. The wording changes suggested by this commentor are potentially major and need to be fully assessed by the Agency before it can consider proposing them.

D. Instruments Available to Owners and Operators that no Longer Meet the Requirements of the Financial Test

The Agency is also promulgating, as proposed, conforming changes to Secs. 264.147(f)(6) and 265.147(f)(6). Before these changes, those sections required owners or operators that have been using the financial test to assure for third party liability, but no longer meet the requirements of the test, to obtain insurance. Today's rule expands the available instruments to allow those owners and operators to obtain insurance or a letter of credit, surety bond, trust fund, or a guarantee. EPA received no comments on this issue. These conforming changes implement the intent of the September 1, 1988 rule expanding the allowable instruments for third party liability coverage.

III. The Expanded Guarantee for Demonstrating Financial Assurance for Closure and Post-Closure Care

The use of a parent corporate guarantee for liability coverage was authorized in the interim final rule on July 11, 1986 (51 FR 25350) and promulgated as a final regulation on November 18, 1987 (52 FR 44314). Several commentors on the interim final rule urged EPA to allow non-parent firms to provide guarantees. After analyzing the validity and enforceability of guarantee contracts by non-parent firms, the Agency in the September 1, 1988 rulemaking discussed earlier in this preamble, authorized guarantees for third-party liability coverage provided by: (1) Corporate grandparents, (2) corporate "sibling" firms, and (3) firms with a "substantial business relationship" with the owner or operator. Further discussion of the parent guarantee can be found in the September 1, 1988 rule (53 FR 33938).

Since authorizing the non-parent guarantee as an allowable mechanism for third-party liability coverage, the Agency has received many requests to extend its use to closure and post-closure care financial responsibility requirements. This rule revises Secs. 264.143, 264.145, 265.143 and 265.145 to allow the same non-parent guarantee for closure and post-closure as is currently allowed for third-party liability.

In general, commentors generally favored expanding the use of the non-parent guarantee mechanism to owners and operators who wish to demonstrate financial responsibility for closure and post-closure care.

One commentor felt that the expanded non-parent guarantee should be classified as more stringent than the current rule. The Agency disagrees. A program that allows an additional instrument for compliance is less stringent than a program that does not allow the use of that instrument. Thus, though this rule expands the allowable instruments under the Federal program, the States can choose whether or not to adopt it. This is explained in more detail in the Effect of Rule on State Authorization section found later in this notice.

IV. Effective Date

Today's rule is effective immediately. Section 3010(b) of RCRA provides that regulations respecting permits for the treatment, storage, or disposal of hazardous waste shall take effect six months after the date of promulgation. However, section 3010(b)(1) of the RCRA allows EPA to shorten the time to the effective date if the Agency finds that the regulated community does not need six months to come into compliance with the new regulation.

The provisions of this rule either reduce the regulatory burden or provide additional flexibility in complying with the regulations for owners and operators.

As a result, the Agency finds that the regulated community does not need six months to come into compliance. Hence, today's rule is immediately effective under section 553(d) of the Administrative Procedure Act.

V. State Authorization

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State (See 40 CFR part 271 for the standards and requirements for authorization). Following authorization, the Agency retains enforcement authority under sections 3008, 7003, and 3013 of RCRA, although authorized States have primary enforcement responsibility.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program entirely in lieu of the Federal program. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in a State where the State was authorized to permit. When new, more

stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized States until the State adopted the requirements as state law.

In contrast, under section 3006(g) of RCRA, 42 U.S.C. 6926(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out those requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as state law to retain final authorization, the HSWA requirements and prohibitions apply in authorized States in the interim.

B. Effect of Rule on State Authorization

Today's rule proposes standards that are not effective in authorized States because the requirements are not imposed pursuant to HSWA. Thus, the requirements are applicable only in those States that do not have final authorization. In authorized States, the requirements will not be applicable until the State revises its program to adopt equivalent requirements under state law.

In general, 40 CFR 271.21(e)(2) requires States that have final authorization to modify their programs to reflect Federal program changes and to subsequently submit the modifications to EPA for approval. It should be noted, however, that authorized States are only required to modify their programs when EPA promulgates Federal standards that are more stringent or broader in scope than the existing Federal standards. Section 3009 of RCRA allows States to impose standards more stringent than those in the Federal program. For those Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs (See 40 CFR 271.1(i)).

The provisions of today's rule that expand the allowable instruments for demonstrating financial assurance are less stringent than the current program. Those provisions are: (1) Revisions to Sec. 264.147(h) (4) and (5), Secs. 265.147(h) (4) and (5), and 264.151(k), and addition of new Sec. 264.151(n), which provide for the use of a stand-by trust with the letter of credit to demonstrate financial assurance for liability coverage requirements; and (2) revisions to Secs. 264.147(f)(6) and 265.147(f)(6), which expand the mechanisms available to owners and operators that no longer meet the requirements of the financial test for liability coverage; and (3) revisions to Secs. 264.143(f)(10), 264.145(f)(11), 265.143(e)(11), and 265.145(e)(11), which expand the use of the non-parent guarantee to owners or operators demonstrating financial assurance for closure and post-closure care. For these Federal program changes that are less stringent or reduce the scope of the Federal program, an authorized State is not required to modify its authorized program. If the State does modify its program, EPA must approve the modification for the state requirements to become Subtitle C RCRA requirements.

The September 1, 1988 rule related to liability coverage established a claims reporting requirement at Secs. 264.147(a)(7) and (b)(7) and 265.147(a)(7) and (b)(7). The preamble characterized all provisions of that rule as less stringent and, therefore, authorized States were not required

to adopt the new provisions, including the claims reporting requirement. However, upon further consideration the Agency has determined that this claims reporting requirement was, in fact, more stringent than the Federal program in effect before that time because there was no reporting requirement before that time.

Because the claims reporting requirement of Secs. 264.147(a)(7), 264.147(b)(7), 265.147(a)(7), and 265.147(b)(7) was more stringent than the Federal Program in place prior to the September 1, 1988 rule, States should have been required to modify their programs to include it in order to maintain an equivalent program. In accordance with Sec. 271.21(e)(2), the deadline for States to modify their program to reflect changes adopted on September 1, 1988 was July 1, 1990. However, the States were not notified of this obligation since the rule was originally classified as less stringent.

Because of the confusion related to the stringency characterization of the claims reporting requirement and the fact that the Agency is in the process of clarifying that requirement, the Agency will, for purposes of determining applicable deadlines under Sec. 271.21(e)(2), treat the claims reporting requirement of the September 1, 1988 rule as if it were promulgated and amended today. This means that the deadline for adopting the provision is the applicable deadline under Sec. 271.21(e)(2) for today's final rule. States that have not yet adopted the reporting requirement of the September 1, 1988 rule should not do so but should adopt the clarified version promulgated today. In addition, States whose programs have been modified to adopt the current claims reporting requirement but wish to adopt the clarified reporting requirement should follow the deadlines of 40 CFR 271.21(e)(2) for today's final rule.

The revisions to the claims reporting requirement that are promulgated today, however, are not more stringent than the current claims reporting requirement at Secs. 264.147(a)(7) and (b)(7) and 265.147(a)(7) and (b)(7) promulgated in the September 1, 1988 rule. Therefore, States that have already adopted the current claims reporting requirement are not required to adopt the clarified reporting requirement, though EPA urges them to do so.

A commentor suggested that the Agency's treatment of the revised claims notification language as not being more stringent than the language promulgated on September 1, 1988 imposed an arbitrary and unreasonable burden on the regulated community. The commentor believed that EPA's determination that the proposed language was not more stringent than the September 1, 1988 language would require the regulated community to challenge 50 state rules in litigation in 50 States. In the commentor's view, the Agency should vacate the claims reporting provisions of the September 1, 1988 rule, vacate approvals of state program revisions that adopted the September 1, 1988 language, and require States to change their rules to conform to the newly promulgated language.

EPA carefully considered commentor's views and concerns about the state authorization aspects of today's final rule and has determined that it does not have the authority to grant the relief that commentor suggests. Under RCRA section 3009, the Agency cannot require a State to adopt today's language if the State has a claims reporting provisions that is broader (or that the State interprets as being broader) than that required by the RCRA program. However, EPA has taken several steps that it believes will be effective in minimizing the likelihood of and need for the excessive

litigation suggested by the commentor. First, on January 25, 1990, EPA issued a memorandum from Sylvia K. Lowrance to the RCRA Branch Chiefs entitled "Clarification of 40 CFR 264.147(a)(7), (b)(7), and Sec. 265.147(a)(7), (b)(7)" in which EPA interpreted the September 1, 1988 language (see Docket Number 91-RCFP-FFFFF). This guidance on implementing the 1988 reporting requirement directs States and Regions to require reporting of only valid claims, that is, those required by today's revised reporting requirement.

Thus, in States, that have adopted the 1988 reporting requirement and are following the guidance set forth in the January 25, 1990 memorandum, a failure to revise the state program to adopt today's provisions would have no practical effect on owners and operators (though for purposes of clarity the Agency encourages those States to adopt today's provision).

There are other factors that should reduce the problem cited by the commentor. First, many States have not yet adopted the language of the September 1, 1988 rule; these States will be able to obtain approval by submitting today's language and need not submit the September 1, 1988 language. Second, many States that adopted the September 1, 1988 claims reporting provision automatically conform their regulations and statutes to the provisions of the Federal program; therefore, these States will adopt today's clarified language in due course without litigation. Third, many of the States that adopted the September 1, 1988 language, obtained authorization, and do not automatically use the Federal regulatory language, will want to adopt today's clarification. Therefore, EPA believes the regulated community will not need to challenge these state rules as applied.

For the few States that have adopted the September 1, 1988 provision, that interpret the language more expansively than EPA, and that wish to retain that language, EPA lacks a legal and practical mechanism for requiring these States to adopt today's language. EPA cannot require States to modify their programs to comply with less stringent Federal program changes. However, for the reasons discussed above, EPA anticipates that there will be far fewer States in this position than the commentor suggests.

VI. Regulatory Analysis

A. Regulatory Impact Analysis

Under Executive Order 12291, EPA must determine whether a regulation is "major" and thus whether it must prepare and consider a Regulatory Impact Analysis in connection with the rule. Today's rule is not major because it will not result in an annual effect on the economy of $100 million or more, nor will it result in an increase in costs or prices to industry. There will be no adverse impact on the ability of U.S.-based enterprises to compete with foreign-based enterprises in domestic or export markets. Therefore the Agency has not prepared a Regulatory Impact Analysis for today's rule. This rule has been reviewed by the Office of Management and Budget in accordance with Executive Order 12291.

B. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq. at the time an Agency publishes a proposed or final rule, it must prepare a Regulatory

Flexibility Analysis that describes the impact of the rule on small entities, unless the Administrator certifies that the rule will not have a significant economic impact on a substantial number of small entities. Today's rule expands the instruments available for owner or operator to demonstrate financial responsibility. Therefore, pursuant to 5 U.S.C. 601b, I certify that this regulation will not have a significant economic impact on a substantial number of small entities.

Dated: September 4, 1992.

F. Henry Habicht II,
Acting Administrator.

List of Subjects

40 CFR Part 264

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds.

40 CFR Part 265

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds, Water supply.

40 CFR part 264 is amended as follows:

PART 264--STANDARDS FOR OWNERS OR OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

2. Section 264.143 is amended by revising the introductory text of paragraph (f)(10) to read as follows:

264.143 Financial assurance for closure.

* * * * *

(f) * * *
(10) An owner or operator may meet the requirements of this section by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (8) of this section and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Sec. 264.151(h). The certified copy of the

guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

* * * * *

3. Section 264.145 is amended by revising the introductory text of paragraph (f)(11) to read as follows:

Sec. 264.145 Financial assurance for post-closure care.

* * * * *

(f) * * *

(11) An owner or operator may meet the requirements for this section by obtaining a written guarantee. The guarantor must be the direct of higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (9) of this section and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Sec. 264.151(h). A certified copy of the guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

* * * * *

4. Section 264.147 is amended by revising paragraphs (a)(7), (b)(7), and (f)(6) and by adding new paragraphs (h)(4) and (h)(5) to read as follows:

Sec. 264.147 Liability requirements.

(a) * * *

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days whenever:

(i) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in paragraphs (a)(1) through (a)(6) of this section; or

(ii) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under paragraphs (a)(1) through (a)(6) of this section; or

(iii) A final court order establishing a judgment for bodily injury or

property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under paragraphs (a)(1) through (a)(6) of this section.

(b) * * *

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days whenever:

(i) A Claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in paragraphs (b)(1) through (b)(6) of this section; or

(ii) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under paragraphs (b)(1) through (b)(6) of this section; or

(iii) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under paragraphs (b)(1) through (b)(6) of this section.

* * * * *

(f) * * *

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must obtain insurance, a letter of credit, a surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in this section. Evidence of liability coverage must be submitted to the Regional Administrator within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

* * * * *

(h) * * *

(4) An owner or operator who uses a letter of credit to satisfy the requirements of this section may also establish a standby trust fund. Under the terms of such a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(5) The wording of the standby trust fund must be identical to the wording specified in Sec. 264.151(n).

* * * * *

5. Section 264.151 is amended by revising paragraphs (f), (g), (h), and (k) and adding a new paragraph (n) to read as follows:

Sec. 264.151 Wording of the instruments.

* * * * *

(f) A letter from the chief financial officer, as specified in Sec. 264.143(f) or 264.145(f), or Sec. 265.143(e) or 265.143(e) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Letter From Chief Financial Officer

(Address to Regional Administrator of every Region in which facilities for which financial responsibility is to be demonstrated through the financial test are located).

I am the chief financial officer of (name and address of firm). This letter is in support of this firm's use of the financial test to demonstrate financial assurance for closure and/or post-closure costs, as specified in subpart H of 40 CFR parts 264 and 265.

(Fill out the following five paragraphs regarding facilities and associated cost estimates. If your firm has no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care).

1. This firm is the owner or operator of the following facilities for which financial assurance for closure or post-closure care is demonstrated through the financial test specified in subpart H of 40 CFR parts 264 and 265. The current closure and/or post-closure cost estimates covered by the test are shown for each facility: .

2. This firm guarantees, through the guarantee specified in subpart H of 40 CFR parts 264 and 265, the closure or post-closure care of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: . The firm identified above is (insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee ; or (3) engaged in the following substantial business relationship with the owner or operator , and receiving the following value in consideration of this guarantee). (Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter).

3. In States where EPA is not administering the financial requirements of subpart H of 40 CFR part 264 or 265, this firm, as owner or operator or guarantor, is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in subpart H of 40 CFR parts 264 and 265. The current closure and/or post-closure cost estimates covered by such a test are shown for each facility: .

4. This firm is the owner or operator of the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to EPA or a State through the financial test or any other financial assurance mechanism specified in subpart H of 40 CFR parts 264 and 265 or equivalent or substantially equivalent State mechanisms. The current closure and/or post- closure cost estimates not covered by such financial assurance are shown for each facility: .

5. This firm is the owner or operator of the following UIC facilities for which financial assurance for plugging and abandonment is required under part 144. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: .

This firm (insert "is required" or "is not required") to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on (month, day). The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended (date).

(Fill in Alternative I if the criteria of paragraph (f)(1)(i) of Sec. 264.143 or Sec. 264.145, or of paragraph (e)(1)(i) of Sec. 265.143 or Sec. 265.145 of this chapter are used. Fill in Alternative II if the criteria of paragraph (f)(1)(ii) of Sec. 264.143 or Sec. 264.145, or of paragraph (e)(1)(ii) of Sec. 265.143 or Sec. 265.145 of this chapter are used.)

Alternative I

1. Sum of current closure and post-closure cost estimate (total of all cost estimates shown in the five paragraphs above) $
* 2. Total liabilities (if any portion of the closure or post-closure cost estimates is included in total liabilities, you may deduct the amount of that portion from this line and add that amount to lines 3 and 4)$
*3. Tangible net worth $
*4. Net worth $
*5. Current assets $
*6. Current liabilities $
7. Net working capital (line 5 minus line 6) $
*8. The sum of net income plus depreciation, depletion, and amortization $

*9. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) $
10. Is line 3 at least $10 million? (Yes/No)
11. Is line 3 at least 6 times line 1? (Yes/No)
12. Is line 7 at least 6 times line 1? (Yes/No)
*13. Are at least 90% of firm's assets located in the U.S.? If not, complete line 14 (Yes/No)
14. Is line 9 at least 6 times line 1? (Yes/No)
15. Is line 2 divided by line 4 less than 2.0? (Yes/No)
16. Is line 8 divided by line 2 greater than 0.1? (Yes/No)
17. Is line 5 divided by line 6 greater than 1.5? (Yes/No)

Alternative II

1. Sum of current closure and post-closure cost estimates (total of all cost estimates shown in the five paragraphs above) $
2. Current bond rating of most recent issuance of this firm and name of rating service
3. Date of issuance of bond
4. Date of maturity of bond
*5. Tangible net worth (if any portion of the closure and post-closure cost estimates is included in "total liabilities" on your firm's financial statements, you may add the amount of that portion to this line) $
*6. Total assets in U.S. (required only if less than 90% of firm's assets are located in the U.S.) $
7. Is line 5 at least $10 million ? (Yes/No)
8. Is line 5 at least 6 times line 1? (Yes/No)
*9. Are at least 90% of firm's assets located in the U.S.? If not, complete line 10 (Yes/No)
10. Is line 6 at least 6 times line 1? (Yes/No)
I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR 264.151(f) as such regulations were constituted on the date shown immediately below.

(Signature)----------

(g) A letter from the chief financial officer, as specified in Sec. 264.147(f) or Sec. 265.147(f) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

Letter From Chief Financial Officer

(Address to Regional Administrator of every Region in which facilities for which financial responsibility is to be demonstrated through the financial test are located).

I am the chief financial officer of (firm's name and address). This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage (insert "and closure and/or post-closure care" if applicable) as specified in subpart H of 40 CFR parts 264 and 265.

(Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, and address).

The firm identified above is the owner or operator of the following facilities for which liability coverage for (insert "sudden" or "nonsudden" or "both sudden and nonsudden") accidental occurrences is being demonstrated through the financial test specified in subpart H of 40 CFR parts 264 and 265:

The firm identified above guarantees, through the guarantee specified in subpart H of 40 CFR parts 264 and 265, liability coverage for (insert "sudden" or "nonsudden" of "both sudden and nonsudden") accidental occurrences at the following facilities owned or operated by the following:

. The firm identified above is (insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee ; or (3) engaged in the following substantial business relationship with the owner or operator , and receiving the following value in consideration of this guarantee). (Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.)

(If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following five paragraphs regarding facilities and associated closure and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA identification number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.)

1. The firm identified above owns or operates the following facilities for which financial assurance for closure or post-closure care or liability coverage is demonstrated through the financial test specified in subpart H of 40 CFR parts 264 and 265. The current closure and/or post-closure cost estimate covered by the test are shown for each facility: .

2. The firm identified above guarantees, through the guarantee specified in subpart H of 40 CFR parts 264 and 265, the closure and post-closure care or liability coverage of the following facilities owned or operated by the guaranteed party. The current cost estimates for closure or post-closure care so guaranteed are shown for each facility: .

3. In States where EPA is not administering the financial requirements of subpart H of 40 CFR parts 264 and 265, this firm is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in subpart H or 40 CFR parts 264 and 265. The current closure or post-closure cost estimates covered by such a test are shown for each facility: .

4. The firm identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to EPA or a State through the financial test or any other financial assurance mechanisms specified in subpart H of 40 CFR parts 264 and 265 or equivalent or substantially equivalent State mechanisms. The current closure and/or post- closure cost estimates not covered by such financial assurance are shown for each facility: .

5. This firm is the owner or operator or guarantor of the following UIC facilities for which financial assurance for plugging and abandonment is required under part 144 and is assured through a financial test. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: .

This firm (insert "is required" or "is not required") to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on (month, day). The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended (date).

Part A. Liability Coverage for Accidental Occurrences

(Fill in Alternative I if the criteria of paragraph (f)(1)(i) of Sec. 264.147 or Sec. 265.147 are used. Fill in Alternative II if the criteria of paragraph (f)(1)(ii) of Sec. 264.147 or Sec. 265.147 are used.)

Alternative I

1. Amount of annual aggregate liability coverage to be demonstrated $.

*2. Current assets $.

*3. Current $.

4. Net working capital (line 2 minus line 3) $.

*5. Tangible net worth $.

*6. If less than 90% of assets are located in the U.S., give total U.S. assets $.

7. Is line 5 at least $10 million? (Yes/No) .

8. Is line 4 at least 6 times line 1? (Yes/No) .

9. Is line 5 at least 6 times line 1? (Yes/No) .

*10. Are at least 90% of assets located in the U.S.? (Yes/No) . If not, complete line 11.

11. Is line 6 at least 6 times line 1? (Yes/No) .

Alternative II

1. Amount of annual aggregate liability coverage to be demonstrated $.

2. Current bond rating of most recent issuance and name of rating service .

3. Date of issuance of bond .

4. Date of maturity of bond .

*5. Tangible net worth $.

*6. Total assets in U.S. (required only if less than 90% of assets are located in the U.S.) $.

7. Is line 5 at least $10 million? (Yes/No) .

8. Is line 5 at least 6 times line 1? .

9. Are at least 90% of assets located in the U.S.? If not, complete line 10. (Yes/No) .

10. Is line 6 at least 6 times line 1? .

(Fill in part B if you are using the financial test to demonstrate assurance of both liability coverage and closure or post-closure care.)

Part B. Closure or Post-Closure Care and Liability Coverage

(Fill in Alternative I if the criteria of paragraphs (f)(1)(i) of Sec. 264.143 or Sec. 264.145 and (f)(1)(i) of Sec. 264.147 are used or if the criteria of paragraphs (e)(1)(i) of Sec. 265.143 or Sec. 265.145 and (f)(1)(i) of Sec. 265.147 are used. Fill in Alternative II if the criteria of paragraphs (f)(1)(ii) of Sec. 264.143 or Sec. 264.145 and (f)(1)(ii) of Sec. 264.147 are used or if the criteria of paragraphs (e)(1)(i) of Sec. 265.143 or Sec. 265.145 and (f)(1)(ii) of Sec. 265.147 are used.)

Alternative I

1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above) $
2. Amount of annual aggregate liability coverage to be demonstrated $
3. Sum of lines 1 and 2 $
*4. Total liabilities (if any portion of your closure or post-closure cost estimates is included in your total liabilities, you may deduct that portion from this line and add that amount to lines 5 and 6) $
*5. Tangible net worth $
*6. Net worth $
*7. Current assets $
*8. Current liabilities $
9. Net working capital (line 7 minus line 8) $
10. The sum of net income plus depreciation, depletion, and amortization $

*11. Total assets in U.S. (required only if less than 90% of assets are located in the U.S.) $
12. Is line 5 at least $10 million? (Yes/No)
13. Is line 5 at least 6 times line 3? (Yes/No)
14. Is line 9 at least 6 times line 3? (Yes/No)
*15. Are at least 90% of assets located in the U.S.? (Yes/No) If, not, complete line 16.

16. Is line 11 at least 6 times line 3? (Yes/No)
17. Is line 4 divided by line 6 less than 2.0? (Yes/No)
18. Is line 10 divided by line 4 greater than 0.1? (Yes/No)
19. Is line 7 divided by line 8 greater than 1.5? (Yes/No)

Alternative II

1. Sum of current closure and post-closure cost estimates (total of all cost estimates listed above) $
2. Amount of annual aggregate liability coverage to be demonstrated $
3. Sum of lines 1 and 2 $
4. Current bond rating of most recent issuance and name of rating service

5. Date of issuance of bond
6. Date of maturity of bond
*7. Tangible net worth (if any portion of the closure or post-closure cost

estimates is included in "total liabilities" on your financial statements you may add that portion to this line) $

*8. Total assets in the U.S. (required only if less than 90% of assets are located in the U.S.) $

9. Is line 7 at least $10 million? (Yes/No)

10. Is line 7 at least 6 times line 3? (Yes/No)

*11. Are at least 90% of assets located in the U.S.? (Yes/No) If not complete line 12.

12. Is line 8 at least 6 times line 3? (Yes/No)

I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR 264.151(g) as such regulations were constituted on the date shown immediately below.

(Signature)----------

(h)(1) A corporate guarantee, as specified in Sec. 264.143(f) or Sec. 264.145(f), or Sec. 265.143(e) or Sec. 265.145(e) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Corporate Guarantee for Closure or Post-Closure Care

Guarantee made this (date) by (name of guaranteeing entity), a business corporation organized under the laws of the State of (insert name of State), herein referred to as guarantor. This guarantee is made on behalf of the (owner or operator) of (business address), which is (one of the following: "our subsidiary"; "a subsidiary of (name and address of common parent corporation), of which guarantor is a subsidiary"; or "an entity with which guarantor has a substantial business relationship, as defined in 40 CFR (either 264.141(h) or 265.141(h))" to the United States Environmental Protection Agency (EPA).

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 40 CFR 264.143(f), 264.145(f), 265.143(e), and 265.145(e).

2. (Owner or operator) owns or operates the following hazardous waste management facility(ies) covered by this guarantee: (List for each facility: EPA Identification Number, name, and address. Indicate for each whether guarantee is for closure, post-closure care, or both.)

3. "Closure plans" and "post-closure plans" as used below refer to the plans maintained as required by subpart G of 40 CFR parts 264 and 265 for the closure and post-closure care of facilities as identified above.

4. For value received from (owner or operator), guarantor guarantees to EPA that in the event that (owner or operator) fails to perform (insert "closure," "post-closure care" or "closure and post-closure care") of the above facility(ies) in accordance with the closure or post-closure plans and other permit or interim status requirements whenever required to do so, the guarantor shall do so or establish a trust fund as specified in subpart H of 40 CFR part 264 or 265, as applicable, in the name of (owner or operator) in the amount of the current closure or post-closure cost estimates as specified in subpart H of 40 CFR parts 264 and 265.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and to (owner or operator) that he intends to provide alternate financial assurance as specified in subpart H of 40 CFR part 264 or 265, as applicable, in the name of (owner or operator). Within 120 days after the end of such fiscal year, the guarantor shall establish such financial assurance unless (owner or operator) has done so.

6. The guarantor agrees to notify the EPA Regional Administrator by certified mail, of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by an EPA Regional Administrator of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor of closure or post-closure care, he shall establish alternate financial assurance as specified in subpart H of 40 CFR part 264 or 265, as applicable, in the name of (owner or operator) unless (owner or operator) has done so.

8. Guarantor agrees to remain bound under this guarantee notwithstanding any or all of the following: amendment or modification of the closure or post-closure plan, amendment or modification of the permit, the extension or reduction of the time of performance of closure or post-closure, or any other modification or alteration of an obligation of the owner or operator pursuant to 40 CFR part 264 or 265.

9. Guarantor agrees to remain bound under this guarantee for as long as (owner or operator) must comply with the applicable financial assurance requirements of subpart H of 40 CFR parts 264 and 265 for the above-listed facilities, except as provided in paragraph 10 of this agreement.

10. (Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator):
Guarantor may terminate this guarantee by sending notice by certified mail to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and to (owner or operator), provided that this guarantee may not be terminated unless and until (the owner or operator) obtains, and the EPA Regional Administrator(s) approve(s), alternate closure and/or post-closure care coverage complying with 40 CFR 264.143, 264.145, 265.143, and/or 265.145.

(Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with its owner or operator)

Guarantor may terminate this guarantee 120 days following the receipt of notification, through certified mail, by the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and by (the owner or operator).

11. Guarantor agrees that if (owner or operator) fails to provide alternate financial assurance as specified in subpart H of 40 CFR part 264 or 265, as applicable, and obtain written approval of such assurance from the EPA Regional Administrator(s) within 90 days after a notice of cancellation by the guarantor is received by an EPA Regional Administrator from guarantor, guarantor shall provide such alternate financial assurance in the name of (owner or operator).

12. Guarantor expressly waives notice of acceptance of this guarantee by the EPA or by (owner or operator). Guarantor also expressly waives notice of amendments or modifications of the closure and/or post-closure plan and of amendments or modifications of the facility permit(s).

I hereby certify that the wording of this guarantee is identical to the wording specified in 40 CFR 264.151(h) as such regulations were constituted on the date first above written.

Effective date:----------
--- (Name of guarantor)----------

(Authorized signature for guarantor)----------

(Name of person signing)----------

(Title of person signing)----------

Signature of witness or notary:----------
---

(2) A guarantee, as specified in Sec. 264.147(g) or Sec. 265.147(g) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Guarantee for Liability Coverage

Guarantee made this (date) by (name of guaranteeing entity), a business corporation organized under the laws of (if incorporated within the United States insert "the State of " and insert name of State; if incorporated outside the United States insert the name of the country in which incorporated, the principal place of business within the United States, and the name and address of the registered agent in the State of the principal place of business), herein referred to as guarantor. This guarantee is made on behalf of (owner or operator) of (business address), which is one of the following: "our subsidiary;" "a subsidiary of (name and address of common parent corporation), or which guarantor is a subsidiary;" or "an entity with which guarantor has a substantial business relationship, as defined in 40 CFR (either 264.141(h))", to any and all third parties who have sustained or may sustain bodily injury or property damage caused by (sudden and/or nonsudden) accidental occurrences arising from operation of the facility(ies) covered by this guarantee.

Recitals

1. Guarantor meets or exceeds the financial test criteria and agrees to comply with the reporting requirements for guarantors as specified in 40 CFR 264.147(g) and 265.147(g).

2. (Owner or operator) owns or operates the following hazardous waste management facility(ies) covered by this guarantee: (List for each facility: EPA identification number, name, and address; and if guarantor is incorporated outside the United States list the name and address of the guarantor's registered agent in each State.) This corporate guarantee satisfies RCRA third-party liability requirements for (insert "sudden" or "nonsudden" or "both sudden and nonsudden") accidental occurrences in above- named owner or operator facilities for coverage in the amount of (insert dollar amount) for each occurrence and (insert dollar amount) annual aggregate.

3. For value received from (owner or operator), guarantor guarantees to any and all third parties who have sustained or may sustain bodily injury or property damage caused by (sudden and/or nonsudden) accidental occurrences arising from operations of the facility(ies) covered by this guarantee that in the event that (owner or operator) fails to satisfy a judgment or award based on a determination of liability for bodily injury or property damage to third parties caused by (sudden and/or nonsudden) accidental occurrences, arising from the operation of the above-named facilities, or fails to pay an amount agreed to in settlement of a claim arising from or alleged to arise from such injury or damage, the guarantor will satisfy such judgment(s), award(s) or settlement agreement(s) up to the limits of coverage identified above.

4. Such obligation does not apply to any of the following:
(a) Bodily injury or property damage for which (insert owner or operator) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert owner or operator) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert owner or operator) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:
(1) An employee of (insert owner or operator) arising from, and in the course of, employment by (insert owner or operator); or
(2) The spouse, child, parent, brother, or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert owner or operator). This exclusion applies:
(A) Whether (insert owner or operator) may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:
(1) Any property owned, rented, or occupied by (insert owner or operator);
(2) Premises that are sold, given away or abandoned by (insert owner or operator) if the property damage arises out of any part of those premises;
(3) Property loaned to (insert owner or operator);

(4) Personal property in the care, custody or control of (insert owner or operator);
(5) That particular part of real property on which (insert owner or operator) or any contractors or subcontractors working directly or indirectly on behalf of (insert owner or operator) are performing operations, if the property damage arises out of these operations.

5. Guarantor agrees that if, at the end of any fiscal year before termination of this guarantee, the guarantor fails to meet the financial test criteria, guarantor shall send within 90 days, by certified mail, notice to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and to (owner or operator) that he intends to provide alternate liability coverage as specified in 40 CFR 264.147 and 265.147, as applicable, in the name of (owner or operator). Within 120 days after the end of such fiscal year, the guarantor shall establish such liability coverage unless (owner or operator) has done so.

6. The guarantor agrees to notify the EPA Regional Administrator by certified mail of a voluntary or involuntary proceeding under title 11 (Bankruptcy), U.S. Code, naming guarantor as debtor, within 10 days after commencement of the proceeding.

7. Guarantor agrees that within 30 days after being notified by an EPA Regional Administrator of a determination that guarantor no longer meets the financial test criteria or that he is disallowed from continuing as a guarantor, he shall establish alternate liability coverage as specified in 40 CFR 264.147 or 265.147 in the name of (owner or operator), unless (owner or operator) has done so.

8. Guarantor reserves the right to modify this agreement to take into account amendment or modification of the liability requirements set by 40 CFR 264.147 and 265.147, provided that such modification shall become effective only if a Regional Administrator does not disapprove the modification within 30 days of receipt of notification of the modification.

9. Guarantor agrees to remain bound under this guarantee for so long as (owner or operator) must comply with the applicable requirements of 40 CFR 264.147 and 265.147 for the above-listed facility(ies), except as provided in paragraph 10 of this agreement.

10. (Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator):
Guarantor may terminate this guarantee by sending notice by certified mail to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and to (owner or operator), provided that this guarantee may not be terminated unless and until (the owner or operator) obtains, and the EPA Regional Administrator(s) approve(s), alternate liability coverage complying with 40 CFR 264.147 and/or 265.147.

(Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with the owner or operator):
Guarantor may terminate this guarantee 120 days following receipt of notification, through certified mail, by the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and by (the owner or operator).

11. Guarantor hereby expressly waives notice of acceptance of this guarantee by any party.

12. Guarantor agrees that this guarantee is in addition to and does not affect any other responsibility or liability of the guarantor with respect to the covered facilities.

13. The Guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents:
(a) Certification from the Principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties (insert Principal) and (insert name and address of third-party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating (Principal's hazardous waste treatment, storage, or disposal facility should be paid in the amount of $.

(Signatures)----------
Principal----------

(Notary) Date----------
(Signatures)----------
Claimant(s)----------
(Notary) Date----------

(b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered (insert "primary" or "excess") coverage.

I hereby certify that the wording of the guarantee is identical to the wording specified in 40 CFR 264.151(h)(2) as such regulations were constituted on the date shown immediately below.

Effective date:----------
(Name of guarantor)----------
(Authorized signature for guarantor)----------

(Name of person signing)----------

(Title of person signing)----------

Signature of witness of notary:----------
---
* * * * *

(k) A letter of credit, as specified in Sec. 264.147(h) or 265.147(h) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Irrevocable Standby Letter of Credit
Name and Address of Issuing Institution----------

Regional Administrator(s)----------

Region(s)----------

U.S. Environmental Protection Agency----------

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. in the favor of ("any and all third-party liability claimants" or insert name of trustee of the standby trust fund), at the request and for the account of (owner or operator's name and address) for third-party liability awards or settlements up to (in words) U.S. dollars $ per occurrence and the annual aggregate amount of (in words) U.S.
dollars $, for sudden accidental occurrences and/or for third-party liability awards or settlements up to the amount of (in words) U.S. dollars $ per occurrence, and the annual aggregate amount of (in words) U.S.
dollars $, for nonsudden accidental occurrences available upon presentation of a sight draft bearing reference to this letter of credit No.
, and (insert the following language if the letter of credit is being used without a standby trust fund: "(1) a signed certificate reading as follows:

Certificate of Valid Claim

The undersigned, as parties (insert principal) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operations of (principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $( ). We hereby certify that the claim does not apply to any of the following:
(a) Bodily injury or property damage for which (insert principal) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert principal) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert principal) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:
(1) An employee of (insert principal) arising from, and in the course of, employment by (insert principal); or
(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert principal).

This exclusion applies:
(A) Whether (insert principal) may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).
(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:
(1) Any property owned, rented, or occupied by (insert principal);
(2) Premises that are sold, given away or abandoned by (insert principal) if the property damage arises out of any part of those premises;
(3) Property loaned to (insert principal);
(4) Personal property in the care, custody or control of (insert principal);
(5) That particular part of real property on which (insert principal) or any contractors or subcontractors working directly or indirectly on behalf of (insert principal) are performing operations, if the property damage arises out of these operations.

(Signatures)----------
(Signatures)----------

Claimant(s)----------

or (2) a valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

This letter of credit is effective as of (date) and shall expire on (date) at least one year later), but such expiration date shall be automatically extended for a period of (at least one year) on (date and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the USEPA Regional Administrator for Region (Region
), and (owner's or operator's name) by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us.

(Insert the following language if a standby trust fund is not being used: "In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered (insert "primary" or "excess" coverage)."

We certify that the wording of this letter of credit is identical to the wording specified in 40 CFR 264.151(k) as such regulations were constituted on the date shown immediately below. (Signature(s) and title(s) of official(s) of issuing institution) (Date).

This credit is subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits published by the International Chamber of Commerce" or "the Uniform Commercial Code").

* * * * *

(n)(1) A standby trust agreement, as specified in Sec. 264.147(h) or 265.147(h) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Standby Trust Agreement

Trust Agreement, the "Agreement," entered into as of (date) by and between (name of the owner or operator) a (name of a State) (insert "corporation," "partnership," "association," or "proprietorship"), the "Grantor," and (name of corporate trustee), (insert, "incorporated in the State of " or "a national bank"), the "trustee."

Whereas the United States Environmental Protection Agency, "EPA," an agency of the United States Government, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a standby trust into which the proceeds from a letter of credit may be deposited to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term Grantor means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term Trustee means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A (on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement).

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a standby trust fund, hereafter the "Fund," for the benefit of any and all third parties injured or damaged by (sudden and/or nonsudden) accidental occurrences arising from operation of the facility(ies) covered

by this guarantee, in the amounts of (up to $1 million) per occurrence and (up to $2 million) annual aggregate for sudden accidental occurrences and (up to $3 million) per occurrence and (up to $6 million) annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:
(a) Bodily injury or property damage for which (insert Grantor) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert Grantor) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert Grantor) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:
(1) An employee or (insert Grantor) arising from , and in the course of, employment by (insert Grantor); or
(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert Grantor).

This exclusion applies:
(A) Whether (insert Grantor) may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:
(1) Any property owned, rented, or occupied by (insert Grantor);
(2) Premises that are sold, given away or abandoned by (insert Grantor) if the property damage arises out of any part of those premises;
(3) Property loaned (insert Grantor);
(4) Personal property in the care, custody or control of (insert Grantor);
(5) That particular part of real property on which (insert Grantor) or any contractors or subcontractors working directly or indirectly on behalf of (insert Grantor) are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered (insert "primary" or "excess") coverage.

The Fund is established initially as consisting of the proceeds of the letter of credit deposited into the Fund. Such proceeds and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by EPA.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by drawing on the letter of credit described in Schedule B and by making payments from the Fund only upon receipt of one of the following documents:

(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Certification of Valid Claim

The undersigned, as parties (insert Grantor) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating (Grantor's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $( ).

(Signature)----------

(Signatures)----------

Claimant(s)----------

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for the Fund shall consist of the proceeds from the letter of credit drawn upon by the Trustee in accordance with the requirements of 40 CFR 264.151(k) and Section 4 of this Agreement.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this Section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or a State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 80a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve Bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements to the Trustee shall be paid from the Fund.

Section 10. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 11. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 12. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment; the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the EPA Regional Administrator and the present Trustee by certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 13. Instructions to the Trustee. All orders, requests, certifications of valid claims, and instructions to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the EPA Regional Administrator hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or EPA, except as provided for herein.

Section 14. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the EPA Regional Administrator, or by the Trustee and the EPA Regional Administrator if the Grantor ceases to exist.

Section 15. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 14, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the EPA Regional Administrator, or by the Trustee and the EPA Regional Administrator, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be paid to the Grantor.

The Regional Administrator will agree to termination of the Trust when the owner or operator substitutes alternative financial assurance as specified in this section.

Section 16. Immunity and indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor and the EPA Regional Administrator issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonable incurred in its defense in the event the Grantor fails to provide such defense.

Section 17. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of (enter name of State).

Section 18. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation of the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 40 CFR 264.151(n) as such regulations were constituted on the date first above written.

(Signature of Grantor)
(Title) Attest: (Title) (Seal)

(Signature of Trustee)
Attest: (Title) (Seal)

(2) The following is an example of the certification of acknowledgement which must accompany the trust agreement for a standby trust fund as specified in section 264.147(h) or 265.147(h) of this chapter. State requirements may differ on the proper content of this acknowledgement.

State of----------

County of----------

On this (date), before me personally came (owner or operator) to me known, who, being by me duly sworn, did depose and say that she/he resides at (address), that she/he is (title) of (corporation), the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that she/he signed her/his name thereto by like order.

(Signature of Notary Public)

40 CFR part 265 is amended as follows:

PART 265--INTERIM STATUS STANDARDS FOR OWNERS OR OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

2. Section 265.143 is amended by revising the introductory text of paragraph (e)(10) to read as follows:

Sec. 265.143 Financial assurance for closure.

* * * * *

(e) * * *

(10) An owner or operator may meet the requirements of this section by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (e)(1) through (8) of this section and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Sec. 264.151(h). A certified copy of the guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (e)(3) of this section. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

* * * * *

3. Section 265.145 is amended by revising the introductory text of paragraph (e)(11) to read as follows:

Sec. 265.145 Financial assurance for post-closure care.

* * * * *

(e) * * *

(11) An owner or operator may meet the requirements of this section by obtaining a written guarantee. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (e)(1) through (9) of this section and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Sec. 264.151(h). A certified copy of the guarantee must accompany the items sent to the Regional Administrator as specified in

paragraph (e)(3) of this section. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

* * * * *

4. Section 265.147 is amended by revising paragraphs (a)(7), (b)(7), and (f)(6), and by adding new paragraphs (h)(4) and (h)(5) to read as follows:

Sec. 265.147 Liability requirements.

(a) * * *

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days whenever:

(i) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in paragraphs (a)(1) through (a)(6) of this section; or

(ii) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under paragraphs (a)(1) through (a)(6) of this section; or

(iii) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under paragraphs (a)(1) through (a)(6) of this section.

(b) * * *

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days whenever:

(i) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in paragraphs (b)(1) through (b)(6) of this section; or

(ii) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under paragraphs (b)(1) through (b)(6) of this section; or

(iii) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under paragraphs (b)(1) through (b)(6) of this section.

(f) * * *

(6) If the owner or operator no longer meets the requirements of paragraph (f)(1) of this section, he must obtain insurance, a letter of credit, a

surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in this section. Evidence of liability coverage must be submitted to the Regional Administrator within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

* * * * *

(h) * * *

(4) An owner or operator who uses a letter of credit to satisfy the requirements of this section may also establish a standby trust fund. Under the terms of such a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(5) The wording of the standby trust fund must be identical to the wording specified in Sec. 264.151(n).

* * * * *

(FR Doc. 92-22248 Filed 9-15-92; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 3004 3010 3006 3008 7003 3013 3009 1006 2002 3014 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-463 SEC. 7 -- Used Oil Recycling Act of 1980
Pub. Law 96-482 SEC. 17 -- Solid Waste Disposal Act Amendments of 1980
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 95-598 -- Bankruptcy, Title 11 U.S.C., Revision and Enactment (Act of 11/6/78); Investment Advisors Act of 1940, Amendment (11/6/78); Bankruptcy Reform Act of 1978; Labor-Management Reporting and Disclosure Act of 1959, Amendment (11/6/78); Organic Act of Guam, Amendment (11/6/78)
Pub. Law 98-616 SEC. 241 225 -- Hazardous and Solid Waste Amendments of 1984
Pub. Law 76-768 SEC. 2 -- Investment Company Act of 1940; Investment Advisors Act of 1940

DIALOG(R)File 180:Federal Register

Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Liability Coverage

Volume: 53 Issue: 170 Page: 33938
CITATION NUMBER: 53 FR 33938
Date: THURSDAY, SEPTEMBER 1, 1988

AGENCY: Environmental Protection Agency--(EPA); Office for Water--(OW); Office of Solid Waste--(OSW)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 264 265
NUMBERS: No. FRL-3361-6
DATES: Effective: 19881003
Appeared in FR: 19870417
CONTACT INFORMATION: Carlos M. Lago, 202-382-4780
ACTION: Final rule
INTERNAL DATA: (FR Doc. 88-19410 Filed 8-31-88; 8:45 am)
Word Count: 22284

SUMMARY: On August 21, 1985, the Environmental Protection Agency (EPA or the Agency) published a Notice of Proposed Rulemaking to amend the financial responsibility requirements concerning liability coverage for owners and operators of hazardous waste treatment, storage, and disposal facilities (TSDFs) permitted under the Resource Conservation and Recovery Act (RCRA) (50 FR 33902). The proposal set forth several regulatory options, including the authorization of additional financial mechanisms for covering third-party liability requirements, under consideration by the Agency to provide relief for owners and operators who encounter difficulties in obtaining liability insurance. On July 11, 1986, EPA published an interim final rule allowing use of a corporate guarantee as an additional financial responsibility mechanism (51 FR 25350). This rule was issued in final form on November 18, 1987 (52 FR 44314).
EPA is toda adopting other financial mechanisms for liability coverage for RCRA TSDFs These mechanisms are letters of credit, surety bonds, trust funds, an guarantees provided by firms that are not the direct parent of the owner o operator. In addition, the Agency is clarifying the liability insuranc requirements to ensure that other firms can purchase insurance for owner and operators of hazardous waste management facilities.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY
40 CFR Parts 264 and 265
(FRL-3361-6)
Standards Applicable to Owners and Operators of Hazardous Waste Treatment,
Storage, and Disposal Facilities; Liability Coverage

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: On August 21, 1985, the Environmental Protection Agency (EPA or

the Agency) published a Notice of Proposed Rulemaking to amend the financial responsibility requirements concerning liability coverage for owners and operators of hazardous waste treatment, storage, and disposal facilities (TSDFs) permitted under the Resource Conservation and Recovery Act (RCRA) (50 FR 33902). The proposal set forth several regulatory options, including the authorization of additional financial mechanisms for covering third-party liability requirements, under consideration by the Agency to provide relief for owners and operators who encounter difficulties in obtaining liability insurance. On July 11, 1986, EPA published an interim final rule allowing use of a corporate guarantee as an additional financial responsibility mechanism (51 FR 25350). This rule was issued in final form on November 18, 1987 (52 FR 44314).

EPA is today adopting other financial mechanisms for liability coverage for RCRA TSDFs. These mechanisms are letters of credit, surety bonds, trust funds, and guarantees provided by firms that are not the direct parent of the owner or operator. In addition, the Agency is clarifying the liability insurance requirements to ensure that other firms can purchase insurance for owners and operators of hazardous waste management facilities.

EFFECTIVE DATE: October 3, 1988.

ADDRESSES: The regulatory docket for this rulemaking is available for public inspection at Room S-212-E, U.S. EPA, 401 M Street, SW., Washington, DC 20460, from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding Federal holidays. The docket number is F-88-CGF1-FFFFF. The public must make an appointment to review docket materials by calling (202) 475-9327. The public may copy a maximum of 50 pages from any one regulatory docket at no cost.
Additional copies cost $0.20 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA Hotline, toll free, at (800) 424- 9346 or, in Washington, DC, at (202) 382-3000. For technical information, contact Carlos M. Lago, Office of Solid Waste (WH-563), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 382-4780.

SUPPLEMENTARY INFORMATION: The contents of today's preamble are listed in the following outline:

Date IX. State Authority A. Applicability of Rules in Authorized States B. Effect of Rule on State Authorizations X. Executive Order 12291 XI. Regulatory Flexibility Act XII. Supporting Documents

I. Authority

This regulation is being adopted under the authority of sections 2002(a), 3004, and 3005 of the Solid Waste Disposal Act; as amended by RCRA, as amended (42 U.S.C. 6912(a), 6924, and 6925).

II. Background

A. Current Liability Coverage Requirements

Section 3004(a)(6) of RCRA, as amended, requires EPA to establish financial responsibility standards for owners and operators of hazardous waste management facilities as may be necessary or desirable to protect human health and the environment.

On April 16, 1982, EPA promulgated regulations requiring owners or operators to demonstrate liability coverage during the operating life of the facility for bodily injury and/or property damage to third parties resulting from accidental occurrences arising from facility operations (47 FR 16554).

Under these regulations (40 CFR 264.147 and 265.147), an owner or operator of a hazardous waste treatment, storage, or disposal facility must demonstrate, on a per-firm basis, liability coverage for sudden accidental occurrences in the amount of $1 million per occurrence and $2 million annual aggregate, exclusive of legal defense costs. An owner or operator of a surface impoundment, landfill, or land treatment facility used to manage hazardous waste is also required to demonstrate, on a per-firm basis, liability coverage for nonsudden accidental occurrences in the amount of $3 million per occurrence and $6 million annual aggregate, exclusive of legal defense costs.

(A "nonsudden accidental occurrence," as opposed to a "sudden accidental occurrence," is defined by 40 CFR 264.141 and 265.141 as an occurrence that takes place over time and involves continuous or repeated exposure.) "First- dollar" coverage is required; that is, the amount of any deductible must be covered by the insurer, who may have a right of reimbursement of the deductible amount from the insured.

The requirements for coverage of sudden accidental occurrences became effective on July 15, 1982. The requirements for nonsudden accidental occurrences were phased in gradually according to annual dollar sales or revenue figures of the owner or operator. January 16, 1985, was the final phase-in date.

Financial responsibility for third-party liability currently can be demonstrated by obtaining insurance, by passing a financial test, or by obtaining a corporate guarantee from a parent corporation that passes the financial test. The regulations (40 CFR 264.147(a)(3), 264.147(b)(3), 265.147(a)(3), and 265.147(b)(3)) also allow an owner or operator to meet the liability requirements through a combination of the financial test and insurance, or a combination of the corporate guarantee and insurance.

B. August 21, 1985, Notice of Proposed Rulemaking

In 1984-1985, the availability of pollution liability insurance policies began to decline. A number of insurers who previously had offered coverage ceased to write pollution liability policies. Those still offering coverage raised their premiums substantially while reducing the coverage provided.

As a consequence, some owners and operators of hazardous waste TSDFs began to experience difficulties in obtaining necessary coverage and/or paying the increased cost of such coverage.

In response to this situation, EPA took a number of steps, including issuing on August 21, 1985, a Notice of Proposed Rulemaking (NPRM) (50 FR 33902) requesting comment on five possible regulatory options as responses to the problem of reduced availability and increased cost of pollution liability insurance: (1) Maintain the existing requirements; (2) clarify the required scope of coverage and/or lower the required levels of coverage; (3) authorize other financial responsibility mechanisms; (4) authorize waivers; and (5) suspend or withdraw the liability coverage requirements.

EPA received numerous comments from four major categories of commenters on the August 21, 1985, NPRM: Owners and operators of hazardous waste TSDFs; members of the insurance industry; representatives of State and local governments; and members of the public at large. A majority of commenters encouraged the Agency to retain the existing coverage limits and encouraged the Agency not to suspend or withdraw the liability coverage requirements. Numerous commenters did, however, ask EPA to consider waivers in certain circumstances. Some commenters requested EPA to clarify the scope of coverage required or to lower the required limits of coverage, but many commenters urged EPA to authorize additional financial mechanisms that would provide an alternative to insurance. Commenters specifically mentioned mechanisms such as corporate guarantees, surety bonds, letters of credit, and trust funds for use for liability coverage. The commenters, however, did not discuss in detail any of these mechanisms.

Upon analysis of comments received, studies of the cost and availability of the instruments, analysis of the suitability of proposed financial instruments for liability coverage, and consultation with banks and State insurance commissioners, EPA has decided to maintain the existing coverage requirements, while authorizing additional financial responsibility mechanisms for liability coverage. Sections III and V of this preamble discuss the mechanisms being authorized and existing approaches to waivers. The Agency's summary of and responses to comments urging it to change existing requirements on the scope and levels of coverage are provided in Section V of this preamble. Additionally, more specific discussion and response to comments is found in documents included in the docket for today's rule.

C. Rulemaking Authorizing the Corporate Guarantee

In response to the commenters on the August 21, 1985 NPRM who argued that EPA should authorize other financial instruments for liability coverage, EPA examined several additional mechanisms for liability coverage. Commenters particularly encouraged EPA to authorize a corporate guarantee for liability coverage, noting that such guarantees were already authorized as financial assurance mechanisms for closure and post-closure care (40 CFR 264.143(f), 264.145(f), 265.143(e), and 265.145(e)). In response, on July 11, 1986, the Agency issued an interim final rule revising 40 CFR 264.147, 264.151, and 265.147 to authorize, in addition to insurance and the financial test, the use of a corporate guarantee for liability coverage (51 FR 25350). The Agency subsequently made minor revisions to the rule authorizing the corporate guarantee for liability coverage, and finalized that rule on November 18, 1987 (52 FR 44314). As discussed in Section III of this preamble, today's rule further expands the availability of the

guarantee by allowing firms that are not the direct corporate parent of the owner or operator to be the guarantor.

D. Justification for Today's Rule

The Agency believes that additional mechanisms for liability coverage are desirable in order to provide a broad set of options for owners or operators who must demonstrate liability coverage but who cannot use one of the existing mechanisms. Although commentary concerning the insurance industry in the Insurance Trade Press and in other sources suggests that underwriting losses in property-casualty insurance peaked around the end of 1985 and that the outlook for the future is more favorable,/1/ the market for Environmental Impairment Liability (EIL) insurance has remained constrained./2/ Accordingly, the Agency is seeking to ensure that as many alternative financial assurance mechanisms as possible are available to the regulated community, to reduce the problem created by the constrained insurance market.

NOTE /1/ United States General Accounting Office, Statement by William J. Anderson before the House of Representatives on "Profitability of the Property/Casualty Insurance Industry," March 13, 1986.

NOTE /2/ National Association of Insurance Commissioners, "Report of the NAIC Advisory Committee on Environmental Liability Insurance," September, 1986; and "Business Insurance," April 16, 1987, p. 58; May 4, 1987, p. 22; and May 11, 1987, p. 71.

Section 3010(b) of RCRA provides that regulations promulgated under Subtitle C of the statute and revisions to existing Subtitle C regulations generally take effect six months after promulgation. However, the period prior to the effective date may be shortened if the Administrator finds the regulated community does not need six months to come into compliance or for other good cause. As the regulation does not add any additional compliance requirements and a six-month period prior to implementation would be contrary to the interest of the regulated community and public by delaying the availability of other compliance mechanisms, the regulatory changes are being issued as a final rule effective 30 days after publication.

E. Key Provisions of Today's Rule

In today's rule, EPA authorizes owners or operators of hazardous waste TSDFs to use the following additional financial assurance mechanisms for liability coverage: A letter of credit; a surety bond assuring payment of liability claims; a fully-funded trust fund; and a guarantee provided by a firm that is not the direct parent of the owner or operator. The Agency is generally not revising the scope and levels of coverage required for third-party liabilities. However, today's rule includes amendments clarifying the liability coverage requirements to allow other firms to purchase insurance for owners and operators. Finally, EPA is specifying more clearly the aggregate amount of coverage that must be provided by financial responsibility mechanisms that offer combined coverage for sudden and nonsudden occurrences.

III. Additional Financial Responsibility Mechanisms Being Authorized for Liability Coverage

In determining which additional financial assurance mechanisms to approve for liability coverage, EPA reviewed the other financial assurance programs within EPA, other Federal agencies, and several States. The Agency first

analyzed the financial mechanisms already approved for use for closure or post-closure care financial assurance since the regulated community could be expected to be familiar with them. Many of these mechanisms were mentioned by commenters on the August 21, 1985 NPRM as potentially useful. Other EPA financial assurance requirements or proposed requirements, such as the requirements for underground injection wells and underground storage tanks, were also reviewed to identify the mechanisms, if any, used in those programs for third-party liability coverage.

The Agency considered several characteristics of the mechanisms that could affect their suitability for the coverage of third-party liability claims, including (1) availability; (2) cost; (3) whether they are likely to be valid and enforceable contracts under special provisions of State law, such as laws regulating the business of insurance; and (4) whether they are capable of being set up in ways that do not require EPA to act as a "claims adjuster" or otherwise act to determine the merits of third-party liability claims brought against TSDF owners or operators.

On the basis of these analyses, EPA determined that letters of credit, surety bonds, guarantees, and trust funds provide adequate third-party liability coverage. The rationale for authorization of these instruments is described below in the discussion of each instrument.

Other mechanisms suggested by the commenters on the August 1985 NPRM and analyzed by EPA included security interests, indemnity contracts, reserve funds, captive insurance pools, and government-supplied insurance or loan guarantees. As discussed in Section V of today's preamble, EPA has concluded that these instruments are inappropriate, with the exception of captive insurance pools and risk retention groups. Captive insurance pools and risk retention groups are authorized under the current regulations.

The financial mechanisms authorized in today's rulemaking, with the exception of the guarantee, are currently approved mechanisms for closure or post-closure care under 40 CFR Parts 264 and 265, Subpart H. (Performance bonds, which are authorized for use by owners or operators of permitted facilities for assurance for closure and post-closure care, are not included because they are not adaptable to liability coverage; instead, an analogous mechanism, the payment bond, is allowed.) The requirements for these financial mechanisms parallel the requirements for financial mechanisms authorized for closure or post-closure care. However, some provisions of the mechanisms have been adjusted to address issues that arise only in the context of liability claims. Features of the mechanisms that differ include the designation of the beneficiary, exclusions for categories of damages and obligations, the claims-payment trigger, the certification of validity and enforceability, and cancellation provisions. These features are described more fully in Section IV of today's preamble.

A. Letter of Credit

Today's rule authorizes owners or operators of hazardous waste TSDFs to use letters of credit to satisfy the RCRA third-party liability coverage requirements (40 CFR 264.147(a)(3), 264.147(b)(3), 265.147(a)(3), and 265.147(b)(3)). Letters of credit are commitments by a financial institution (e.g., a bank), whose letter of credit operations are regulated and examined by a State or Federal agency, to provide funds if appropriate documents are presented. In general, letters of credit are instruments that can be adapted for various purposes./3/ Banks contacted by EPA have indicated that they would consider issuing letters of credit for liability claims for their established customers. EPA believes that letters of credit

may be more readily available to owners or operators than many other mechanisms, if the owner or operator has an established relationship with a qualifying financial institution and can provide adequate collateral.

NOTE /3/ U.S. General Accounting Office, Staff Study, "Financial Services--

Developments in the Financial Guarantee Industry," GAO/GGD-87-84, June 25,

1987, pp. 9-13, 17-18 discusses letters of credit as financial guarantees.

1. Features of Mechanism. A letter of credit is a financial instrument under which an issuing institution (the issuer), generally a bank, undertakes to meet a monetary obligation of its customer (the account party) if the bank is presented with specified documents. The issuer, in return for a fee, becomes the primary obligor. A third party, the beneficiary, initiates payment by making a claim directly on the issuer. Thus, a letter of credit is an instrument that substitutes the issuer's superior credit for the account party's credit.

The instrument authorized in today's rule is an irrevocable stand-by letter of credit in which the third-party beneficiaries are any and all persons who may be damaged by a hazardous waste release from the facility whose owner or operator has secured the letter of credit. The irrevocable nature of the instrument precludes its cancellation prior to the end of a required one-year term by the issuer or the owner or operator. After the one-year term, the letter of credit will automatically renew for another year unless, 120 days before the expiration date, the issuer notifies the owner or operator and the Regional Administrator of a decision not to renew the credit (40 CFR 264.151(k)).

2. Who May Provide A Letter of Credit. Today's rule provides that letters of credit for liability coverage must be provided by an authorized financial institution regulated by a Federal or State agency (40 CFR 264.147(h)(2) and 265.147(h)(2)). EPA has established these requirements, which parallel the requirements for letters of credit providing assurance for closure or post- closure care, to ensure the financial viability of the issuer of the letter of credit. The viability of the commercial banks and savings and loan institutions that may issue letters of credit is scrutinized by several oversight organizations, including the Federal Reserve, the Federal Deposit Insurance Corporation, the Federal Savings and Loan Insurance Corporation, the Comptroller of the Currency, and State banking commissioners. These regulatory bodies attempt to ensure that regulated institutions take actions necessary to avoid bankruptcies. EPA concluded that it would be duplicative to establish additional requirements to ensure the solvency of bank and savings and loan institutions issuing letters of credit.

3. Validity of Letter of Credit Providing Liability Coverage. To ensure that letters of credit may be used to provide liability coverage, EPA reviewed the status of legal doctrines that might call into question the authority of a bank to issue a letter of credit for liability coverage, and concluded that no significant legal obstacles currently exist to such use of letters of credit. EPA believes that the proposed use of letters of credit in today's rule is analogous to the use of a letter of credit in situations that courts have approved. The Agency, therefore, concluded that use of a letter of credit for financial assurance for third-party liability coverage is both valid and enforceable.

B. Surety Bond

Today's rule authorizes owners and operators of hazardous waste TSDFs to use surety bonds to satisfy the RCRA third-party liability requirements (40 CFR 264.147(a)(4), 264.147(b)(4), 265.147(a)(4), and 265.147(b)(4)). The adoption of surety bonds as an additional assurance mechanism for liability coverage was widely advocated by the commenters on the August 21, 1985, NPRM.

1. Features of Mechanism. Surety bonds represent agreements between three parties: The principal (i.e., the facility owner or operator); the obligee (i.e., third-party liability claimants) to whom the principal promises to complete a specific act; and the surety, who assures the obligee that the principal will fulfill its obligation and, if the principal fails, that the surety will fulfill the principal's obligation to the obligee. Thus, the surety bond authorized today guarantees that if the owner or operator fails to satisfy valid third-party claims, the surety will pay such claims. A surety company is entitled to reimbursement from the principal when it makes a payment under a bond.

There are two types of surety bonds: payment bonds and performance bonds. Payment bonds guarantee that the principal will pay a certain sum to identified parties under the conditions named in the bond, and if the principal fails to make the payment or payments, the surety will make the payment or payments. Performance bond guarantees that the principal will perform a certain act and, if the principal fails, that the surety will either perform the act for the principal or pay someone else to perform it. The surety bond provided in today's rule is a payment bond, because the obligation it guarantees is limited to the principal's payment of third-party liability claims to satisfy the Subtitle C liability requirements.

A surety company's liability under a payment bond is limited to the "penal sum," which is the amount of coverage guaranteed by the bond. The penal sum of the payment bond being authorized by today's rule has two parts, the per- occurrence limit and the annual aggregate limit (40 CFR 264.151(1)). If the payment bond covers claims resulting from both sudden accidental occurrences and nonsudden accidental occurrences, a separate penal sum will be identified for each type of coverage (i.e., such a bond would have four penal sums).

The payment bond authorized in today's rule will remain in effect unless and until the surety notifies the owner or operator and the Regional Administrator of proposed cancellation by certified mail. Cancellation will become effective 120 days from the receipt of notification (40 CFR 264.151(1), conditions clause (7)).

2. Who May Provide Surety Bonds. Today's rule requires that surety companies issuing payment bonds to assure liability coverage must be listed by the Department of Treasury in Treasury "Circular 570" as surety companies that may issue bonds to the Federal government (40 CFR 264.147(i)(2) and 265.147(i)(2)). This requirement parallels the closure and post-closure care financial assurance regulations and other financial assurance requirements involving surety bonds and assures that the surety company is subject to regulatory oversight by some government agency. To qualify for such a listing, surety companies must comply with the law and regulations of the Department of Treasury (as specified in sections 9304

and 9308 of Title 31 of the United States Code). The names of the companies meeting these Treasury requirements are published on July 1 of each year by the Department of the Treasury in "Circular 570; Surety Companies Acceptable on Federal Bonds."

3. Validity of Surety Bond Providing Liability Coverage. EPA has contacted several State insurance commissions to determine if States would view a surety bond for third-party liability coverage as subject to the State insurance laws. In a number of States, surety companies are already regulated by the State agency that is responsible for insurance. EPA found that in other States, the issue of whether the surety bond constitutes insurance may be examined on a case-by-case (i.e., facility-by-facility or bond-by-bond) basis. Many States may consider it necessary for the firm providing the surety bond to qualify under the State's surety or insurance laws as an insurer. To address this issue, the rule does not allow owners or operators to use a surety bond to demonstrate financial assurance unless the Attorneys General or Insurance Commissioners in the States in which the surety is incorporated and in which the facilities covered by the bond are located certify that the mechanism is valid and enforceable (40 CFR 264.147(i)(4) and 265.147(i)(4)). (See Section IV.C of this preamble for further discussion.)

C. Guarantee

Today's rule extends the use of guarantees for liability coverage to allow guarantees provided by firms that are not the direct parents of facility owners or operators (40 CFR 264.147(g)(1) and 265.147(g)(1)). The use of a parent corporate guarantee for liability coverage was authorized in an interim final rule on July 11, 1986 (51 FR 5350) and promulgated as a final regulation on November 18, 1987 (52 FR 44314). Under this rule, liability coverage may be provided by parent firms that directly own at least 50 percent of the voting stock of a subsidiary firm. Several commenters on the interim final rule urged EPA to allow non-parent firms to provide guarantees.

After analyzing the validity and enforceability of guarantee contracts by non-parent firms, the Agency is authorizing guarantees provided by corporate grandparents and by a corporate "sibling" firm (a firm whose parent corporation is also the parent corporation of the owner or operator). The Agency also is allowing guarantees by other related and unrelated firms, provided that such firms have a substantial business relationship with the owner or operator.

The guarantee in today's rule incorporates the features of the November 18, 1987 rule for parent guarantees with minor revisions necessary to address non-parent guarantees and to ensure consistency with the other instruments allowed by today's rule. Since today's rule incorporates the features of this earlier rule, an extensive discussion of the guarantee has not been included in this preamble. Only the distinctive features of the non-parent corporate guarantee, the definition of who may provide the guarantee, and the basis upon which EPA concluded that it would be a valid and enforceable mechanism are discussed below.

1. Features of Mechanism. The authorized guarantee is an instrument by which a firm promises to pay the liability obligations of the owner or operator is the owner or operator does not do so. The firm providing the guarantee (the guarantor) must submit proof that it passes the financial test requirements of Secs. 264.147(f)(1) or 265.147(f)(1). If the guarantor subsequently becomes unable to pass the financial test, the owner or operator must obtain another financial assurance mechanism for liability

coverage.

2. Who May Provide Guarantees. Today's rule extends EPA's authorization of corporate guarantees beyond the previously allowed parent guarantee to include multi-tier guarantees by corporate grandparents, cross-stream guarantees by corporate siblings, and guarantees by firms with a "substantial business relationship" with the owner or operator. In general, today's rule authorizes three types of guarantees between corporations: (1) A guarantee by a parent corporation or principal shareholder of a subsidiary (a "downstream" guarantee), (2) a guarantee by a sibling corporation (a "cross-stream" guarantee), and (3) a guarantee by a firm that has a "substantial business relationship" with the corporation that receives the guarantee (40 CFR 264.147(g)(1) and 265.147(g)(1)).

A simple single-tier downstream guarantee is one where the direct parent corporation guarantees the obligation of its subsidiary. A multi-tier downstream guarantee (consisting of three tiers of ownership, for example) is a guarantee by which the corporate grandparent or great grandparent (i.e., the ultimate owner of the subsidiary) provides a guarantee for the subsidiary. A cross-stream guarantee is a guarantee between sibling corporations, e.g., a "brother" subsidiary's guarantee of a "sister" subsidiary where the siblings are owned by the same parent. Both of these categories of guarantees have been tested in legal actions and are considered strong and binding legal obligations although analyses of guarantees between siblings typically assume that some economic relationship exists between the two corporations aside from the guarantee.

If the guarantee is being provided by a corporate grandparent or sibling, the guarantor must provide the guarantee to the owner or operator directly, irrespective of the number of intervening levels of ownership that exist in the corporate structure (40 CFR 264.147(g)(1) and 265.147(g)(1)). For example, a corporate grandparent would provide a guarantee for the owner or operator's firm directly, not through the corporate parent.

Today's rule also authorizes unrelated firms and other related firms, aside from parents and siblings, that have a "substantial business relationship" with the owner or operator of a hazardous waste facility to provide guarantees (40 CFR 264.147(g) and 265.147(g)). In authorizing guarantees by these other related and unrelated firms, EPA sought to ensure that a valid and enforceable contract was created. To this end, the Agency is requiring these firms to demonstrate a substantial business relationship with the owner or operator to ensure that the guarantee is a valid contract. Under fundamental principles of contract law, contracts must be supported by "consideration." Consideration is generally defined as a legal detriment that has been bargained for and exchanged for the promise. The general principle underlying the concept of consideration is that the law will not enforce gratuitous promises.

The issue of consideration arises in the context of all guarantees; however, parent and sibling firms authorized to issue guarantees under today's rule can demonstrate consideration by the inherent benefits or detriments that accrue to the guarantor firm by virtue of its corporate relationship with the owner or operator. As noted above, courts have generally recognized that guarantees offered by a parent or sibling corporation are valid and enforceable. EPA believes that other related and unrelated firms should be able to demonstrate sufficient consideration for the contract if they have a substantial business relationship with the owner or operator.

The Agency's review of legal literature indicated that a sufficiently close business relationship between two firms could be comparable to the shared economic interests that typify the relationship between corporate siblings and between a parent and its subsidiary. Because it is these mutual economic interests that underlie the validity and enforceability of downstream and cross-stream guarantees, the existence of such interests between other types of firms should enable guarantees between these firms also to be valid and enforceable. No single legal definition exists of what constitutes a business relationship between two firms that would justify upholding a guarantee between them. Furthermore, such a determination would depend upon the application of the laws of the States of the involved parties. Thus, in defining the underlying business relationship that produces an acceptable guarantee, the Agency provides a broad framework for analyzing business relationships while acknowledging the primary role of State law.

In today's rule, EPA is defining substantial business relationship to mean "the extent of a business relationship necessary under applicable State law to make a guarantee contract issued incident to that relationship valid and enforceable. A 'substantial business relationship' must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the applicable EPA Regional Administrator" (40 CFR 264.141(h)). A guarantee contract, by itself, would be inadequate to demonstrate a substantial business relationship between two parties. However, an existing contract to supply goods or services, separate from the guarantee contract, could supply evidence of such a relationship. An example of such an arrangement might be a contract for hazardous waste disposal between a generator and a disposal facility. Evidence demonstrating such a substantial business relationship is required to be provided in the letter from the Chief Financial Officer of the guarantor.

In addition to demonstrating the existence of a substantial business relationship, these other related and unrelated guarantors must describe the value that they received in consideration for the guarantee contract. In some cases, preexisting business relationships, no matter how substantial, will be insufficient by themselves to demonstrate consideration because they will not have been bargained for to induce the promise in the guarantee contract. For this reason, these guarantors must also describe the consideration for the contract in the letter from their Chief Financial Officer.

EPA considered as a preliminary matter whether corporate guarantees would be regulated as insurance contracts under States' insurance laws. EPA was concerned that guarantors could subject themselves to States' insurance laws through the issuance of guarantees. This issue has arisen in other of the Agency's financial responsibility rulemakings, including the proposed financial responsibility requirements for underground storage tanks containing petroleum (52 FR 12786, April 17, 1987). A discussion of the applicability of State insurance laws to various mechanisms, including corporate guarantees, is contained in the docket for that rulemaking, in the "Supporting Document for Proposed Underground Storage Tanks Containing Petroleum--Financial Responsibility Requirements." That discussion indicates that States' insurance statutes and regulatory bodies have varying ways of describing their jurisdiction over guarantees, oftentimes dependent on the precise circumstances surrounding the transaction. Thus,

the Agency cannot state with any certainty whether any particular guarantee would subject the guarantor to a State's insurance laws. Therefore, the responsibility rests on owners and operators to obtain guarantees that are valid and enforceable and on prospective guarantors to ascertain and comply with the State laws they would subject themselves to if they were to provide guarantees. As discussed in Section IV.C of today's preamble, the first responsibility cited is accomplished by requiring a certification from the Attorney General or Insurance Commissioner of the State in which the guarantor is incorporated and of each State in which a facility covered by the guarantee is located.

3. Validity of Non-Parent Guarantee Providing Liability Coverage. Some commenters questioned whether non-parent guarantees would provide assurance equivalent to that provided by a parent guarantee. The Agency concluded that adequate assurance will be provided by these "intercorporate" guarantees.

Intercorporate guarantees are a common means of assuring a lender that its loan will be repaid. In particular, "cross-stream" guarantees, which are from a "brother" subsidiary to a "sister" subsidiary where both firms are owned by the same corporate parent, are a typical business practice. Normally, collection of funds assured by intercorporate guarantees is a comparatively simple matter of contract enforcement.

In unusual circumstances, such as the situation where the guarantor declares bankruptcy, efforts could be made to avoid the guaranteed obligation. Certain provisions of the Federal bankruptcy code (11 U.S.C.A. 544(b) and 548(a)(2)) allow avoidance of obligations that deplete the debtor's assets to the detriment of its creditors. If, while the guarantor was involved in bankruptcy proceedings, a liability claim was presented to it for payment, a question could arise over whether bankruptcy laws would enable it to avoid satisfying the claim because the payment would deplete its assets to the detriment of its creditors. Under section 548(a)(2) of the Federal bankruptcy code, a trustee in bankruptcy may avoid payments made to any party within a year before the debtor filed bankruptcy if (1) the debtor was insolvent at that time and (2) the debtor did not receive "reasonably equivalent value" in return for the transfer. Section 544(b) essentially enables similar actions to be pursued under applicable State laws.

Intercorporate guarantees, however, should not be vulnerable to such actions if the owner or operator receives reasonably equivalent value in return for the guarantee. In effect, this reasonably equivalent value serves as consideration supporting the guarantee contract, similar to the guarantor having a "substantial business relationship" with the owner or operator.

According to most authorities, there is no difficulty in finding reasonably equivalent value in downstream guarantees, where the guarantor is higher in the corporate hierarchy (e.g., a direct or higher-tier parent) than the subsidiary receiving the guarantee. The subsidiary relationship of a firm to its direct or higher-tier parent is almost always considered a benefit to that parent. In cross-stream guarantees from one subsidiary of a parent to another subsidiary of that same parent, demonstrating reasonably equivalent value is more difficult because the subsidiary to which the guarantee is given is not an asset of the other subsidiary serving as the guarantor. In order to obviate any question about reasonably equivalent value in cross- stream guarantees, therefore, the Agency is requiring a cross-stream guarantor to describe in the Chief Financial Officer's Letter

(Sec. 264.151(g)) the value of the consideration that accrued to it from the guarantee.

The Agency has also concluded that adequate assurance that obligations will not be avoided in the event of bankruptcy will be provided by guarantees made by other related firms (i.e., not corporate siblings or parents) and unrelated firms which demonstrate a substantial business relationship with the owner or operator. As with intercorporate guarantees, collection of funds in most cases will merely be a matter of contract enforcement. In the event of bankruptcy of the guarantor, however, it is particularly important that the guarantee be written so as to demonstrate clearly that the guarantor has received reasonably equivalent value in consideration for the guarantee. As discussed above, the Agency is requiring these guarantors to describe in the Chief Financial Officer's Letter (Sec. 264.151(g)) both the nature of the substantial business relationship and the value derived from the guarantee.

D. Trust Fund

Today's rule authorizes owners or operators of hazardous waste facilities to use trust funds to demonstrate financial responsibility for third-party liability coverage (40 CFR 264.147(a)(5), 264.147(b)(5), 265.147(a)(5), and 265.147(b)(5)), if assets sufficient to cover the full amount of the assurance to be provided by the trust fund are placed in the fund before it becomes effective (i.e., the trust must be fully funded "up-front") (40 CFR 264.147(j)(3) and 265.147(j)(3)). Several comments received on the August 21, 1985 NPRM supported the use of trust funds to demonstrate financial responsibility for third-party liability coverage.

1. Features of Mechanism. A trust fund is an arrangement in which a separate legal entity, the trust, is created to hold property or funds for the benefit of another. At least three parties are necessary under trust agreements: the grantor, who establishes and funds the trust; the trustee, who has a fiduciary responsibility over the property placed in the trust by the grantor; and the beneficiary, the person (or group of people) for whom the arrangement is made. The most significant feature of a trust fund is the shift of legal ownership of the property in the trust from the grantor to the trustee when the trust is established and funded.

The trust document or trust agreement determines the allocation of rights, duties, and responsibilities among the parties to any trust. The trustee, in return for a fee, has a fiduciary responsibility to manage the fund according to the rules specified in the agreement. This agreement also defines the limits of a trustee's liability. In addition, a trust agreement states the manner in which payments are made into and out of the trust, as well as the grounds upon which the trust can be terminated.

2. Validity of Trust Fund for Liability Coverage. A trust used as a financial assurance mechanism should have a fund balance equal to the amount of coverage being demonstrated. The trust agreement may allow a pay-in period during which the grantor makes payments of specified amounts into the trust until the trust is fully funded. The length of the pay-in period typically is designed such that the trust fund balance equals the required amount of coverage before funds are needed for the assured activity. Because liability coverage may be needed immediately, the trust in today's rule must be fully paid up at the time it is relied upon for financial assurance. The trust also may not be cancelled unless and until an alternate financial assurance mechanism is in place. A fully funded

trust provides a high degree of assurance because funds, up to the required amount of coverage, are set aside specifically for the purpose of liability coverage.

To ensure that the full amount of coverage is available each year in which owner or operator must provide financial assurance, the Agency is requiring both that the trust fund be fully funded immediately and, in addition, if a liability claim is paid out of the trust fund balance, the owner or operator is required to refinance the trust annually up to the amount of the required coverage on or before the anniversary date of the establishment of the fund to satisfy the annual aggregate requirement of Secs. 264.147 and 265.147.

Although some owners and operators may conclude that the cost of funding a trust as the sole financial assurance mechanism is prohibitive, they may find it desirable to use a trust fund in combination with one or more other mechanisms. For example, owners and operators who purchase insurance policies that do not provide the full amount of aggregate coverage might use trust funds to demonstrate financial responsibility for the amounts of the aggregate not covered by the insurance policy.

E. Purchase of Insurance by Other Firms

Under the current liability requirements, proof of adequate insurance coverage can be provided by either a certificate of insurance or an endorsement. A certificate of insurance is a statement obtained from the insurer certifying that it has issued insurance as represented in the certificate. The certificate is not a part of the policy, but can be used to demonstrate the existence of the policy. An endorsement is a form attached to the policy that describes the original terms of the policy and any amendments to those terms. An endorsement is a part of the policy and also evidences that insurance has been issued as described in the endorsement.

The Agency is today making minor revisions to the insurance certificate and endorsement to clarify that other firms may purchase insurance on behalf of owners or operators and to ensure that EPA receives proper notice of actions affecting the policy, such as attempted cancellation, where the policy has been purchased by another firm. These changes are reflected in paragraphs 2(d) of the "Hazardous Waste Facility Liability Endorsement" and of the "Hazardous Waste Facility Certificate of Liability Insurance" in Secs.
264.151(i) and 264.151(j), respectively.

Currently, 40 CFR 264.147(a) and 265.147(a) require that an owner or operator must "have and maintain" coverage for bodily injury and property damage to third parties resulting from operation of a hazardous waste management facility. These regulations do not state explicitly that a party other than the owner or operator may purchase or obtain the necessary insurance coverage on behalf of the owner or operator. To clarify in the regulations that such insurance may be purchased by a third party, however, requires only that the language of the notice of cancellation provision in these insurance policies be amended.

To ensure that the cancellation provision in the Endorsement and Certificate covers a situation in which another company has purchased a policy for the owner or operator, the Agency has modified the language of the cancellation provision of both the Certificate and Endorsement to state

explicitly that another firm providing insurance for an owner or operator must notify the Regional Administrator and the owner or operator by certified mail 60 days before insurance is cancelled (40 CFR 264.151(i)(2)(d) and 264.151(j)(2)(d)). In addition, the revised cancellation provision also states that another firm providing insurance for an owner or operator must notify EPA in writing (1) whenever claims are made against the firm or the owner or operator for third-party damages and (2) before any changes are made in the policy. The Agency is concerned that reductions in the level of coverage available to the owner or operator, due to claims made against the firm providing the insurance or changes in the insurance policy by the firm providing the insurance, otherwise may not be reported to EPA.

F. Allowable Combinations of Mechanisms

The Agency will allow an owner or operator to demonstrate the required liability coverage through the use of combinations of financial assurance mechanisms (40 CFR 264.147(a)(6), 264.147(b)(6), 265.147(a)(6), and 265.147(b)(6)). Owners or operators may use any combination of insurance, the financial test, the corporate guarantee, a letter of credit, a surety bond, and a trust fund. In allowing combinations of instruments, EPA is extending the general approach of Subtitle C liability coverage requirements. An owner or operator can use its own financial strength to cover some costs and another financial assurance mechanism to cover the remainder, provided that in combining the mechanism assets are not double-counted. To prevent double- counting, combinations of the corporate guarantee and financial test are allowed only if the financial statement of the guarantor and the owner or operator are not consolidated (40 CFR 264.147(a)(6), 264.147(b)(6), 265.147(a)(6), and 265.147(b)(6)). In a consolidated financial statement, the assets and liabilities of a subsidiary are included in the parent company's financial statement. If the financial statements of the guarantor were consolidated with the statement of the owner or operator, the owner or operator could count its own assets once for the financial test and they could be counted again in the corporate financial statement which is used to support the corporate guarantee. Such double-counting of assets would negate the value of the financial test by overestimating the assets of the guarantor.

Today's rule includes a provision requiring owners and operators to specify which of several combined instruments should be drawn upon first in the event of a claim by designating instruments as "primary" or "excess" coverage.

Under closure and post-closure care financial assurance rules, priorities may be established by the Regional Administrator either by selecting one instrument and drawing upon it, or by drawing upon all instruments simultaneously and then drawing funds from the standby trust without regard to their source (see 40 CFR 264.143, 264.145, 265.143, and 265.145). The Agency considered giving the Regional Administrator similar authority in today's rule. However, the Agency is seeking in this rule to minimize the role of the Regional Administrator in payment of claims. Consequently, under today's rule the Regional Administrator does not establish the order in which financial assurance mechanisms are drawn upon in cases when owners or operators use more than one mechanism to satisfy the liability coverage requirements.

The Agency also considered the option of establishing standardized priorities for drawing upon mechanisms. This option was not adopted, however, because the Agency believes that priorities can better be

established on a case-by-case basis.

While rejecting these two approaches, EPA believes that establishing priorities is necessary to avoid delays in the payment of claims and to define clearly the extent of coverage. For example, priority arrangements are often specified when insurance is combined with another mechanism. Insurers typically include language within policies limiting their obligations in the event that other coverage exists and preventing the "stacking" of policies except in the case of designated "primary" and "excess" coverage. Such language generally specifies that the coverage provided is "primary" (meaning that it is to be drawn upon first) and that if other coverage exists, payment of claims will be shared, or that payment will be made after the other coverage is exhausted up to the liability limits of the policy.

Today's rule requires an owner or operator to specify which of several mechanisms that are being used in combination to satisfy the coverage requirements should be drawn upon first in the event of a claim. The actual determination of priority is, however, left with the owner or operator and may involve negotiation with the providers of the assurance mechanism.
To facilitate the establishment of priorities, the financial assurance instruments adopted in today's rule include language specifying whether the coverage is primary or excess. In addition, the guarantee under Sec.
264.151(h)(2) has been amended to indicate whether it provides primary or excess coverage.

IV. Special Provisions of Additional Mechanisms

This section discusses several special provisions that are common to several of the additional mechanisms for liability coverage authorized by today's rule, and that differ from requirements for closure and post-closure financial assurance.

A. Beneficiaries

In contrast to the mechanisms authorized or proposed under Subtitle C for closure and post-closure care and corrective action, the liability coverage mechanisms authorized today do not name EPA as their beneficiary. In today's rule, the issuer of the mechanism assumes the obligation to satisfy third- party liability claims for personal injury or property damage arising from operation of the facilities covered by the mechanism if the owner or operator does not do so.

Third parties, and not EPA, are designated beneficiaries to ensure that the third parties are paid directly for liability claims without involvement by EPA. The issuer of the mechanism must honor all valid certified claims or judgments upon the mechanism up to the limit of the amount covered.

B. Payment Trigger

To ensure that only valid claims are paid, the mechanisms specify that before making payment the issuer must receive either (a) a certificate of valid claim signed by the third-party claimants and by the owner or operator, or (b) a final court judgment. This provision allows for the resolution of third-party claims without the involvement in the dispute of either the issuer of the mechanism or EPA. Each of the mechanisms authorized today contains a provision that incorporates the payment trigger requirements, including the "certificate of valid claim" (40 CFR 264.151(h)(2), section 13; 264.151(k), clause 2; 264.151(1), condition (4);

and 264.151(m), section (4)).

The purpose of this payment trigger is to avoid placing either the provider of the mechanism or the Regional Administrator in the position of deciding the merits of disputes between the owner or operator and the third-party claimant. The payment trigger is also set up so that claims do not have to be litigated for a final judgment. The certification is designed to allow an owner or operator to settle a claim with a third party without conceding liability in a document accessible by the public, which could be used against the owner or operator in future claims.

The requirement to submit the signed and notarized certification assures that the parties have either agreed that the claim is valid and in the correct amount or they have settled any disputes related to the validity or amount of the claim before coming to the provider for payment. The procedure is designed to reduce administrative burdens and to allow efficient payment of valid claims. The Agency does not expect the requirement to submit a signed and notarized certification of claim to place undue burdens on owners or operators or third-party claimants.

Alternatively, if the owner or operator and the third-party claimant cannot agree on the validity and amount of the claim, a final judgment by a court must be submitted by the third-party claimant, indicating that the claim should be paid. Whether payment of a judgment shall be made is a matter of applicable State law and shall be determined by the laws of the jurisdiction in which the action was brought.

Unlike the requirements for closure and post-closure care and corrective action, EPA is not requiring the establishment of a standby trust for mechanisms issued for liability coverage. A standby trust is necessary when funds are payable to EPA, because by law monies paid to the Federal government must be deposited in the United States Treasury. Because the mechanisms will pay third parties directly, a standby trust is not necessary for liability coverage.

C. Certification of Validity and Enforceability

The surety bond and guarantee authorized in today's rule may be subject to the insurance laws and regulations of certain States. To ensure that these instruments are valid and enforceable, EPA has contacted several State insurance commissions to ask how they would view these mechanisms for liability coverage. The results of those contacts are described in the docket for this rulemaking.

Most of the State commissions contacted said they would probably require a firm providing a surety bond to qualify as an insurer under State insurance laws unless the firm was related to the owner or operator in a corporate structure or it was providing the bond incident to its business relationship with the owner or operator. Two factors may influence the State's determination: whether a premium is charged and whether the firm would make such bonds available to the general public. To be certain that any bonds used as financial assurance mechanisms will be valid and enforceable, the Agency will not approve a surety bond for liability coverage unless the Attorneys General or Insurance Commissioners of the State in which the surety is incorporated, and of each State in which a facility covered by the bond is located, submits a written statement that a surety bond written and executed as required is a legally valid and enforceable obligation (40 CFR 264.147(i)(4) and 265.147(i)(4)). The

certification by each State is required only once, and need not be obtained on a case-by-case basis by the owner or operator; instead it is provided to EPA or to a State agency. Accepting certifications provided to a State agency may be necessary in some circumstances even if EPA is administering the financial assurance requirements, because in many States officials such as the Attorney General will not issue opinions except to State agencies.

Guarantees for liability coverage also may come within the jurisdiction of a State's insurance laws and regulations. Accordingly, EPA is requiring that the guarantee may be used to fulfill liability coverage requirements only if the Attorney General or Insurance Commissioner of the State in which the guarantor is incorporated, and of each State in which a facility covered by the guarantee is located, submits a written statement that a guarantee written and executed as required is a legally valid and enforceable obligation (40 CFR 264.147(g)(2) and 265.147(g)(2)). The corporate guarantee rule provides a parallel requirement for this guarantee. To date, EPA has received evidence from 28 States that the parent guarantee would be acceptable.

D. Cancellation

Today's rule includes cancellation procedures for the authorized mechanisms. These procedures vary somewhat depending on the instrument. For the surety bond and guarantee provided by an unrelated firm, cancellation is allowed 120 days following notification by certified mail to the owner or operator and to the Regional Administrator(s) of the Region(s) in which the affected facilities are located (40 CFR 264.151(h)(2) and 264.151(1)). The Agency believes that 120 days is sufficient time for an owner or operator to locate a new financial assurance mechanism, and that any more stringent requirement, such as one requiring an in-place alternative prior to cancellation, would limit the availability of these mechanisms and would require extensive involvement of the Agency in the claims process.

The cancellation provisions for guarantees provided by some guarantors related to the owner or operator (i.e., corporate parents, siblings, or grand parents) require the guarantor to continue to provide the guarantee until an alternate mechanism is in place (40 CFR 264.151(h)(2)). This more stringent requirement is currently required for the corporate parent guarantee and is today being extended to guarantees provided by some of the other firms that are related to the owner or operator.

The distinctions in the cancellation provisions are based on the nature of the relationship between the provider of assurance and the owner or operator.

EPA believes that a corporate parent or some of the other related corporations, due to their close relationship with the owner or operator, will have a continuing interest in the financial condition of the owner or operator and therefore should bear more responsibility for continued financial assurance than a less related or completely unrelated firm. When guarantees are provided by guarantors closely related to the owner or operator, permitting cancellation only when an alternative has been approved ensures that coverage for liability costs will be continuously available.

Similarly, because the owner or operator provides a trust fund directly, it is not allowed to cancel that mechanism until another form of financial assurance has become effective. EPA is not promulgating a similarly stringent cancellation requirement for providers of insurance, surety bonds, or guarantees by less related and unrelated firms, because it

believes that third-party providers would not provide coverage if they were unable to cancel that coverage, with reasonable notice, at some later date. Today's rule does not amend the current provisions (40 CFR 264.151 (i) and (j)) allowing an insurer to cancel an insurance policy 60 days after the notice of cancellation is received by the Regional Administrator. Insurance providers argued that not allowing cancellation until at least 120 days after notice is given exposes them to considerable risk when the insured fails to pay the premium for the final period of coverage. In consideration of this concern, the Agency is maintaining the current 60-day requirement for insurance policies.

E. Exclusions

The mechanisms in today's rule contain a provision that they do not apply to certain categories of damages or obligations (see 40 CFR 264.151(h)(2), paragraph (4); 264.151(k); 264.151(l), conditions clause (l); and 264.151(m), section 3). These exclusions are patterned on existing standard exclusions found in insurance coverage (see, for example, the Insurance Services Office pollution liability coverage form CG 00 39 11 85). They are intended to ensure that the coverage is not exhausted by the payment of claims that are covered by other compensation systems or that are otherwise not intended to be included within the scope of coverage.

The Agency did not adopt all the standard Commercial General Liability (CGL) and Environmental Impairment Liability (EIL) exclusions, but included only those exclusions it considered relevant to the financial assurance mechanisms for liability. EPA has also recently issued guidance on the acceptability of site-specific pollution exclusion within insurance policies.

This guidance memorandum is applicable only to insurance policies.

Exclusion (a), for bodily injury or property damage for which the owner or operator is obligated to pay damages by reason of the assumption of liability in a contract or agreement, is intended to exclude liabilities assumed by contract that do not involve the hazardous waste treatment, storage, and disposal facility or facilities of the owner or operator. It does not exclude settlements or other agreements to pay damages in connection with accidental occurrences resulting in bodily injury or property damage caused by hazardous waste.

Exclusion (b), for obligations under workers' compensation, disability benefits, or unemployment compensation law or similar law, is intended to ensure that liability coverage is available for non-employee third parties and does not duplicate coverage provided under these other programs or forms of assurance.

Exclusion (c), for bodily injury to the employees, or the immediate family of employees, of the owner or operator, is also intended to ensure that coverage is available for "third parties" and does not duplicate coverage provided under other forms of assurance.

Exclusion (d), for bodily injury or property damage arising out of the ownership or use of any aircraft, motor vehicle, or watercraft, is to prevent use of an authorized financial assurance mechanism for routine accidents that are not directly related to management of hazardous waste.

Exclusion (e), for property damage to property owned, occupied, rented, or in the care, custody, or control of the owner or operator, is intended to

ensure that coverage will be available to compensate third parties, and not the owner or operator, for property damage as a result of activities at TSDFs.

V. Other Issues Presented in the Notice of Proposed Rulemaking

In the August 21, 1985, NPRM, EPA suggested several additional approaches that could be taken to promote compliance with the financial responsibility requirements. Alternatives, other than authorizing additional financial assurance mechanisms, included the suspension or withdrawal of the liability coverage requirements, clarification of the scope of coverage, revision of the required levels of coverage, or authorization of waivers. Numerous comments were received on these alternatives. After considering these comments, the Agency has decided to retain the liability coverage requirements at their present levels, to maintain the present scope of coverage, and to reject the option of generic waivers. This section discusses briefly the comments received on these alternatives in response to the NPRM and explains the reasons why EPA is not adopting them. A more complete discussion of these comments is included within the docket accompanying today's rule.

A. Maintain, Suspend, or Withdraw Existing Liability Coverage Requirements

The Agency received comments from State governments and the public that generally argued in favor of maintaining the requirements. Supporters of the existing requirements argued that the insurance market for EIL coverage would not recover without such requirements; that maintaining the requirement would increase public confidence in hazardous waste facilities and decrease opposition to siting and permitting such facilities; and that low-risk owners and operators were able to obtain coverage. Commenters from State and local governments in particular argued that suspension or withdrawal of the liability coverage requirements would severely damage the chances for an eventual solution to the problem of insurance availability, that suspension would not be acceptable to the public and would undermine the strength of programs to regulate hazardous waste management, and that liability coverage is necessary to protect human health and environment. Facilities that are unable to obtain such coverage, in these commenters' opinion should not continue in operation.

In contrast, a number of firms in the regulated community argued that EPA should not maintain the existing liability coverage requirements, but rather should suspend or withdraw the requirements, because of the difficulty many firms faced in obtaining insurance. Commenters also argued that the liability coverage requirements could be suspended or withdrawn because they were redundant with permitting conditions and that EPA should concentrate on achieving risk control rather than post-loss compensation. They also pointed out that even if the liability coverage requirements were abolished, third parties harmed by hazardous waste management activities could still sue the owner or operator for damages. Finally, commenters argued that the constraints on insurance availability made a short-term suspension necessary, even if the requirements for liability coverage were later reinstituted.

After considering these comments and suggestions made in response to other questions in the NPRM, EPA has concluded that the current liability coverage requirements should be maintained. The Agency believes that the requirements are an important component of the RCRA management system and are necessary to protect human health and the environment. Further,

Congress in the Hazardous and Solid Waste Amendments of 1984 (HSWA) has stressed the importance of satisfying all financial assurance requirements, including liability coverage. Finally, by authorizing the use of additional financial mechanisms for liability coverage, the Agency believes that the problems of insurance availability cited by some commenters as reasons to suspend or withdraw the rule should become less important in the future.

B. Revise Scope and Levels of Coverage

A number of issues were considered by EPA in connection with the scope and levels of coverage. They included coverage levels, distinction between sudden and nonsudden coverage, exclusion of legal defense costs, and deductibles.

Each is discussed in this section.

1. Coverage Levels. EPA established the sudden accidental and nonsudden accidental liability coverage requirements in 1982 at $1 million per occurrence and $3 million per occurrence, respectively, on the basis of the Agency's investigation of existing third-party damage cases. To account for the possibility that the same firm might experience more than one claim in a year, the Agency also established annual aggregate coverage requirements at twice those amounts, or $2 million and $6 million, respectively.

In July 1986, EPA again reviewed third-party damage claims, awards, and settlements for sudden and nonsudden accidental occurrences involving hazardous chemicals as well as hazardous waste to determine whether the required levels of coverage are adequate. Data were limited, however, for several reasons, including the fact that few cases have been litigated to completion. Thus, available data were generally data on amounts claimed, rather than amounts recovered in awards or settlements. Because final awards and settlements often differ significantly from initial claims, it is difficult to draw conclusions based on this data. In addition, commenters did not supply any additional information indicating that the currently required coverage levels should be changed. The Agency concluded, in light of the limited data, that it had insufficient basis to change the requirements at this time.

2. Distinction Between Sudden and Nonsudden Coverage. 40 CFR 264.147(a) and 265.147(a) require all owners or operators of hazardous waste facilities to have "sudden accidental" coverage. Owners and operators of surface impoundments, landfills, or land treatment facilities used to manage hazardous wastes also are required to have "nonsudden accidental" coverage (40 CFR 264.147(b) and 265.147(b)).

A number of commenters on the August 21, 1985, NPRM suggested that the Agency no longer distinguish between sudden and nonsudden accidental coverage. They argued that nonsudden coverage was difficult to obtain, and that insurers were beginning to issue combined policies for sudden and nonsudden coverage. (A more complete discussion of comments on this point is provided in documents accompanying today's rulemaking.)

EPA has decided to maintain the distinction between sudden and nonsudden coverage. The Agency believes that maintaining distinct coverage requirements is still appropriate. Further, the insurance industry continues to write policies that distinguish between sudden and nonsudden events. EPA recognizes, however, that in some cases, courts have interpreted coverage for sudden events broadly to include damage from a gradual release occurring over long periods of time. As a result, some insurers do not distinguish between sudden and nonsudden events, but offer

"combined coverage": coverage for both sudden and nonsudden events on the same policy with single aggregate and per- occurrence limits. Today's rule includes a change to the coverage requirements citation specifying that the Agency will accept "combined coverage" policies, but to provide equivalent levels of coverage, the limits must be at least $4 million per-occurrence ($1 million sudden plus $3 million nonsudden) and $8 million annual aggregate ($2 million sudden plus $6 million nonsudden).

3. Exclusion of Legal Defense Costs from Policy Limits. Currently, Subpart H requires an owner or operator of a TSDF to maintain liability coverage for sudden and nonsudden accidental occurrences at specified levels, exclusive of legal defense costs (40 CFR 264.147 (a) and (b) and 265.147 (a) and (b)). The Agency decided to exclude legal defense costs for two reasons: (1) The insurance industry standard for CGL policies excluded legal defense costs from the coverage, and (2) legal defense costs could absorb a major portion of the required coverage, leaving an inadequate amount to cover actual damages. The Agency continues to believe that these reasons remain valid and do not affect the availability of insurance.

In its August 21, 1985 NPRM the Agency requested comment on whether, in an effort to increase the availability of EIL coverage for TSDFs, legal defense costs should be included in coverage limits. A number of commenters supported including legal defense costs. They argued that the EIL coverage currently available to TSDFs is written to include defense costs within policy limits.

The Agency contacted insurance companies known to provide EIL coverage to ask whether their EIL policies included or excluded legal defense costs. Although some companies stated that defense costs are included in the coverage limits, others said that defense costs were excluded, or that the policy could be written to conform to the RCRA requirements; that is, policies could be written to exclude legal defense costs. Furthermore, current industry practice, including the present industry standard form for this type of insurance, still excludes defense costs from the coverage limits. In addition, while recently there have been attempts by insurers to limit defense cost exposure by including at least some defense costs within policy limits, the trend appears to be toward some other method of limiting costs outside of policy limits.

The second reason commenters presented for changing the RCRA requirements to include legal defense costs was that the assurance of the availability of defense costs is an important element of claims litigation and further that there were insufficient RCRA claims data to warrant requiring coverage excluding legal defense costs.

The Agency continues to believe that it is important for the full amount of liability coverage to be available to cover claims against owners or operators of TSDFs. The Agency decided on the current coverage levels after a thorough investigation of reported third-party damage cases from hazardous waste accidents and these levels do not account for legal defense costs.

Because the size of legal defense costs in this area is somewhat uncertain, the most secure method of ensuring that sufficient funds will be available to cover actual damages is to retain the requirement that defense costs be excluded.

Other commenters stated that including legal defense costs should be permissible, as long as the full amount of RCRA liability coverage was

available to claimants. EPA agrees. If the total coverage includes the full amount required for third-party liability plus additional coverage earmarked for legal defense costs, the policy would be acceptable under current regulations. Thus, for example, a policy would provide acceptable assurance for a surface impoundment if the total coverage was $5 million per occurrence and $10 million annual aggregate if legal defense costs covered under the policy were limited to a maximum of $1 million per occurrence and $2 million annual aggregate. A $5 million per occurrence, $8 million annual aggregate policy without an earmarked limit on legal defense costs would not provide adequate assurance.

4. Deductibles. A number of commenters argued that EPA should not require "first-dollar" coverage for liability costs. If deductibles were allowed, according to these commenters, insurance coverage might be easier to obtain or be less costly.

Although the insurer must provide first-dollar coverage, EPA notes that the regulations do not prevent insurers from requiring reimbursement from owners or operators for first-dollar expenditures. The owner or operator can agree in the insurance contract that the insurer will be reimbursed for these expenditures. The regulations do not, however, allow self-insurance retention. Policies cannot require the owner or operator to cover first-dollar expenditures. Such self-insurance is available to an owner or operator under the regulations only if it can pass the requirements established in the financial test for liability coverage.

EPA contacted a number of insurers to determine whether self-insurance retention could help to alleviate problems of insurance availability and affordability. In general, however, their responses indicated that current problems with EIL insurance are related to other factors, such as difficulty in predicting the size of the risk being covered, and that deductibles would not significantly enhance insurance availability. Therefore, the Agency is retaining the current first-dollar coverage requirement.

C. Mechanisms Considered But Not Adopted

1. Security interests. Security interests are a special procedure, authorized under State law following a pattern established by the Uniform Commercial Code, for creating collateral to serve as a support for the repayment of loans or other financial obligations. Security interests were considered but rejected for liability coverage because of the complicated legal requirements that have to be satisfied to ensure that they provide effective financial assurance. For example, security interests ordinarily must be perfected by filing papers with appropriate agencies in each jurisdiction where collateral exists, and these filings must be kept up to date. EPA would be required to verify that proper filings had occurred. In addition, the Agency would also have to determine that the collateral underlying the agreement had been valued properly. If not, the proceeds from sale of the collateral might fail to supply the amounts required to satisfy valid claims. Finally, the need to satisfy specific legal processes prior to liquidation of collateral could delay payment of valid third-party claims.

Because of these problems, EPA has decided not to adopt security interests at this time.

2. Indemnity contracts. Indemnity contracts are legally binding commitments by a third party or "indemnitor" to pay a debt or obligation of another party. The duty of the indemnitor generally is to repay the primary

debtor after it has satisfied the debt or obligation. The Agency was not willing to adopt such a mechanism because of the administrative difficulties and lengthy time needed to enforce such contracts.

An indemnity contract also may be established in which the indemnitor agrees to assume the obligation even if the primary debtor does not pay. Such a contract, however, so closely resembles a guarantee that EPA determined that in effect no additional financial assurance option would be added to the regulations by inclusion of the indemnity. Therefore the Agency has not added an indemnity contract to the set of options authorized in today's rule.

3. Reserve funds. As a temporary measure pending the growth of the insurance market, some commenters suggested that owners or operators set aside the equivalent of insurance premiums in a reserve fund. Such a mechanism could function in a manner similar to trusts, if control over the fund were given to an independent fiduciary agent. Alternatively, however, some commenters suggested that the reserve fund be only a separate bookkeeping entity under the control of the owner or operator. EPA believes that neither approach would ensure that the reserve would contain sufficient funds when required to satisfy claims. Liability coverage funds may be needed at any time after implementation of the mechanism. Because a reserve fund based on the estimated equivalent of insurance premiums, rather than the amounts equal to the required coverage levels, would accumulate slowly, it would be unlikely to contain adequate funds to satisfy liability claims, especially in the early years.

In addition, EPA is convinced that a reserve fund that is not under the control of an independent trustee but instead remains under the control of the TSDF owner or operator will not provide satisfactory financial assurance.
No independent third party would administer the reserve fund, including assessing its value and controlling payments from the fund. The Agency determined, therefore, not to authorize the use of reserves. Today's rule authorizes a fully funded trust fund, for owners and operators who want to use a similar mechanism.

4. Federal Insurance or Loan Guarantees. Some commenters pointed to other financial assurance programs utilizing Federal insurance or loan guarantees as possible models for EPA. Establishment of insurance or loan guarantees requires specific statutory authority that has not been granted to the Agency. Further, EPA does not believe that as an agency whose primary mandate is protection of human health and the environment, it currently possesses the expertise or resources to administer either an insurance or a loan guarantee program. Such programs or approaches would require the Agency to assess financial characteristics of owners or operators, and to make decisions concerning the validity of claims, when those assessments and decisions can be made more accurately and efficiently by existing institutions that provide financial assurance.

5. Captive Insurance Pools and Risk Retention Groups. EPA believes it is unnecessary in today's rulemaking explicitly to authorize the use of captive insurance pools and risk retention groups. Such instruments are already authorized as forms of insurance. If the policies offered by a pool or risk retention group satisfy EPA requirements, such policies provide acceptable financial assurance.

D. Authorize Waivers

A number of commenters, particularly those from industry, supported granting temporary waivers on a case-by-case basis if a firm can demonstrate that it has made a "good faith effort" to obtain the required liability insurance. However, the Agency believes that the authorization of additional mechanisms, existing enforcement policies, the somewhat improved insurance market for TSDFs and the increased potential of insurance offered by risk retention groups, provide a better solution than simply waiving the liability coverage requirements. Also, existing regulations enable Regional Administrators to grant variances (Secs. 264.147(c) and 265.147(c)) or adjustments (Sec. 264.147(d) and 265.147(d)) to the required liability coverage amounts, if this is justified by the degree and duration of risk associated with a TSDF. The Agency believes that justifiable modifications in the amount of coverage needed are more consistent with the objectives of the liability coverage requirements than would be relieving owners or operators of these requirements entirely, solely because they made a "good faith" effort to obtain coverage.

VI. Consistency With Other Existing and Proposed Financial Assurance Requirements

EPA currently allows owners or operators of hazardous waste TSDFs to use the mechanisms being approved in today's rule, including trust funds, letters of credit, surety bonds, and corporate guarantee contracts, to provide financial assurance for the costs of closure and post-closure care (40 CFR 264.143, 264.145, 264.151, 265.143, and 265.145), and has proposed their use for corrective action (51 FR 37854, October 24, 1986). As described above, certain features of the assurance mechanisms are different because of the differences between these programs and liability coverage.

In addition, EPA has proposed financial assurance rules applicable to owners and operators of underground storage tanks (USTs) containing petroleum under sections 9003 (c) and (d) of RCRA as amended by HSWA (RCRA Subtitle I), and by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (52 FR 12662, April 17, 1987). The proposed rule would establish requirements for demonstrating financial responsibility for taking corrective action and compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases arising from operating an underground storage tank containing petroleum. As in today's rule, under the UST proposal, owners and operators of underground storage tanks containing petroleum would be allowed to use letters of credit, surety bonds, and expanded guarantees to demonstrate financal responsibility for the costs of corrective action and third-party liability claims (52 FR 12786, 12844, April 17, 1987).

VII. Technical Correction to 40 CFR 264.151(b)

The May 2, 1986 rule amending the closure, post-closure care, and financial assurance regulations mistakenly omitted a portion of the required language for the financial guarantee bond found in 40 CFR 264.151(b) (see 51 FR 16422, 16450). Today's rule makes a technical correction to the regulation to restore the required wording of the bond.

VIII. Effective Date

This regulation is being published as a final rule, effective in 30 days.

Section 3010(b) of RCRA provides that EPA's hazardous waste regulations and revisions thereto generally take effect six months after their promulgations.

The purpose of this requirement is to allow sufficient time for the regulated community to comply with major new regulatory requirements. The statute allows for a shorter period prior to the effective date, if (i) the Administrator finds that the regulated community does not need six months to come into compliance; (ii) the regulation responds to an emergency situation, or (iii) other good cause. The Agency believes that since the regulation does not add any compliance requirements, but rather expands the number of mechanisms owners or operators may use to come into compliance, a six-month period prior to the effective date is unnecessary.

Today's amendment adopts additional mechanisms for complying with third-part liability coverage requirements and thus makes it easier for some owners and operators to act in accordance with the RCRA liability coverage regulations. An effective date six months after promulgation for the amendment promulgated today would substantially delay the implementation of the regulations and would be contrary to the interest of the regulated community and the public. Accordingly, the Agency believes that it makes little sense to delay needed relief to owners or operators by an additional five months.

IX. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. (See 40 CFR Part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under RCRA sections 3008, 7003, and 3013, although authorized States have primary enforcement responsibility.

Prior to HSWA, a State with final authorization administered its hazardous waste program entirely in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in a State where the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under section 3006(g) of RCRA, 42 U.S.C. 6926(g), new requirements and prohibitions imposed by the HSWA take effect in authorized States at the same time that they take effect in non-authorized States. EPA is directed to carry out those requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, the HSWA requirements and prohibitions apply in authorized States in the interim.

B. Effect of Rule on State Authorizations

Today's rule promulgates standards that will not be effective in authorized States since the requirements are not being imposed pursuant to HSWA. Thus, the requirements will be applicable only in those States that do not have interim or final authorization. In authorized States, the requirements will not be applicable until the State revises its program to adopt equivalent requirements under State law.

In general, 40 CFR 271.21(e)(2) requires that States that have final

authorization to modify their programs to reflect Federal program changes and subsequently submit the modifications to EPA for approval. It should be noted, however, that authorized States are only required to modify their programs when EPA promulgates Federal standards that are more stringent or broader in scope than the existing Federal standards. Section 3009 of RCRA allows States to impose standards more stringent than those in the Federal program. For those Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs (see 40 CFR 271.1(i)). The standards promulgated today are less stringent than or reduce the scope of the existing Federal requirements.

Therefore, authorized States will not be required to modify their programs to adopt requirements equivalent or substantially equivalent to the provisions listed above. If the State does modify its program, EPA must approve the modification for the State requirements to become Subtitle C RCRA requirements. States should follow the deadlines of 40 CFR 271.21(e)(2) if they desire to adopt this less stringent requirement.

X. Executive Order 12291

Under Executive Order 12291 (section 3(b)) the Agency must judge whether a regulation is major and thus subject to the requirement of a Regulatory Impact Analysis. The notice published today is not major because the rule will not result in an effect on the economy of $100 million or more, will not result in increased costs or prices, will not have significant adverse effects on competition, employment, investment, productivity, and innovation, and will not significantly disrupt domestic or export markets. Therefore, the Agency has not prepared a Regulatory Impact Analysis under the Executive Order.

This regulation was submitted to the Office of Management and Budget (OMB) for review as required by Exective Order No. 12291.

XI. Regulatory Flexibility Act

Under the Regulatory Flexibility Act of 1980 (5 U.S.C. 601 et seq.), Federal agencies must, in developing regulations, analyze their impact on small entities (small businesses, small government jurisdictions, and small organizations). This rule relaxes the existing financial assurance requirements and thus reduces costs associated with compliance. Accordingly, I certify that this regulation will not have a significant economic impact on a substantial number of small entities.

XII. Supporting Documents

Supporting documents available for this interim final rule include comments on the August 21, 1985 Proposed Rule, summary of the comments on the July 11, 1986 Interim Final Rule, and background documents on the finanical test for liability coverage. In addition, background documents prepared for previous financial assurance regulations, as well as documents prepared for this rulemaking, are also available as are letters received from State Attorneys General concerning the corporate guarantee for liability.

All of these supporting materials are available for review in the EPA public docket (RCRA docket #F-88-CGF1-FFFFF), Room S-212, Waterside Mall, 401 M Street, SW., Washington, DC 20460.

List of Subjects

40 CFR Part 264

Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Surety bonds.

40 CFR Part 265

Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Surety bonds.

Date: August 19, 1988.
Lee M. Thomas,
Administrator.

For the reasons set out in the preamble, Title 40, Chapter I of the Code of Federal Regulations is amended as set forth below.

40 CFR Part 264 is amended as follows:

PART 264--STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT,
STORAGE, AND DISPOSAL FACILITIES: LIABILITY COVERAGE

1. The authority citation for Part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. In Sec. 264.141, new paragraph (h) is added to read as follows:

Sec. 264.141 Definitions of terms as used in this subpart.

* * * * *

(h) "Substantial business relationship" means the extent of a business relationship necessary under applicable State law to make a guarantee contract issued incident to that relationship valid and enforceable. A "substantial business relationship" must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the applicable EPA Regional Administrator.

3. In Sec. 264.147, paragraph (h) is redesignated as paragraph (k); paragraphs (a) introductory text, (a)(2), (a)(3), (b) introductory text, (b)(2), (b)(3), (b)(4), (g) heading and (g)(1) introductory text are revised, and by removing and reserving paragraph (g)(1)(ii); paragraphs (g)(2)(i) and (g)(2)(ii) are amended by removing "corporate;" and new paragraphs (a)(4), (a)(5), (a)(6), (a)(7), (b)(5), (b)(6), (b)(7), (h), (i), and (j) are added, to read as follows:

Sec. 264.147 Liability requirements.

(a) Coverage for sudden accidental occurrences. An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs.

This liability coverage may be demonstrated as specified in paragraphs (a)(1), (2), (3), (4), (5), or (6) of this section:

* * * * *

(2) An owner or operator may meet the requirements of this section by

passing a financial test or using the guarantee for liability coverage as specified in paragraph (g) of this section.

(3) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in paragraph (h) of this section.

(4) An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in paragraph (i) of this section.

(5) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in paragraph (j) of this section.

(6) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this section. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days (i) whenever a claim for bodily injury or property damages caused by the operation of a hazardous waste treatment, storage, or disposal facility is made against the owner or operator or an instrument providing financial assurance for liability coverage under this section and (ii) whenever the amount of financial assurance for liability coverage under this section provided by a financial instrument authorized by paragraphs (a)(1) through (a)(6) of this section is reduced.

(b) Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. An owner or operator who must meet the requirements of this section may combine the required per- occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least $4 million per occurrence and $8 million annual aggregate. This liability coverage may be demonstrated as specified in paragraphs (b) (1), (2), (3), (4), (5), or (6), of this section:

* * * * *

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in paragraphs (f) and (g) of this section.

(3) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in paragraph (h) of this section.

(4) An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in paragraph (i) of this section.

(5) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in paragraph (j) of this section.

(6) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amount required by this section. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days (i) whenever a claim for bodily injury or property damages caused by the operation of a hazardous waste treatment, storage, or disposal facility is made against the owner or operator or an instrument providing financial assurance for liability coverage under this section and (ii) whenever the amount of financial assurance for liability coverage under this section provided by a financial instrument authorized by paragraphs (a)(1) through (a)(6) of this section is reduced.

* * * * *

(g) Guarantee for liability coverage. (1) Subject to paragraph (g)(2) of this section, an owner or operator may meet the requirements of this section by obtaining a written guarantee, hereinafter referred to as "guarantee." The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (f)(6) of this section. The wording of the guarantee must be identical to the wording specified in Sec. 264.151(h)(2) of this part. A certified copy of the guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this

letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

* * * * *

(h) Letter of credit for liability coverage. (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter or credit that conforms to the requirements of this paragraph and submitting a copy of the letter of credit to the Regional Administrator.

(2) The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

(3) The wording of the letter of credit must be identical to the wording specified in Sec. 264.151(k) of this part.

(i) Surety bond for liability coverage. (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond that conforms to the requirements of this paragraph and submitting a copy of the bond to the Regional Administrator.

(2) The surety company issuing the bond must be among those listed as acceptable sureties on Federal bonds in the most recent Circular 570 of the U.S. Department of the Treasury.

(3) The wording of the surety bond must be identical to the wording specified in Sec. 264.151(1) of this part.

(4) A surety bond may be used to satisfy the requirements of this section only if the Attorneys General or Insurance Commissioners of (i) the State in which the surety is incorporated, and (ii) each State in which a facility covered by the surety bond is located have submitted a written statement to EPA that a surety bond executed as described in this section and Sec.

264.151(1) of this part is a legally valid and enforceable obligation in that State.

(j) Trust fund for liability coverage. (1) An owner or operator may satisfy the requirements of this section by establishing a trust fund that conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator.

(2) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(3) The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this section. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in this section to cover the

difference. For purposes of this paragraph, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden and/or nonsudden occurrences required to be provided by the owner or operator by this section, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

(4) The wording of the trust fund must be identical to the wording specified in Sec. 264.151(m) of this part.

Sec. 264.151 (Amended)

4. In Sec. 264.151 paragraph (b) is amended by adding the following text to the end of the "Financial Guarantee Bond" to read as follows:

(b) * * *

Financial Guarantee Bond

* * * * *

Or, if the Principal shall provide alternate financial assurance, as specified in Subpart H of 40 CFR Part 264 or 265, as applicable, and obtain the EPA Regional Administrator's written approval of such assurance, within 90 days after the date notice of cancellation is received by both the Principal and the EPA Regional Administrator(s) from the Surety(ies), then this obligation shall be null and void; otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by an EPA Regional Administrator that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the EPA Regional Administrator.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is (are) located, provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by both the Principal and the EPA Regional Administrator(s), as evidenced by the return receipts.

The Principal may terminate this bond by sending written notice to the Surety(ies), provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the EPA Regional Administrator(s) of the EPA Region(s) in which the bonded facility(ies) is (are) located.

(The following paragraph is an optional rider that may be included but is not required.)

Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure and/or post-closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the

written permission of the EPA Regional Administrator(s).

In Witness Whereof, the Principal and Surety(ies) have executed this Financial Guarantee Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 40 CFR 264.151(b) as such regulations were constituted on the date this bond was executed.

Principal

(Signature(s))----------

(Name(s))----------

(Title(s))----------

(Corporate seal)----------

Corporate Surety(ies)

(Name and address) State of incorporation:)----------

Liability limit: $----------

(Signature(s))

(Name(s) and title(s))

(Corporate seal)

(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.) Bond premium: $----------

5. In Sec. 264.151, paragraph (g) is revised to read as follows:

(g) A letter from the chief financial officer, as specified in Sec. 264.147(f) or Sec. 265.147(f) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted.

Letter From Chief Financial Officer

(Address to Regional Administrator of every Region in which facilities for which financial responsibility is to be demonstrated through the financial test are located.)

I am the chief financial officer of (firm's name and address). This letter is in support of the use of the financial test to demonstrate financial responsibility for liability coverage (insert "and closure and/or post-closure care" if applicable) as specified in Subpart H of 40 CFR Parts 264 and 265.

(Fill out the following paragraphs regarding facilities and liability coverage. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, and address.)

The firm identified above is the owner or operator of the following facilities for which liability coverage for (insert "sudden" or "nonsudden" or "both sudden and nonsudden") accidental occurrences is being

demonstrated through the financial test specified in Subpart H of 40 CFR Parts 264 and 265: .

The firm identified above guarantees, through the guarantee specified in Subpart H or 40 CFR Parts 264 and 265, liability coverage for (insert "sudden" or "nonsudden" or "both sudden and nonsudden") accidental occurrences at the following facilities owned or operated by the following: . The firm identified above is (insert one or more: (1) The direct or higher-tier parent corporation of the owner or operator; (2) owned by the same parent corporation as the parent corporation of the owner or operator, and receiving the following value in consideration of this guarantee ; or (3) engaged in the following substantial business relationship with the owner or operator , and receiving the following value in consideration of this guarantee .) (Attach a written description of the business relationship or a copy of the contract establishing such relationship to this letter.)

(If you are using the financial test to demonstrate coverage of both liability and closure and post-closure care, fill in the following four paragraphs regarding facilities and associated closure and post-closure cost estimates. If there are no facilities that belong in a particular paragraph, write "None" in the space indicated. For each facility, include its EPA Identification Number, name, address, and current closure and/or post-closure cost estimates. Identify each cost estimate as to whether it is for closure or post-closure care.)

1. The firm identified above owns or operates the following facilities for which financial assurance for closure or post-closure care or liability coverage is demonstrated through the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure and/or post-closure cost estimate covered by the test are shown for each facility: .

2. The firm identified above guarantees, through the guarantee specified in Subpart H of 40 CFR Parts 264 and 265, the closure and post-closure care or liability coverage of the following facilities owned or operated by the guaranteed party. The current cost estimates for the closure or post-closure care so guaranteed are shown for each facility: .

3. In States where EPA is not administering the financial requirements of Subpart H of 40 CFR Parts 264 and 265, this firm is demonstrating financial assurance for the closure or post-closure care of the following facilities through the use of a test equivalent or substantially equivalent to the financial test specified in Subpart H of 40 CFR Parts 264 and 265. The current closure or post-closure cost estimates covered by such a test are shown for each facility: .

4. The firm identified above owns or operates the following hazardous waste management facilities for which financial assurance for closure or, if a disposal facility, post-closure care, is not demonstrated either to EPA or a State through the financial test or any other financial assurance mechanisms specified in Subpart H of 40 CFR Parts 264 and 265 or equivalent or substantially equivalent State mechanisms. The current closure and/or post- closure cost estimates not covered by such financial assurance are shown for each facility: .

5. This firm is the owner or operator of the following UIC facilities for which financial assurance for plugging and abandonment is required under 40 CFR Part 144. The current closure cost estimates as required by 40 CFR 144.62 are shown for each facility: .

This firm (insert "is required" or "is not required") to file a Form 10K with the Securities and Exchange Commission (SEC) for the latest fiscal year.

The fiscal year of this firm ends on (month, day). The figures for the following items marked with an asterisk are derived from this firm's independently audited, year-end financial statements for the latest completed fiscal year, ended (date).

(Fill in part A if you are using the financial test to demonstrate coverage only for the liability requirements.)

Part A. Liability Coverage for Accidental Occurrences

(Fill in Alternative I if the criteria of paragraph (f)(1)(i) of Sec. 264.147 or Sec. 265.147 are used. Fill in Alternative II if the criteria of paragraph (f)(1)(ii) of Sec. 264.147 or Sec. 265.147 are used.)

Alternative I

1.	Amount of annual aggregate liability coverage to be demonstrated	$
*2.	Current assets	$
*3.	Current liabilities	$
4.	Net working capital (line 2 minus line 3)	$
*5.	Tangible net worth	$
*6.	If less than 90% or assets are located in the U.S., given total U.S. assets	$
		Yes No
7.	Is line 5 at least $10 million?	
8.	Is line 4 at least 6 times line 1?	
9.	Is line 5 at least 6 times line 1?	
*10.	Are at least 90% of assets located in the U.S.? If not, complete line 11.	
11.	Is line 6 at least 6 times line 1?	

Alternative II

1.	Amount of annual aggregate liability coverage to be demonstrated	$
2.	Current bond rating of most recent issuance and name of rating service	
3.	Date of issuance of bond	
4.	Date of maturity of bond	
*5.	Tangible net worth	$
*6.	Total assets in U.S. (required only if less than 90% of assets are located in the U.S.)	$
		Yes No
7.	Is line 5 at least $10 million?	
8.	Is line 5 at least 6 times line 1?	
9.	Are at least 90% of assets located in the U.S.? If not, complete line 10.	
10.	Is line 6 at least 6 times line 1?	

(Fill in part B if you are using the financial test to demonstrate

assurance of both liability coverage and closure or post-closure care.)

Part B. Closure or Post-Closure Care and Liability Coverage

(Fill in Alternative I if the criteria of paragraphs (f)(1)(i) of Sec. 264.143 or Sec. 264.145 and (f)(1)(i) of Sec. 264.147 are used or if the criteria of paragraphs (e)(1)(i) of Sec. 265.143 or Sec. 265.145 and (f)(1)(i) of Sec. 265.147 are used. Fill in Alternative II if the criteria of paragraphs (f)(1)(ii) of Sec. 264.143 or Sec. 264.145 and (f)(1)(ii) of Sec. 264.147 are used or if the criteria of paragraphs (e)(1)(ii) of Sec. 265.143 or Sec. 265.145 and (f)(1)(ii) of Sec. 265.147 are used.)

Alternative I			
	1.	Sum of current closure and post-closure cost estimates (total of all cost estimates listed above)	$
	2.	Amount of annual aggregate liability coverage to be demonstrated	$
	3.	Sum of lines 1 and 2	$
	*4.	Total liabilities (if any portion of your closure or post-closure cost estimates is included in your total liabilities, you may deduct that portion from this line and add that amount to lines 5 and 6)	$
	*5.	Tangible net worth	$
	*6.	Net worth	$
	*7.	Current assets	$
	*8.	Current liabilities	$
	9.	Net working capital (line 7 minus line 8)	$
	*10.	The sum of net income plus depreciation, depletion, and amortization	$
	*11.	Total assets in U.S. (required only if less than 90% of assets are located in the U.S.)	$
			Yes / No
	12.	Is line 5 at least $10 million?	
	13.	Is line 5 at least 6 times line 3?	
	14.	Is line 9 at least 6 times line 3?	
	*15.	Are at least 90% of assets located in the U.S.? If not, complete line 16.	
	16.	Is line 11 at least 6 times line 3?	
	17.	Is line 4 divided by line 6 less than 2.0?	
	18.	Is line 10 divided by line 4 greater than 0.1?	
	19.	Is line 7 divided by line 8 greater than 1.5?	
Alternative II			
	1.	Sum of current closure and post-closure cost estimates (total of all cost estimates listed above)	$
	2.	Amount of annual aggregate liability coverage to be demonstrated	$
	3.	Sum of lines 1 and 2	$
	4.	Current bond rating of most recent issuance and name of rating service	
	5.	Date of issuance of bond	
	6.	Date of maturity of bond	
	*7.	Tangible net worth (if any portion of the closure or	$

post-closure cost estimates is included in "total liabilities" on your financial statements you may add that portion to this line)

*8. Total assets in the U.S. (required only if less than 90% of assets are located in the U.S.) $

Yes No

9. Is line 7 at least $10 million?

10. Is line 7 at least 6 times line 3?

*11. Are at least 90% of assets located in the U.S.? If not, complete line 12.

12. Is line 8 at least 6 times line 3?

I hereby certify that the wording of this letter is identical to the wording specified in 40 CFR 264.151(g) as such regulations were constituted on the date shown immediately below.

(Signature)----------

---

6. Section 264.151(h)(2) is amended by revising the heading for the "Corporate Guarantee for Liability Coverage" to read "Guarantee for Liability Coverage" and by removing "corporate" from paragraph (h)(2); and by removing paragraph 12 of the "Guarantee for Liability Coverage"; redesignating paragraphs 4 through 11 as paragraphs 5 through 12, adding new paragraphs 4, 13 and 14; and revising paragraph 10; to read as follows:

* * * * *

(h) * * *

(2) * * *

Guarantee for Liability Coverage

* * * * *

4. Such obligation does not apply to any of the following:

(a) Bodily injury or property damage for which (insert owner or operator) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert owner or operator) would be obligated to pay in the absnce of the contract or agreement.

(b) Any obligation of (insert owner or operator) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:

(1) An employee of (insert owner or operator) arising from, and in the course of, employment by (insert owner or operator); or
(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert owner or operator). This exclusion applies:
(A) Whether (insert owner or operator) may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:
(1) Any property owned, rented, or occupied by (insert owner or operator);
(2) Premises that are sold, given away or abandoned by (insert owner or operator) if the property damage arises out of any part of those premises;
(3) Property loaned to (insert owner or operator);
(4) Personal property in the care, custody or control of (insert owner or operator);
(5) That particular part of real property on which (insert owner or operator) or any contractors or subcontractors working directly or indirectly on behalf of (insert owner or operator) are performing operations, if the property damage arises out of these operations.

* * * * *

10. (Insert the following language if the guarantor is (a) a direct or higher-tier corporate parent, or (b) a firm whose parent corporation is also the parent corporation of the owner or operator):
Guarantor may terminate this guarantee by sending notice by certified mail to the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and to (owner or operator), provided that this guarantee may not be terminated unless and until (the owner or operator) obtains, and the EPA Regional Administrator(s) approve(s), alternate liability coverage complying with 40 CFR 264.147 and/or 265.147.

(Insert the following language if the guarantor is a firm qualifying as a guarantor due to its "substantial business relationship" with the owner or operator):
Guarantor may terminate this guarantee 120 days following receipt of notification, through certified mail, by the EPA Regional Administrator(s) for the Region(s) in which the facility(ies) is(are) located and by (the owner or operator).

* * * * *

13. The Guarantor shall satisfy a third-party liability claim only on receipt of one of the following documents:
(a) Certification from the Principal and the third-party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:
Certification of Valid Claim

The undersigned, as parties (insert Principal) and (insert name and address of third-party claimant(s)), hereby certify that the claim of bodily injury and/or property damage cuased by a (sudden or nonsudden) accidental occurrence arising from operating (Principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $( ).

(Signatures)
Principal

(Notary) Date

(Signatures)
Claimant(s)

(Notary) Date

(b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

14. In the event of combination of this guarantee with another mechanism to meet liability requirements, this guarantee will be considered (insert "primary" or "excess") coverage.

I hereby certify that the wording of the guarantee is identical to the wording specified in 40 CFR 264.151(h)(2) as such regulations were constituted on the date shown immediately below.

Effective date:----------

(Name of guarantor)
(Authorized signature for guarantor)
(Name of person signing)
(Title of person signing)
Signature of witness of notary:

---

7. In Sec. 264.151(i), paragraph 2.(d) of the "Hazardous Waste Facility Liability Endorsement" is revised to read as follows:

* * * * *

(i) * * *

Hazardous Waste Facility Liability Endorsement

* * * * *

(2) * * *

(d) Cancellation of this endorsement, whether by the Insurer, the insured, a parent corporation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility,

will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is(are) located.

8. In Sec. 264.151(j), paragraph 2.(d) of the "Hazardous Waste Facility Certificate of Liability Insurance" is revised to read as follows:

* * * * *

(j) * * *

Hazardous Waste Facility Certificate of Liability Insurance

(2) * * *

(d) Cancellation of the insurance, whether by the insurer, the insured, a parent corportation providing insurance coverage for its subsidiary, or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of 60 days after a copy of such written notice is received by the Regional Administrator(s) of the EPA Region(s) in which the facility(ies) is(are) located.

* * * * *

9. In Sec. 264.151, a new paragraph (k) is added to read as follows:

* * * * *

(k) A letter of credit, as specified in Sec. 264.147(h) or Sec. 265.147(h) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Irrevocable Standby Letter of Credit

Name and Address of Issuing Institution
Regional Administrator(s)
Region(s)
U.S. Environmental Protection Agency

Dear Sir or Madam: We hereby establish our Irrevocable Standby Letter of Credit No. in the favor of any and all third-party liability claimants, at the request and for the account of (owner's or operator's name and address) for third-party liability awards or settlements up to (in words) U.S. dollars $ per occurrence and the annual aggregate amount of (in words) U.S. dollars $, for sudden accidental occurrences and/or for third-party liability awards or settlements up to the amount of (in words) U.S. dollars $ per occurrence, and the annual aggregate amount of (in words) U.S. dollars $, for nonsudden accidental occurrences available upon presentation of a sight draft, bearing reference to this letter of credit No. , and (1) a signed certificate reading as follows:

Certification of Valid Claim

The undersigned, as parties (insert principal) and (insert name and address of third-party claimants), hereby certify that the claim of bodily injury (and/or) property damage caused by a (sudden or nonsudden) accidental occurrence arising from operations of (principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $. We hereby certify that the claim does not apply to any of the

following:
(a) Bodily injury or property damage for which (insert principal) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert principal) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert principal) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:
(1) An employee of (insert principal) arising from, and in the course of, employment by (insert principal); or
(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert principal).

This exclusion applies:
(A) Whether (insert principal) may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:
(1) Any property owned, rented, or occupied by (insert principal);
(2) Premises that are sold, given away or abandoned by (insert principal) if the property damage arises out of any part of those premises;
(3) Property loaned to (insert principal);
(4) Personal property in the care, custody or control of (insert principal);
(5) That particular part of real property on which (insert principal) or any contractors or subcontractors working directly or indirectly on behalf of (insert principal) are performing operations, if the property damage arises out of these operations.

(Signatures)
Principal

(Signatures)
Claimant(s)

or (2) a valid final court order establishing a judgment against the principal for bodily injury or property damage caused by a sudden or nonsudden accidental occurrence arising from operation of the principal's facility or group of facilities.

This letter of credit is effective as of (date) and shall expire on (date at least one year later), but such expiration date shall be automatically extended for a period of (at least one year) on (date) and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you, the USEPA Regional Administrator for Region

(Region #), and (owner's or operator's name) by certified mail that we have decided not to extend this letter of credit beyond the current expiration date.

Whenever this letter of credit is drawn on under and in compliance with the terms of this credit, we shall duly honor such draft upon presentation to us.

In the event that this letter of credit is used in combination with another mechanism for liability coverage, this letter of credit shall be considered (insert "primary" or "excess") coverage.

We certify that the wording of this letter of credit is identical to the wording specified in 40 CFR 264.151(k) as such regulations were constituted on the date shown immediately below.

(Signature(s) and title(s) of official(s) of issuing institution)
(Date)

This credit is subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce" or "the Uniform Commercial Code").

10. In Sec. 264.151, a new paragraph (1) is added to read as follows:
* * * * *

(1) A surety bond, as specified in Sec. 264.147(h) or Sec. 265.147(h) of this chapter, must be worded as follows: except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Payment Bond

Surety Bond No. (Insert number)

Parties (Insert name and address of owner or operator), Principal, incorporated in (Insert State of incorporation) of (Insert city and State of principal place of business) and (Insert name and address of surety company(ies)), Surety Company(ies), of (Insert surety(ies) place of business).

EPA Identification Number, name, and address for each facility guaranteed by this bond:

	Sudden accidental occurrences	Nonsudden accidental occurrences
Penal Sum Per Occurrence	(insert amount)	(insert amount)
Annual Aggregate	(insert amount)	(insert amount)

Purpose: This is an agreement between the Surety(ies) and the Principal under which the Surety(ies), its(their) successors and assignees, agree to be responsible for the payment of claims against the Principal for bodily injury and/or property damage to third parties caused by ("sudden" and/or

"nonsudden") accidental occurrences arising from operations of the facility or group of facilities in the sums prescribed herein; subject to the governing provisions and the following conditions.

Governing Provisions:
(1) Section 3004 of the Resource Conservation and Recovery Act of 1976, as amended.

(2) Rules and regulations of the U.S. Environmental Protection Agency (EPA), particularly 40 CFR ("Sec. 264.147" or "Sec. 265.147") (if applicable).

(3) Rules and regulations of the governing State agency (if applicable) (insert citation).

Conditions:
(1) The Principal is subject to the applicable governing provisions that require the Principal to have and maintain liability coverage for bodily injury and property damage to third parties caused by ("sudden" and/or "nonsudden") accidental occurrences arising from operations of the facility or group of facilities. Such obligation does not apply to any of the following:
(a) Bodily injury or property damage for which (insert principal) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert principal) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert principal) under a workers' compensation, disability benefits, or unemployment compensation law or similar law.
(c) Bodily injury to:
(1) An employee of (insert principal) arising from, and in the course of, employment by (insert principal); or
(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert principal). This exclusion applies:
(A) Whether (insert principal) may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).

(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle or watercraft.

(e) Property damage to:
(1) Any property owned, rented, or occupied by (insert principal);
(2) Premises that are sold, given away or abandoned by (insert principal) if the property damage arises out of any part of those premises;
(3) Property loaned to (insert principal);
(4) Personal property in the care, custody or control of (insert principal);
(5) That particular part of real property on which (insert principal) or any contractors or subcontractors working directly or indirectly on behalf of (insert principal) are performing operations, if the property damage arises out of these operations.

(2) This bond assures that the Principal will satisfy valid third party liability claims, as described in condition 1.

(3) If the Principal fails to satisfy a valid third party liability claim, as described above, the Surety(ies) becomes liable on this bond obligation.

(4) The Surety(ies) shall satisfy a third party liability claim only upon the receipt of one of the following documents:
(a) Certification from the Principal and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:
Certification of Valid Claim

The undersigned, as parties (insert name of Principal) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidential occurrence arising from operating (Principal's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $( ).

(Signature)
Principal

(Notary) Date

(Signature(s))
Claimant(s)

(Notary) Date

or (b) A valid final court order establishing a judgment against the Principal for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Principal's facility or group of facilities.

(5) In the event of combination of this bond with another mechanism for liability coverage, this bond will be considered (insert "primary" or "excess") coverage.

(6) The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until such payment or payments shall amount in the aggregate to the penal sum of the bond. In no event shall the obligation of the Surety(ies) hereunder exceed the amount of said annual aggregate penal sum, provided that the Surety(ies) furnish(es) notice to the Regional Administrator forthwith of all claims filed and payments made by the Surety(ies) under this bond.

(7) The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and the USEPA Regional Administrator for Region (Region #), provided, however, that cancellation shall not occur during the 120 days beginning on the date of receipt of the notice of cancellation by the Principal and the Regional Administrator, as evidenced by the return receipt.

(8) The Principal may terminate this bond by sending written notice to the Surety(ies) and to the EPA Regional Administrator(s) of the EPA Region(s) in which the bonded facility(ies) is (are) located.

(9) The Surety(ies) hereby waive(s) notification of amendments to applicable laws, statutes, rules and regulations and agree(s) that no such amendment shall in any way alleviate its (their) obligation on this bond.

(10) This bond is effective from (insert date) (12:01 a.m., standard time, at the address of the Principal as stated herein) and shall continue in force until terminated as described above.

In Witness Whereof, the Principal and Surety(ies) have executed this Bond and have affixed their seals on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to execute this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in 40 CFR 264.151(1), as such regulations were constituted on the date this bond was executed.

PRINCIPAL

(Signature(s))
(Name(s))
(Title(s))
(Corporate Seal)

CORPORATE SURETY(IES)

(Name and address) State of incorporation:---------- Liability Limit: $----------

(Signature(s))
(Name(s) and title(s))
(Corporate seal)
(For every co-surety, provide signature(s), corporate seal, and other information in the same manner as for Surety above.) Bond premium: $----------

11. In Sec. 264.151, a new paragraph (m) is added to read as follows:

* * * * *

(m)(1) A trust agreement, as specified in Sec. 264.147(j) or Sec. 265.147(j) of this chapter, must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:

Trust Agreement

Trust Agreement, the "Agreement," entered into as of (date) by and between (name of the owner or operator) a (name of State) (insert "corporation," "partnership," "association," or "proprietorship"), the "Grantor," and (name of corporate trustee), (insert, "incorporated in the State of " or "a national bank"), the "trustee."

Whereas, the United States Environmental Protection Agency, "EPA," an agency of the United States Government, has established certain regulations applicable to the Grantor, requiring that an owner or operator of a hazardous waste management facility or group of facilities must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental and/or nonsudden accidental occurrences

arising from operations of the facility or group of facilities.

Whereas, the Grantor has elected to establish a trust to assure all or part of such financial responsibility for the facilities identified herein.

Whereas, the Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this agreement, and the Trustee is willing to act as trustee.

Now, therefore, the Grantor and the Trustee agree as follows:
Section 1. Definitions. As used in this Agreement:
(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

Section 2. Identification of Facilities. This agreement pertains to the facilities identified on attached schedule A (on schedule A, for each facility list the EPA Identification Number, name, and address of the facility(ies) and the amount of liability coverage, or portions thereof, if more than one instrument affords combined coverage as demonstrated by this Agreement).

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, hereinafter the "Fund," for the benefit of any and all third parties injured or damaged by (sudden and/or nonsudden) accidental occurrences arising from operation of the facility(ies) covered by this guarantee, in the amounts of (up to $1 million) per occurrence and (up to $2 million) annual aggregate for sudden accidental occurrences and (up to $3 million) per occurrence and (up to $6 million) annual aggregate for nonsudden occurrences, except that the Fund is not established for the benefit of third parties for the following:
(a) Bodily injury or property damage for which (insert Grantor) is obligated to pay damages by reason of the assumption of liability in a contract or agreement. This exclusion does not apply to liability for damages that (insert Grantor) would be obligated to pay in the absence of the contract or agreement.

(b) Any obligation of (insert Grantor) under a workers' compensation, disability benefits, or unemployment compensation law or any similar law.

(c) Bodily injury to:
(1) An employee of (insert Grantor) arising from, and in the course of, employment by (insert Grantor); or
(2) The spouse, child, parent, brother or sister of that employee as a consequence of, or arising from, and in the course of employment by (insert Grantor).

This exclusion applies:
(A) Whether (insert Grantor) may be liable as an employer or in any other capacity; and
(B) To any obligation to share damages with or repay another person who must pay damages because of the injury to persons identified in paragraphs (1) and (2).
(d) Bodily injury or property damage arising out of the ownership, maintenance, use, or entrustment to others of any aircraft, motor vehicle

or watercraft.

(e) Property damage to:
(1) Any property owned, rented, or occupied by (insert Grantor);
(2) Premises that are sold, given away or abandoned by (insert Grantor) if the property damage arises out of any part of those premises;
(3) Property loaned to (insert Grantor);
(4) Personal property in the care, custody or control of (insert Grantor);
(5) That particular part of real property on which (insert Grantor) or any contractors or subcontractors working directly or indirectly on behalf of (insert Grantor) are performing operations, if the property damage arises out of these operations.

In the event of combination with another mechanism for liability coverage, the fund shall be considered (insert "primary" or "excess") coverage.

The Fund is established initially as consisting of the property, which is acceptable to the Trustee, described in Schedule B attached hereto. Such property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement.
The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by EPA.

Section 4. Payment for Bodily Injury or Property Damage. The Trustee shall satisfy a third party liability claim by making payments from the Fund only upon receipt of one of the following documents;
(a) Certification from the Grantor and the third party claimant(s) that the liability claim should be paid. The certification must be worded as follows, except that instructions in brackets are to be replaced with the relevant information and the brackets deleted:
Certification of Valid Claim

The undersigned, as parties (insert Grantor) and (insert name and address of third party claimant(s)), hereby certify that the claim of bodily injury and/or property damage caused by a (sudden or nonsudden) accidental occurrence arising from operating (Grantor's) hazardous waste treatment, storage, or disposal facility should be paid in the amount of $( ).

(Signatures)
Grantor

(Signatures)
Claimant(s)

(b) A valid final court order establishing a judgment against the Grantor for bodily injury or property damage caused by sudden or nonsudden accidental occurrences arising from the operation of the Grantor's facility or group of facilities.

Section 5. Payments Comprising the Fund. Payments made to the Trustee for

the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management. The Trustee shall invest and reinvest the principal and income, in accordance with general investment policies and guidelines which the Grantor may communicate in writing to the Trustee from time to time, subject, however, to the provisions of this section. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence, and diligence under the circumstance then prevailing which persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 U.S.C. 80a-2.(a), shall not be acquired or held unless they are securities or other obligations of the Federal or a State government;

(ii) The Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the Federal or State government; and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

(a) To transfer from time to time any or all of the assets of the Fund to any common commingled, or collective trust fund created by the Trustee in which the fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C. 81a-1 et seq., including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition;

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers herein granted;

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depositary even though, when so deposited, such securities may be merged and held in bulk in the name of the nominee of such depositary with

other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund;

(d) To deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the Federal or State government; and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses. All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuations. The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the appropriate EPA Regional Administrator a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the EPA Regional Administrator shall constitute a conclusively binding assent by the Grantor barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel. The Trustee may from time to time consult with counsel, who may be counsel to the Grantor with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation. The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee. The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the EPA Regional Administrator, and the present Trustee by

certified mail 10 days before such change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendments to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests, and instructions. All orders, requests, and instructions by the EPA Regional Administrator to the Trustee shall be in writing, signed by the EPA Regional Administrators of the Regions in which the facilities are located, or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or EPA hereunder has occurred. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or EPA, except as provided for herein.

Section 15. Notice of Nonpayment. If a payment for bodily injury or property damage is made under Section 4 of this trust, the Trustee shall notify the Grantor of such payment and the amount(s) thereof within five (5) working days. The Grantor shall, on or before the anniversary date of the establishment of the Fund following such notice, either make payments to the Trustee in amounts sufficient to cause the trust to return to its value immediately prior to the payment of claims under Section 4, or shall provide written proof to the Trustee that other financial assurance for liability coverage has been obtained equalling the amount necessary to return the trust to its value prior to the payment of claims. If the Grantor does not either make payments to the Trustee or provide the Trustee with such proof, the Trustee shall within 10 working days after the anniversary date of the establishment of the Fund provide a written notice of nonpayment to the EPA Regional Administrator.

Section 16. Amendment of Agreement. This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the appropriate EPA Regional Administrator, or by the Trustee and the appropriate EPA Regional Administrator if the Grantor ceases to exist.

Section 17. Irrevocability and Termination. Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the EPA Regional Administrator, or by the Trustee and the EPA Regional Administrator, if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

The Regional Administrator will agree to termination of the Trust when the owner or operator substitutes alternate financial assurance as specified in this section.

Section 18. Immunity and Indemnification. The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Grantor or the EPA Regional Administrator issued in

accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law. This Agreement shall be administered, construed, and enforced according to the laws of the State of (enter name of State).

Section 20. Interpretation. As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

In Witness Whereof the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereunto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 40 CFR 264.151(m) as such regulations were constituted on the date first above written.

(Signature of Grantor)
(Title)

Attest:

(Title)
(Seal)

(Signature of Trustee)

Attest:

(Title)
(Seal)

(2) The following is an example of the certification of acknowledgement which must accompany the trust agreement for a trust fund as specified in Secs. 264.147(j) or 265.147(j) of this chapter. State requirements may differ on the proper content of this acknowledgement.

State of---------- County of----------

On this (date), before me personally came (owner or operator) to me known, who, being by me duly sworn, did depose and say that she/he resides at (address), that she/he is (title) of (corporation), the corporation described in and which executed the above instrument; that she/he knows the seal of said corporation; that the seal affixed to such instrument is such corporate seal; that it was so affixed by order of the Board of Directors

of said corporation, and that she/he signed her/his name thereto by like order.

(Signature of Notary Public)

40 CFR Part 265 is amended as follows:

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES: LIABILITY COVERAGE

1. The authority citation for Part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. In Sec. 265.141, new paragraph (h) is added to read as follows:

Sec. 264.141 Definitions of terms as used in this subpart.

* * * * *

(h) "Substantial business relationship" means the extent of a business relationship necessary under applicable State law to make a guarantee contract issued incident to that relationship valid and enforceable. A "substantial business relationship" must arise from a pattern of recent or ongoing business transactions, in addition to the guarantee itself, such that a currently existing business relationship between the guarantor and the owner or operator is demonstrated to the satisfaction of the applicable EPA Regional Administrator.

3. In Sec. 265.147, paragraph (h) is redesignated as paragraph (k); paragraphs (a) introductory text, (a)(2), (a)(3), (b) introductory text, (b)(2), (b)(3), (b)(4) and (g) heading and (g)(1) introductory text are revised, and by removing and reserving paragraph (g)(1)(ii); paragraphs (g)(2)(i) and (g)(2)(ii) are amended by removing "corporate;" and new paragraphs (a)(4), (a)(5), (a)(6), (a)(7), (b)(5), (b)(6), (b)(7), (h), (i), and (j) are added, to read as follows:

Sec. 265.147 Liability requirements.

(a) Coverage for sudden accidental occurrences. An owner or operator of a hazardous waste treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs.

This liability coverage may be demonstrated as specified in paragraphs (a)(1), (2), (3), (4), (5), or (6) of this section:

* * * * *

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in paragraph (g) of this section.

(3) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in

paragraph (h) of this section.

(4) An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in paragraph (i) of this section.

(5) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in paragraph (j) of this section.

(6) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this section. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days (i) whenever a claim for bodily injury or property damages caused by the operation of a hazardous waste treatment, storage, or disposal facility is made against the owner or operator or an instrument providing financial assurance for liability coverage under this section and (ii) whenever the amount of financial assurance for liability coverage under this section provided by a financial instrument authorized by paragraphs (a)(1) through (a)(6) of this section is reduced.

(b) Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. An owner or operator who must meet the requirements of this section may combine the required per- occurrence coverage levels for sudden and nonsudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and nonsudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and nonsudden accidental occurrences must maintain liability coverage in the amount of at least $4 million per occurrence and $8 million annual aggregate. This liability coverage may be demonstrated as specified in paragraph (b) (1), (2), (3), (4), (5), or (6) of this section:

* * * * *

(2) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in paragraphs (f) and (g) of this section.

(3) An owner or operator may meet the requirements of this section by obtaining a letter of credit for liability coverage as specified in paragraph (h) of this section.

(4) An owner or operator may meet the requirements of this section by obtaining a surety bond for liability coverage as specified in paragraph (i) of this section.

(5) An owner or operator may meet the requirements of this section by obtaining a trust fund for liability coverage as specified in paragraph (j) of this section.

(6) An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by this section. If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under this paragraph, the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

(7) An owner or operator shall notify the Regional Administrator in writing within 30 days (i) whenever a claim for bodily injury or property damages caused by the operation of a hazardous waste treatment, storage, or disposal facility is made against the owner or operator or an instrument providing financial assurance for liability coverage under this section and (ii) whenever the amount of financial assurance for liability coverage under this section provided by a financial instrument authorized by paragraphs (a)(1) through (a)(6) of this section is reduced.

* * * * *

(g) Guarantee for liability coverage. (1) Subject to paragraph (g)(2) of this section, an owner or operator may meet the requirements of this section by obtaining a written guarantee, hereinafter referred to as "guarantee." The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in paragraphs (f)(1) through (f)(6) of this section. The wording of the guarantee must be identical to the wording specified in Sec. 264.151(h)(2) of this chapter. A certified copy of the guarantee must accompany the items sent to the Regional Administrator as specified in paragraph (f)(3) of this section. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

* * * * *

(h) Letter of credit for liability coverage. (1) An owner or operator may satisfy the requirements of this section by obtaining an irrevocable standby letter of credit that conforms to the requirements of this paragraph and submitting a copy of the letter of credit to the Regional Administrator.

(2) The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

(3) The wording of the letter of credit must be identical to the wording specified in Sec. 264.151(k) of this chapter.

(i) Surety bond for liability coverage. (1) An owner or operator may satisfy the requirements of this section by obtaining a surety bond that conforms to the requirements of this paragraph and submitting a copy of the bond to the Regional Administrator.

(2) The surety company issuing the bond must be among those listed as acceptable sureties on Federal bonds in the most recent Circular 570 of the U.S. Department of the Treasury.

(3) The wording of the surety bond must be identical to the wording specified in Sec. 264.151(1) of this chapter.

(4) A surety bond may be used to satisfy the requirements of this section only if the Attorneys General or Insurance Commissioners of (i) the State in which the surety is incorporated, and (ii) each State in which a facility covered by the surety bond is located have submitted a written statement to EPA that a surety bond executed as described in this section and Sec.
264.151(1) of this chapter is a legally valid and enforceable obligation in that State.

(j) Trust fund for liability coverage. (1) An owner or operator may satisfy the requirements of this section by establishing a trust fund that conforms to the requirements of this paragraph and submitting an originally signed duplicate of the trust agreement to the Regional Administrator.

(2) The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

(3) The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of this section. If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the Fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in this section to cover the difference. For purposes of this paragraph, "the full amount of the liability coverage to be provided" means the amount of coverage for sudden and/or nonsudden occurrences required to be provided by the owner or

operator by this section, less the amount of financial assurance for liability coverage that is being provided by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

(4) The wording of the trust fund must be identical to the wording specified in Sec. 264.151(m) of this part.

(FR Doc. 88-19410 Filed 8-31-88; 8:45 am)
BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:

Pub. Law 97-258 -- Money and Finance, Title 31 U.S.C., Revision and Enactment (Act of 9/13/82); Currency and Foreign Transactions Reporting Act (Act of 9/13/82)

Pub. Law 89-272 SEC. 2002 3004 3005 3010 9003 3006 3009 1006 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)

Pub. Law 99-499 SEC. 205 -- Superfund Amendments and Reauthorization Act of 1986 (SARA); Emergency Planning and Community Right-to-Know Act of 1986

Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)

Pub. Law 95-598 -- Bankruptcy, Title 11 U.S.C., Revision and Enactment (Act of 11/6/78); Investment Advisors Act of 1940, Amendment (11/6/78); Bankruptcy Reform Act of 1978; Labor-Management Reporting and Disclosure Act of 1959, Amendment (11/6/78); Organic Act of Guam, Amendment (11/6/78)

Pub. Law 98-616 SEC. 601 -- Hazardous and Solid Waste Amendments of 1984

DIALOG(R)File 180:Federal Register

Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Liability Requirements
Volume: 56 Issue: 126 Page: 30200
CITATION NUMBER: 56 FR 30200
Date: MONDAY, JULY 1, 1991

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 264 265
NUMBERS: FRL-3968-1
DATES: Effective: 19910701
CONTACT INFORMATION: RCRA; Superfund Hotline, 800-424-9346,, 202-382-3000, Washington, DC; or; Ed Coe, 202-382-6259
ACTION: Final rule; technical amendment
INTERNAL DATA: (FR Doc. 91-15057 Filed 6-28-91; 8:45 am)
Word Count: 637

SUMMARY: This document corrects certain omission errors in the financial responsibility requirements under subtitle C of the Resource Conservation and Recovery Act (RCRA). These errors were made in a rulemaking related to liability coverage that appeared in the Federal Register on September 1, 1988 (53 FR 33938).

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264 and 265

(FRL-3968-1)

Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Liability Requirements

AGENCY: Environmental Protection Agency.

ACTION: Final rule; technical amendment.

SUMMARY: This document corrects certain omission errors in the financial responsibility requirements under subtitle C of the Resource Conservation and Recovery Act (RCRA). These errors were made in a rulemaking related to liability coverage that appeared in the Federal Register on September 1, 1988 (53 FR 33938).

EFFECTIVE DATE: July 1, 1991.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline at (800) 424 9346 (toll free), or (202) 382-3000 in Washington, DC, or Ed Coe, Office of Solid Waste (OS-341), U.S. Environmental Protection Agency, Washington, DC 20460, (202) 382-6259.

SUPPLEMENTARY INFORMATION: In a final rule published on September 1, 1988 (5 FR 33938), EPA promulgated amendments to the financial responsibility requirements related to liability coverage at 40 CFR subpart H. Following publication of that rule, Chemical Waste Management, Inc. (CWM) filed suit against the Agency challenging several provisions. Among other matters, CWM pointed out certain omissions in the rule language that the Agency recognized to be inadvertant. The parties entered into a settlement agreement on February 23, 1990. To satisfy, in part, the terms of that agreement, this notice corrects omission errors in Secs. 264.147(a)(2) and 265.147(a)(2) (a proposed rule published elsewhere in today's issue satisfies some of the remaining provisions of the settlement agreement). In addition, this notice corrects the omission in the September 1, 1988 rule of "miscellaneous units" as units subject to the requirements of Sec. 264.147(b).

I. Sections 264.147(a)(2) and 265.147(a)(2)

The Agency inadvertently omitted a reference to the financial test as an acceptable means of providing financial assurance for liability coverage when it amended Secs. 264.147(a)(2) and 265.147(a)(2) as part of the September 1, 1988 rulemaking. This notice corrects this error and inserts a reference to the financial test in those sections.

II. Miscellaneous Units--Sections 264.147(b) and 265.147(b)

Section 264.147(b) requires owners and operators of certain hazardous waste management units to demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility. A final rule published on December 10, 1987 (52 FR 46946) extended that requirement to disposal "miscellaneous" units. When the Agency again amended Sec. 264.147(b) in the September 1, 1988 rulemaking, the December 10, 1987 change was inadvertently omitted. Today's correction restores the December 10, 1987 change, and incorporates all amendments to that paragraph to date.

List of Subjects for 40 CFR Parts 264 and 265

Hazardous waste, Insurance.

Dated: June 6, 1991.

Don R. Clay,
Assistant Administrator.

PART 264--STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. In Sec. 264.147, paragraph (a)(2) and the first sentence of the introductory text in paragraph (b) are revised to read as follows:

Sec. 264.147 Liability requirements.

(a) * * *
(2) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in paragraphs (f) and (g) of this section.

* * * * *

(b) Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, land treatment facility, or disposal miscellaneous unit that is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. * * *

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Sec. 265.147 (Amended)

3. In section 265.147 paragraph (a)(2) is revised to read as follows:
(a) * * *
(2) An owner or operator may meet the requirements of this section by passing a financial test or using the guarantee for liability coverage as specified in paragraphs (f) and (g) of this section.

(FR Doc. 91-15057 Filed 6-28-91; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 1006 2002 3004 3005 3014 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-463 SEC. 7 -- Used Oil Recycling Act of 1980
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)

DIALOG Accession Number: 02233287 Supplier Number: 921001299
Hazardous Waste Management System: Identification and Listing of Hazardous Waste and CERCLA Hazardous Substance Designation; Reportable Quantity Adjustment, Chlorinated Toluenes Production Wastes
Volume: 57 Issue: 200 Page: 47376
CITATION NUMBER: 57 FR 47376
Date: THURSDAY, OCTOBER 15, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR 261, 271, 302
NUMBERS: SWH-FRL-4194-3
DATES: Effective: 19930415
CONTACT INFORMATION: RCRA-Superfund Hotline, 800-424-9346,, 703-920-9810,; or; Dr. Ambika Bathija, 202-260-4770,; or; Gerain Perry, 202-260-2190
ACTION: Final rule
INTERNAL DATA: (FR Doc. 92-24232 Filed 10-14-92; 8:45 am)
Word Count: 9222

SUMMARY: The U.S. Environmental Protection Agency (EPA) is amending the regulations for hazardous waste management under the Resource Conservation and Recovery Act (RCRA) by adding three wastes generated during the production of the alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, collectively referred to in this document as "chlorinated toluenes," to the list of hazardous wastes from specific sources. EPA is also amending appendix VII of 40 CFR part 261 to add the constituents for which these wastes are being listed. The effect of this regulation is that these three wastes will be subject to regulation as hazardous wastes. In addition, EPA is amending regulations promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that are related to today's waste listings. In particular, EPA is amending CERCLA regulations by designating the listed wastes as CERCLA hazardous substances and establishing the reportable quantities applicable to these wastes.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 271, and 302
(SWH-FRL-4194-3)

Hazardous Waste Management System: Identification and Listing of Hazardous Waste and CERCLA Hazardous Substance Designation; Reportable Quantity Adjustment, Chlorinated Toluenes Production Wastes

AGENCY: U.S. Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is amending the regulations for hazardous waste management under the Resource Conservation and Recovery Act (RCRA) by adding three wastes generated during the production of the alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, collectively referred to in this document as "chlorinated toluenes," to the list of hazardous wastes from specific sources. EPA is also amending appendix VII of 40 CFR part 261 to add the constituents for which these wastes are being listed. The effect of this regulation is that these three wastes will be subject to regulation as hazardous wastes. In addition, EPA is amending regulations promulgated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that are related to today's waste listings. In particular, EPA is amending CERCLA regulations by designating the listed wastes as CERCLA hazardous substances and establishing the reportable quantities applicable to these wastes.

DATES: Today's final rule will become effective on April 15, 1993. See section VII of the Supplementary Information section concerning compliance dates.

ADDRESSES: The official record for this rulemaking is identified as Docket Number F-92-LCTF-FFFFF and is located in the EPA RCRA Docket, room M2427, 401 M Street, SW., Washington, DC 20460. The docket is open from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. The public may copy 100 pages from the docket at no charge; additional copies are $0.15 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline, toll-free at (800) 424-9346 or locally at (703) 920-9810. For technical information on the RCRA hazardous waste listings, contact Dr. Ambika Bathija, Office of Solid Waste (OS-333), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 260-4770.

For technical information on the CERCLA portion of the rule, contact Ms. Gerain Perry, Response Standards and Criteria Branch, Emergency Response Division (OS-210), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 260-2190.

SUPPLEMENTARY INFORMATION:

I. Authority

These regulations are being promulgated under the authority of sections 2002(a) and 3001(b) and (e)(1) of the Solid Waste Disposal Act, as amended, 42 U.S.C. 6912(a) and 6921(b) and (e)(1) (commonly referred to as RCRA), and section 102(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) 42 U.S.C. 9602(a).

II. Background

EPA proposed to list as hazardous three wastes from chlorinated toluenes production on October 11, 1991. Today's notice promulgates these listings, presented in Section II.C. of the proposed rule, with no substantive modification.

A. Proposed Rule

Pursuant to section 3001 of subtitle C of the Resource Conservation and Recovery Act (RCRA), EPA proposed to list three wastes as hazardous in a notice published in the Federal Register on October 11, 1991 (see 56 FR 51592). At that time, EPA also proposed a no-list decision for three other wastes from chlorinated toluenes production. One other waste from chlorinated toluenes production is already regulated as a hazardous waste under RCRA: EPA Hazardous Waste Number K015-still bottoms from the distillation of benzyl chloride (promulgated on November 12, 1980; see 45 FR 74884). The Agency noted, in the proposal, that the scope of K015 was not affected by the proposed rule.

EPA proposed to add three waste streams generated from the production of the alpha- (or methyl-)chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, collectively referred to in the proposed rule as "chlorinated toluenes," to the list of hazardous wastes from specific sources found at 40 CFR 261.32. These wastes, which were fully described in the preamble to the proposed rule, are distillation bottoms generated from the production of chlorinated toluenes (K149); the organic residuals generated in the recovery of byproduct hydrochloric acid (HCl) associated with the manufacture of chlorinated toluenes (K150); and wastewater treatment sludges, excluding neutralization sludges and biological sludges, generated during the treatment of wastewaters from the manufacture of chlorinated toluenes (K151).

The basis for this proposed regulation was a determination by the Agency that these wastes frequently contain significant concentrations of benzene, benzotrichloride, benzyl chloride, carbon tetrachloride, chlorobenzene, chloroform, chloromethane, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, 1,1,2,2-tetrachloroethane, tetrachloroethylene, toluene, and/or 1,2,4-trichlorobenzene. These compounds, at the concentrations found in chlorinated toluenes wastes, present a threat to human health and the environment when the wastes are mismanaged because of their toxicity, mobility, and persistence. These constituents may be carcinogenic, mutagenic, and/or exhibit other chronic systemic effects at certain concentrations. Based on their physical properties and the evidence from damage incidents, EPA has found that most of these constituents are highly persistent and are mobile in the environment. EPA fully described the data documenting the hazards posed by

these wastes in the preamble to the proposed rule. See 56 FR 51596-51602. Because these wastes are capable of posing a threat to human health and the environment when they are improperly treated, stored, transported, disposed of, or otherwise managed, EPA proposed to list them as hazardous. Consequently, as stated in the proposed rule, these wastes would be subject to the applicable requirements of 40 CFR parts 124, 262-266, 268, 270, and 271.

In addition to the Agency's decision to list three wastes from chlorinated toluenes production, the Agency proposed a decision not to list three other wastes from chlorinated toluenes production: wastewaters, spent carbon, and neutralization and biological treatment sludges. Based on information collected by the Agency, these wastes do not meet the criteria for listing as hazardous wastes. The rationale for these no-list determinations was described in detail in the preamble to the proposed rule and is summarized below.

Wastewaters, which are generated throughout the manufacturing processes, contain low concentrations of the constituents of concern. In addition, the production wastewaters at the four chlorinated toluenes manufacturing facilities are treated prior to off-site discharge, thus further reducing the risks these wastes present to human health and the environment.

Spent carbon wastes, generated during the recovery and purification of byproduct hydrochloric acid, also were proposed not to be listed. Most constituents in these residuals are present at relatively low levels. The organic constituents in the spent carbon waste matrix are expected to adhere strongly to the carbon matrix by adsorption, and thus be significantly less mobile than in other matrices such as distillation bottoms. Therefore, spent carbon is not expected to present a significant risk to human health and the environment if mismanaged and therefore does not warrant listing as a hazardous waste.

The composition of wastewater treatment sludges has been found to vary significantly depending on treatment process. The Agency has made a diligent effort to determine the specific wastes from wastewater treatment operations that contain high levels of toxic constituents and to list only those waste streams. Specifically, neutralization and biological sludges have been found to contain contaminants at low levels, if they are detected at all. The levels in these wastes are significantly less than constituent levels found in those gravity separation sludges proposed for listing.

B. HSWA and EDF v. Reilly

On November 8, 1984, the Hazardous and Solid Waste Amendments of 1984 (HSWA), which amended RCRA, were enacted. These amendments had far-reaching ramifications for EPA's hazardous waste regulatory program. Section 3001(e)(2), which was one of the many provisions added by HSWA, directed EPA to make a determination whether to list under section 3001(b)(1) several wastes, including chlorinated aromatics wastes. As discussed in the preamble to the proposed rule, the chlorinated aromatics industry can be divided into three major segments: Chlorinated benzenes, chlorinated phenols, and chlorinated toluenes. Wastes produced by the first two segments of the industry are currently listed as hazardous. See 56 FR 51594 (October 11, 1991). On June 19, 1991, EPA entered into a proposed consent decree which resolved issues raised in EDF v. Reilly, Civ. No. 89-0598

(D.D.C.). Under this decree, EPA was required, in part, to propose a decision regarding the listing of chlorinated toluenes production wastes by September 1991 and to finalize the decision by September 1992. Today's regulation fulfills this latter requirement of the proposed consent decree and completes the investigations that were underway to study wastes from the chlorinated aromatics industry when HSWA was enacted.

The proposed rule (56 FR 51592) specifically addressed, and today's rule finalizes, the determinations for each of the wastes listed in the proposed consent decree (see Table 1).

In its study of the industry, the Agency sampled wastes and gathered information on specific wastes generated from the production of the various types of chlorinated toluene compounds enumerated in the consent decree.

Based on this information, the Agency concluded that wastes from the production of alpha-chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups are very similar and that it is therefore reasonable to identify wastes from these processes as a group. For example, EPA proposed that organic condensates and decantates from the production of all types of chlorinated toluenes be identified as a group and listed as K150 regardless of product identification. Therefore, today's regulation characterizes the wastes at issue differently than the proposed consent decree, which specifies exactly which production wastes are to be the subject of a listing determination. It should be emphasized, however, that the scope of today's rulemaking encompasses all those wastes discussed in the proposed consent decree. The regulatory decisions concerning the wastes presented in the proposed consent decree, as finalized in today's rule, are presented in Table 1.

Table 1.--Regulatory Status of Waste Streams Identified In the EDF v. Reilly Proposed Consent Decree

Decree waste	Regulatory status
Still bottoms from p-chlorobenzoyl chloride production via catalytic steam hydrolysis	K149
Still bottoms from production of trichlorotoluene via Lewis acid catalysts	K149
Still bottoms from production of dichlorotoluene via Lewis acid catalysts	K149
Spent carbon, filter media, filter cartridges and filtered solids from production of benzotrichloride and benzyl chloride via HCl recovery	No-list
Spent carbon, filter media, filter cartridges and filtered solids from production of benzoyl chloride, p-chlorobenzotrichloride and benzotrichloride via HCl recovery	No-list
Spent H_2SO_4 from production of benzoyl chloride, benzotrichloride, and p-chlorobenzotrichloride via HCl recovery	No-list
Still bottoms from benzoylchloride production via catalytic steam hydrolysis	K149
Still bottoms from production of o-	K149

chlorotoluene, p-chlorotoluene, and dichlorotoluene	
Still bottoms from production of dichlorobenzoyl chloride	K149
Organic liquids (condensates and decantates) from production of benzotrichloride/benzoyl chloride	K150
Organic liquids (condensates and decantates) from production of dichlorobenzoyl chloride, benzotrichloride, and p-chlorobenzyltrichloride	K150
Organic liquids (condensates and decantates) from production of benzoyl chloride, benzotrichloride, and p-chlorobenzotrichloride	K150
Wastewaters from production of one or more chlorinated toluenes	No-list
Wastewater treatment sludges from production of one or more chlorinated toluenes	Separation sludges: K151 Neutralization and biological sludges: No-list

III. Summary of the Regulation

A. Overview of the Final Rule

As proposed on October 11, 1991, this rule adds to the list of hazardous wastes from specific sources found at 40 CFR 261.32 three wastes generated during the production of chlorinated toluenes:

K149 Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride.) K150 Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.

K151 Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.

These wastes are therefore subject to the applicable requirements of 40 CFR parts 124, 262-266, 268, 270, and 271. EPA is also amending appendix VII at 40 CFR part 261 to add the constituents for which these wastes are being listed. In addition, for the reasons explained in the preamble to the proposed rule and summarized above, EPA is finalizing its determination not to list wastewaters, spent carbon, and neutralization and biological treatment sludges from chlorinated toluenes production.

Finally, as proposed, EPA is amending the CERCLA regulations at 40 CFR part 302 by designating hazardous wastes K149, K150, and K151 as hazardous substances and finalizing RQs of 10 pounds for each of these waste streams.

The listings being finalized today will reduce the risks posed by these wastes to human health and the environment. These listings will prevent the uncontrolled entrance of toxic constituents into the ground water, surface water, soil, and air by requiring environmentally sound management of these wastes. In order to further reduce the potential risk posed by these and other wastes, the Agency encourages the implementation of cost effective pollution prevention programs, source controls, and other efforts to reduce the volume of generated wastes. Such programs may be economically advantageous to generators due to the reduced management costs that accompany a reduction in the amount of wastes generated.

The Agency has determined that the industry-wide economic effect of this listing will be annualized incremental costs of approximately $12,000, which represents an insignificant cost to society. A principal reason for this anticipated low additional cost is that the subject wastes are presently being managed as hazardous by industry.

B. Basis for Listing

After considering the relevant factors outlined in 40 CFR Sec. 261.11(a)(3), the Agency has determined that the wastes being listed as hazardous today are capable of presenting a substantial risk to human health and the environment when mismanaged. In particular, the Agency has found that these wastes frequently contain significant concentrations of toxic constituents which are highly mobile and persistent in the environment.

In general, the information presented in the preamble and in support of the proposed rule remains the best and most current available to EPA and serves as the basis for today's listing determinations (56 FR 57592, October 11, 1992). The Agency has, however, updated Tables 3, 4, and 5 of the preamble to the proposed rule (denoted as Tables 2, 3, and 4 of today's preamble) to reflect the most current information available to the Agency regarding the toxicity of the constituents of concern present in the wastes being listed today. Table 2 presents the constituents of concern and their concentrations in the wastes and concentrations that may reach potential human and environmental receptors and compares these levels with oral HBLs of concern.

Tables 3 and 4 provide information on oral and inhalation HBL toxicity sources. The Agency notes that the changes reflected in these tables have had no effect on the Agency's listing determinations.

Table 2.--Basis for Listing: Hazardous Constituents and Levels of Concern (Oral Route)

	Median concentration (mg/kg)	Waste levels (HBL) 1 (mg/L)	Health-based level to HBL ratio	Waste level to 100xHBL (mg/L)	Waste level to 100xHBL ratio
Distillation or fractionation bottoms from the production of chlorinated toluenes (K149):					
Benzotrichloride	70,000	3x10-6	2x10/10/	3x10-4	2x10/8/

Benzyl Chloride >750 2x10-4 4x10/6/ 2x10-2 4x10/4/
Chlorobenzene >300 1x10-1 3x10/3/ 1x10/1/ 3x10/1/
Chloroform 50 6x10-3 8x10/3/ 6x10-1 8x10/1/
Chloromethane 7,000 3x10-3 2x10/6/ 3x10-1 2x10/4/
1,4-Dichlorobenzene >700 7.5x10-2 9x10/3/ 7.5 9x10/1/
Hexachlorobenzene 3,500 1x10-3 4x10/6/ 1x10-1 4x10/4/
Pentachlorobenzene 1,500 3x10-2 5x10/4/ 3 5x10/2/
1,2,4,5-
Tetrachlorobenzene 250 1x10-2 3x10/4/ 1 3x10/2/
Toluene 3,000 1 3x10/3/ 1x10/2/ 3x10/1/
Organic residuals from
the spent chlorine gas
and hydrochloric acid
recovery processes
associated with the
production of
chlorinated toluenes
(K150):
Carbon Tetrachloride 550 5x10-3 1x10/5/ 5x10-1 1x10/3/
Chloroform 45 6x10-3 8x10/3/ 6x10-1 8x10/1/
Chloromethane 13,500 3x10-3 5x10/6/ 3x10-1 5x10/4/
1,4-Dichlorobenzene 3,200 7.5x10-2 4x10/4/ 7.5 4x10/2/
Hexachlorobenzene 2,000 1x10-3 2x10/6/ 1x10-1 2x10/4/
Pentachlorobenzene 2,100 3x10-2 7x10/4/ 3 7x10/2/
1,2,4,5-
Tetrachlorobenzene 7,000 1x10-2 7x10/5/ 1 7x10/3/
1,1,2,2-
Tetrachloroethane >125 2x10-4 6x10/5/ 2x10-2 6x10/3/
Tetrachloroethylene 150 5x10-3 3x10/4/ 5x10-1 3x10/2/
1,2,4-Trichlorobenzene 12,000 7x10-2 * 2x10/5/ 7 2x10/3/
Wastewater treatment
sludges, excluding
neutralization and
biological sludges
(K151):
Benzene >100 5x10-3 2x10/4/ 5x10-1 2x10/2/
Carbon tetrachloride 75 5x10-3 2x10/4/ 5x10-1 2x10/2/
Chloroform 190 6x10-3 3x10/4/ 6x10-1 3x10/2/
Hexachlorobenzene >500 1x10-3 5x10/5/ 1x10-1 5x10/3/
Pentachlorobenzene >200 3x10-2 7x10/3/ 3 7x10/1/
1,2,4,5-
Tetrachlorobenzene >150 1x10-2 2x10/4/ 1 2x10/2/
Tetrachloroethylene >250 5x10-3 5x10/4/ 5x10-1 5x10/2/
Toluene 34,000 1 3x10/4/ 1x10/2/ 3x10/2/

/1/ Health-based levels (HBLs) are based on either MCLs, RSDs, or RfDs as described in the October 11, 1991 proposed rule.

* The HBL for this constituent is the new MCL (see 57 FR 31778 (July 7, 1992)) and differs from the proposed MCL (see 56 FR 51598 (October 11, 1991)) because of a change in the RfD. However, the concentration of this constituent in K150, as well as the levels that may reach potential human or environmental receptors, exceed both the proposed level and the one used in today's rule.

Table 3.--Oral HBL Toxicity Sources

Line No.	Constituent	Class	Slope factor (mg/kg/day)-1	Carcin HBL (mg/L)
1.	Benzene	A	2.9x10-2	1x10-3
2.	Benzotrichloride	B2	1.3x10/1/	3x10-6
3.	Benzyl Chloride	B2	1.7x10-1	2 x10-4
4.	Carbon Tetrachloride	B2/S	1.3x10-1	3x10-4
5.	Chlorobenzene	D/S		
6.	Chloroform	B2/S	6.1x10-3	6x10-3
7.	Chloromethane	C	1.3x10-2**	3x10-3
8.	1,4-Dichlorobenzene	C	2.4x10-2**	1x10-3
9.	Hexachlorobenzene	B2/S	1.6	2x10-5
10.	Pentachlorobenzene	S		
11.	1,2,4,5-Tetrachlorobenzene	S		
12.	1,1,2,2-Tetrachloroethane	C	2x10-1	2x10-4
13.	Tetrachloroethylene	*	5.1x10-2	7x10-4
14.	Toluene	D/S		
15.	1,2,4-Trichlorobenzene	D/S		

(...Table continues...)

Line No.	RfD(mg/kg/day)	Toxicity HBL (mg/L)	MCL (mg/L)	HBL leachate (mg/L)	Interim HBL
1.			5x10-3	5x10-3	
2.				3x10-6	
3.				2x10-4	
4.	7x10-4	2x10-2	5x10-3	5x10-3	
5.	2x10-2	7x10-1	1x10-1	1x10-1	
6.	1x10-2	4x10-1		6x10-3	
7.				3x10-3	X
8.			7.5x10-2	7.5x10-2	
9.	8x10-4	3x10-2	1x10-3	1x10-3	
10.	8x10-4	3x10-2		3x10-2	
11.	3x10-4	1x10-2		1x10-2	
12.				2x10-4	
13.	1x10-2	4x10-1	5x10-3	5x10-3	
14.	2x10-1**	7	1	1	
15.	1x10-2**	4x10-1	7x10-2	7x10-2	

A, B2, C, and D refer to carcinogenic classes, S refers to systemic toxicants.

* EPA is currently deliberating concerning this classification. For more information, see the discussion in Section III.C.4 of this notice.

** Compound is currently under review, and RfD or CSF values are not considered verified.

RfDs and CSFs obtained from: Integrated Risk Information System, 1991; Health Effects Assessment Summary Tables, FY 1991, OERR 9200.6-303 (91-1), January 1991; Health Effects Assessment Summary Tables, OHEA ECAO-CIN-821, March 1992.

Table 4.--Inhalation HBL Toxicity Sources

Constituent	Class	Slope factor (mg/kg/day) -1	Carcin HBL (micro-g/m3)	RfC (mg/kg/day)	Toxicity HBL (micro-g/m3) Status	
Benzene	A	2.9x10 -2	0.1			a
Benzotrichloride	B2	ND				b
Benzyl chloride	B2	ND				
Carbon tetrachloride	B2	5.3x10 -2	0.07			a,b,c
Chlorobenzene	D/S	5x10 -3	20			d,f
Chloroform	B2	8.1x10 -2	0.04			a
Chloromethane	C	6.3x10 -3 **	0.6			b
1,4-Dichlorobenzene	B2/S	ND		0.2	700	d
Hexachlorobenzene	B2	1.6	0.002			a,c
Pentachlorobenzene				ND		
1,2,4,5-Tetrachlorobenzene				ND		
1,1,2,2-Tetrachloroethane	C	2x10 -1	0.02			a
Tetrachloroethylene	*	2x10 -3	2	ND		g
Toluene	D/S			0.11	400	d
1,2,4-Trichlorobenzene	S			2.6x10 -3	9	f

A, B2, C, and D refer to carcinogenic classes, S refers to systemic toxicants.

a Verified; b Under CRAVE review; c Based upon route-to-route extrapolation;

d Under work group review

f Derived from methodology that is not current with the interim inhalation methodology used by the RfD/RfC work group

g Under review

ND--Values not derived in the source document

* EPA is currently deliberating concerning this classification. For more information, see the discussion in Section III.C.4 of this notice.

** Compound is currently under review, and RfD or CSF values are not considered verified.

HBLs calculated from RfD, RfC, or slope factors from the Integrated Risk Information System (IRIS), 1991; Health Effects Assessment Summary Tables (HEAST), OHEA ECAO-CIN-821, March 1992; Health Effects Assessment Summary Tables (HEAST), OERR 9200.6-303 (9-91), January 1991.

C. Agency Response to Public Comments

Four commenters responded to the Agency's October 11, 1991, proposed rule. The Agency has carefully considered all the comments in preparation of this final rule. The comments the Agency received can be summarized as follows:

1. Listing wastes that are currently managed as characteristically hazardous precludes the successful completion of waste reduction/waste minimization and pollution prevention efforts.

2. Because of current management practices, a small percentage of a listed waste will cause a large volume of characteristic waste to be listed as the result of the mixture rule. Segregation of the two streams is economically prohibitive.

3. The Agency has overlooked the inclusion of one facility's waste in calculating the volume of K151 generated.

4. The weight-of-evidence carcinogenicity classification for chloromethane and perchloroethylene should be corrected, and other minor technical and typographical corrections should be made.

5. A typographical error appears in the way K149 is defined in the proposed rule.

6. The Agency's listing action should be accompanied by an "automatic delisting" provision that would remove a generator's waste from regulation as a listed waste when the waste no longer exhibits any RCRA hazardous waste criteria.

In this preamble, the Agency is providing analyses of and responses to all comments.

1. Effect of Listing on Waste Reduction Efforts

One commenter, a chlorinated toluenes manufacturer, stated that it generates all three subject waste streams and presently manages all as characteristically hazardous (K149 as corrosive and K150 and K151 as ignitable). The commenter objected to the proposed listing because such an action reduces the benefit of the facility's waste minimization efforts to decrease the corrosivity and ignitability of the subject wastes to below characteristic levels.

The Agency has decided to list these wastes because they frequently contain a number of toxic constituents (at levels several-fold higher than the HBLs) that are persistent and mobile in the environment. These wastes, therefore, could impact adversely human health and the environment if improperly managed. The elimination of the hazardous waste characteristics from these wastes (i.e., ignitability and corrosivity) would not necessarily address the potentially toxic levels of the constituents that have been identified in these wastes. For example, using neutralization to eliminate the corrosivity of the waste would not necessarily reduce its toxicity.

The Agency encourages the commenter to decrease the volume of its hazardous wastes. However, as stated above, the commenter's efforts to eliminate the ignitable and corrosive nature of the wastes would not necessarily remove the toxic constituents in the wastes, which could potentially harm human health and the environment due to their high concentrations. The Agency therefore maintains that it is important to list as hazardous these wastes which contain toxic contaminants not already controlled by the RCRA ignitable and corrosive characteristics.

2. Secluded Management and Cost of Listing

One commenter, a chlorinated toluenes manufacturer, presently mixes one of the chlorinated toluenes production wastes with other nonlisted, nonchlorinated toluene process wastes during wastewater treatment. The entire waste stream is currently hazardous due to the characteristic of ignitability, although the commenter is conducting efforts to render the stream non-hazardous. The commenter states that, because of the mixture rule under 40 CFR 261.3, its entire separator bottoms stream (a wastewater treatment sludge) would become listed as K151. The commenter states that segregation of the chlorinated toluenes production waste from the other streams may be feasible, but the capital cost to perform this is estimated to exceed $250,000.

The Agency notes that, as part of its sampling and analysis efforts to support the listing of chlorinated toluene wastes, the commenter's subject mixed production wastes, as currently managed in an unsegregated fashion, were found to contain high levels of the contaminants of concern that are persistent and mobile in the environment. This waste was found to contain high levels of toxic organic constituents even after being mixed with other non-chlorinated toluenes production wastes./1/

NOTE /1/ However, should any of the commenters' mixed waste streams contain low levels of toxic constituents, the commenter may petition the Agency for a delisting pursuant to the requirements of 40 CFR 260.20 and 40 CFR 260.22.

The Agency believes that mixing the chlorinated toluenes production wastes with other wastes to form a large volume of contaminated waste is contrary to waste minimization goals. Although the rule does not require facilities to segregate wastes, EPA encourages facilities to reduce the volume of hazardous wastes. Segregation of hazardous wastes from non-hazardous sources could be one method of achieving this goal. In evaluating the burden created by a new rule, however, the Agency only considers capital costs incurred through investments to segregate or otherwise manage wastes if this investment is the least burdensome method of compliance with the regulation. Based on the available information, the Agency believes no capital outlays are required due to today's rule because all newly-listed wastes, including the commenters (whose waste currently exhibit the characteristic of ignitability), are already managed on-site as hazardous waste. Therefore, the Agency continues to estimate increased waste management costs of less than $12,000 per year for all facilities due to today's new listings./2/

NOTE /2/ The Agency notes, however, that should the commenter be successful in addressing the ignitable characteristic of the waste stream (assuming the subject commenter's estimate of an incurred capital cost of $250,000 for segregation of the subject waste stream is correct), the facility would incur an additional estimated cost of $40,000 per year for the first 10 years following promulgation of the rule. (This is based on annualizing the capital investment cost of $250,000 over 10 years at a 9.5 percent interest rate.) The facility may embark on this capital investment if, after comparing it to the operating costs associated with managing the mixed waste stream as hazardous, it believes it to be a sound investment.

As stated above, today's subject wastes are listed because of the presence of mobile and persistent toxic constituents in these wastes and therefore removal of the ignitability characteristic would not necessarily render these waste streams non-toxic.

3. Generation Volume of K151

One commenter, a chlorinated toluenes manufacturer, states that the Agency underestimated the quantity of K151 generated nationwide (i.e., 600 metric tons/year). See 56 FR 51596 (October 11, 1991). The commenter stated that his facility generated 25,692 tons of primary sludge in 1990. The commenter requested that the volume of this waste stream be included in the tabulation of Table 2 of the proposed rule and be considered when determining available treatment capacity in future land disposal restrictions determinations.

The Agency wishes to clarify the scope of the K151 wastes. The K151 wastes include, but are not limited to, skimmings and sludges from oil/water separators, sludges from settling basins upstream of wastewater treatment, and other residuals from physical separation processes in the absence of other neutralization or biological treatment. These wastes have been found to contain high levels of hazardous constituents and to otherwise meet the criteria for listing wastes as hazardous. Conversely, wastes generated from chemical neutralization or biological treatment do not meet the criteria for hazardous wastes and thus are not included in the scope of K151.

Based on information previously provided to the Agency by the commenter in support of the proposed rule, the Agency does not believe that the sludge in question is K151 because it is generated after neutralization. The Agency's detailed justification is in the docket for this rule. Therefore, the Agency maintains that its original estimate of 600 metric tons as the annual generation rate of K151 is valid.

4. Weight-of-Evidence Classification of Perchloroethylene and Chloromethane and Other Minor Technical Revisions

Two comments concerned the weight-of-evidence classification of tetrachloroethylene (perchloroethylene or PCE) as a B2, probable human carcinogen (with a footnote stating that the Agency is re-evaluating this classification). One commenter stated that on January 8, 1991 (56 FR 643), EPA "corrected" the classification of PCE from B2, probable human carcinogen, to C, possible human carcinogen, and amended the preamble to two recent final rules, (August 14, 1989 (54 FR 33418)) and (December 11, 1989 (54 FR 50968)), to reflect the change. The commenter suggested that the Agency use the C classification in today's rulemaking. The second commenter suggested that EPA delete any reference to perchloroethylene as a Group B2 carcinogen.

The Agency acknowledges the notice in the Federal Register dated January 8, 1991 (56 FR 643), which amends the preamble to regulations published on August 14, 1989 (54 FR 33418), to establish reportable quantities under CERCLA for certain substances, and on December 11, 1989 (54 FR 50968), to list certain wastes from the production of chlorinated aliphatic hydrocarbons as hazardous wastes under RCRA. The January 8, 1991 notice (56 FR 643) documented the various weight-of-evidence assessments performed on

tetrachloroethylene to date, by both the Agency and the Science Advisory Board (SAB). That summary will not be repeated here; interested readers may refer to the January 8, 1991 Federal Register Notice (56 FR 643). That discussion concluded by stating:

EPA is currently deliberating concerning the weight-of-evidence classification for perchloroethylene and the issues raised and advice offered by the SAB concerning perchloroethylene. When these deliberations are completed, EPA will provide a formal reply to the SAB, under the signature of the Administrator or an appropriate designee, which informs the SAB of the Agency's response to the SAB's issues and advice and states the Agency's final position on the weight-of-evidence classification of perchloroethylene.

(56 FR 644 (January 8, 1991)). Based on the discussion presented in the notice (56 FR 643), EPA deleted perchloroethylene from substances referred to at 54 FR 50974 (December 11, 1989), without qualification, as Group B2 carcinogens. However, the notice (56 FR 643) did not reclassify perchloroethylene as a Group C carcinogen.

At the time of the publication of the proposed rule listing K150 and K151, the weight-of-evidence classification for perchloroethylene had not been resolved. However, in the August 1991 final report to the EPA Administrator (Health Effects Assessment of Perchloroethylene, EPA-SAB-EHC-91-013), the SAB's Environmental Health Committee recommended, after an extensive review, that perchloroethylene be placed on a "continuum between B2 and C." SAB's rationale was that although the evidence was not strong enough to warrant designation of PCE as a B2, probable human carcinogen, the evidence for carcinogenicity is stronger than most other compounds classified as C, possible human carcinogen. The Agency has not yet completed its formal response to the SAB recommendation and a designation will not be assigned until EPA has completed its final weight-of-evidence evaluation. As indicated in the January 8, 1991 notice (56 FR 644), EPA's final decision regarding the weight-of-evidence classification will be "separate and distinct from any regulatory evaluations and risk management decisions concerning perchloroethylene."

In order to clarify the fact that there is still no final Agency-wide weight-of-evidence cancer classification for perchloroethylene, the Agency has deleted the reference to this classification in Tables 3 and 4 (Tables 4 and 5 of the proposed rule). The final position on that classification is not relevant to this listing because the health-based level for perchloroethylene used in support of the listing is based on a final MCL (see 56 FR 51596- 51601, October 11, 1991) which was calculated in the absence of a formal Agency weight-of-evidence cancer classification for perchloroethylene (for more information regarding this MCL, see 56 FR 3526 and 3541 (January 30, 1991)).

One commenter also identified some technical errors in the toxicological endpoints for the carcinogenicity of perchloroethylene. These errors have been addressed in the Health Effects Background document prepared for this final rule.

One commenter questioned EPA's use of the 24-month mouse study that resulted in kidney tumors as the basis for the inhalation carcinogenic potency factor for chloromethane (methyl chloride). The commenter stated that the tumors were observed only in male mice and only at the highest

dose level of 1,000 ppm. According to the commenter, EPA's Office of Toxic Substances (OTS) requested industry to repeat the above study in both mice and rats with a increased number of dose levels "on the basis that EPA could not calculate or determine a cancer risk based on a single data point." The commenter noted that this additional study was never performed. Based on this, the commenter stated that the data should not now be used to support the estimation of a slope factor for chloromethane and that the information on carcinogenicity presented in EPA's Integrated Risk Information System (IRIS) are invalid.

As stated by the commenter, the Agency used an interim oral slope factor of 1.3 x 10-2 mg/kg/day based on a route-to-route extrapolation from the CIIT mouse inhalation study in the proposed rule. The Agency is continuing to use this number in the final rule, because although additional information could lead to greater confidence in the slope factor, the Agency has determined that the current level of data is sufficient to estimate carcinogenic potency (for more information, see the Health Effects background document in the docket for today's rule)./3/ Contrary to the commenter's statement, Agency guidelines do allow slope factors to be calculated from effects observed only at the highest dose level (see Guidelines for Carcinogenic Risk Assessment (U.S. EPA, 1986a) which the available in the docket).

NOTE /3/ Although the source for this value in the proposed rule was IRIS, this number was recently removed from IRIS. Consistent with Agency policy, the new source for the number is the Health Effects Assessment Summary Tables (HEAST).

Furthermore, the Agency believes that even though this slope factor is currently under review by the Agency, the levels of chloromethane in K149 and K150 are so high that the compound poses a potential risk to human health and the environment if the wastes are mismanaged. This is because the concentrations of chloromethane in K149 and K150 (i.e., 7,000 and 13,500 mg/ kg, respectively) are in excess of one million times the health-based level for chloromethane. Even if the health-based level were raised significantly based on further review by the Agency, the concentrations of chloromethane in the wastes would most likely still be present at levels that are several orders of magnitude above those considered to be of concern. In addition, the bases for listing K149 and K150 wastes include 13 constituents other than chloromethane. The presence of these other hazardous constituents, without the inclusion of chloromethane, at levels that could potentially harm human health and the environment, provides adequate justification for finalizing today's listings.

The commenter also questioned the "Group C" weight-of-evidence classification for chloromethane. Although the cancer classification for chloromethane had no effect or bearing on this listing decision, the Agency notes that EPA currently verified the "C" classification on IRIS. This classification was based on the CIIT study and other additional information, and interested readers may consult the background document for further information regarding this classification.

The health effects information and/or HBLs of the constituents of concern that have been changed since the proposal, or were in error in the proposal, have been revised to reflect the EPA's current data base. This

information was added to the health effects assessment background document prepared for this final rule and is summarized in Tables 2, 3, and 4.

5. Typographical Error

A commenter notes that a typographical error appears in the proposed rule. The Agency agrees with the commenter that the proposed definition of K149 in 40 CFR 302.4 should read:
"* * * (this waste does not include still bottoms from the distillation of benzyl chloride)." (See 56 FR 51608, October 11, 1991.)

6. "Automatic Delisting" Provision

One commenter suggested that, if the rule is promulgated as proposed, an "automatic delisting" provision should be established for wastes that do not meet any of the hazardous waste characteristics.

The Agency has listed today's wastes because of the presence of toxic constituents for which the Agency has not set hazardous characteristics levels. Of the 15 constituents which comprise the basis for listing these wastes, 8 are not Toxicity Characteristic (TC) constituents. Therefore, even if these wastes could be treated to a point where the wastes no longer exhibit any of RCRA's hazardous waste characteristics, the constituents not regulated by the TC may still be present at hazardous levels in these wastes.
Furthermore, the Agency is also concerned that since the thick and hydrophobic nature of these wastes parallels the characteristics of oily and greasy wastes, the concentrations of constituents may be underestimated by the Toxicity Characteristic Leaching Procedure (for more information regarding such concerns, see the proposed Hazardous Waste Identification Rule, 57 FR 21473 (May 20, 1992)). An exemption program based solely on the present RCRA characteristics program, therefore, would be inappropriate.

IV. Impact of Future Land Disposal Restrictions (LDR) Determinations
The statute requires EPA to promulgate land disposal prohibitions--that is, prohibit from land disposal hazardous wastes that do not meet the pretreatment standards promulgated under section 3004(m) and that are not disposed in so-called no-migration units--under a specific schedule for wastes identified and listed prior to the enactment of the 1984 amendments (RCRA sections 3004(d), 3004(e), and 3004(g)(5), 42 U.S.C. 6924(d), (e) and (g)(5)). If the Agency failed to promulgate land disposal restrictions by the dates specified in section 3004(g)(4), the wastes were absolutely prohibited from land disposal after May 8, 1990, (or in some cases November 8, 1986 or July 8, 1987). The Agency also is required to make a land disposal prohibition determination for any hazardous waste that is identified or listed in 40 CFR part 261 after November 8, 1984, within 6 months after the listing or identification becomes effective (RCRA section 3004(g)(4), 42 U.S.C. 6924(g)(4)). However, the statute does not provide for automatic restriction or prohibition of the land disposal of such wastes if EPA fails to meet this deadline.

Although some of the wastes covered by today's notice are being listed, in part, because of the presence of the same hazardous constituents found in K015, they are newly-listed wastes, and therefore, the treatment standards for K015 do not apply to today's newly-listed wastes. Because the Agency

has not yet completed treatability and capacity analyses for these newly-listed wastes, land disposal restrictions for the wastes listed today are expected to be addressed by April 1993. It should be noted that because the statute does not provide for automatic restriction or prohibition of land disposal for newly-identified wastes until such restrictions are promulgated, land disposal of these wastes will not be restricted or prohibited until the Agency promulgates land disposal restrictions (unless the wastes exhibit one of the hazardous waste characteristics or meet other land disposal prohibitions, such as that on disposing of liquids in landfills). Wastes that exhibit the characteristic of toxicity using the toxicity characteristic leaching procedure (SW-846 Method 1311) are considered newly-identified and are not covered by the LDR, unless the waste also exhibits the characteristic of toxicity using the extraction procedure (SW-846 Method 1310) (see the Third Land Disposal Restrictions Rule, June 1, 1990, 55 FR 22520).

Most of today's newly listed wastes are expected to exhibit the characteristics of ignitability, corrosivity, or reactivity and thus are already subject to the land disposal restrictions standards for those characteristics, which include reporting, recordkeeping, and tracking requirements, dilution and storage prohibitions, and treatment standards (see 55 FR 22520, June 1, 1990). These wastes also may be subject to certain California List treatment standards if not already covered by a more specific prohibition (see 55 FR 22674, June 1, 1990).

V. State Authority

A. Applicability of Final Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. (See 40 CFR part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under sections 3007, 3008, 3013, and 7003 of RCRA, although, authorized States have primary enforcement responsibility.

Before HSWA amended RCRA, a State with final authorization administered its hazardous waste program entirely in lieu of the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities located in the State with permitting authorization. When new, more stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent authority within specified timeframes. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

By contrast, under section 3006(g) of RCRA, 42 U.S.C. Sec. 6926(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to implement those requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as part of State regulations to retain final authorization, the HSWA requirements apply in authorized States in the interim.

Today's rule is being promulgated pursuant to section 3001(e)(2) of RCRA, a provision added by the HSWA. Therefore, the Agency is amending Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to the HSWA and that take effect in all States, regardless of their authorization status. States may apply for either interim or final authorization for the HSWA provisions identified in Table 1 (40 CFR 271.1(j)), as discussed in the following section of this preamble.

B. Effect on State Authorizations

As noted above, EPA will implement today's rule in authorized States until they modify their programs to adopt this rule and the modifications are approved by EPA. Because today's rule is promulgated pursuant to the HSWA, a State submitting a program modification would be able to apply to receive either interim or final authorization under section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's requirements. The procedures and schedule for State program modifications under section 3006(b) are described in 40 CFR 271.21.
The same procedures should be followed for section 3006(g)(2).

Section 271.21(e)(2) requires that States that have final authorization modify their programs to reflect Federal program changes and that they subsequently submit the modification to EPA for approval. The deadline by which states must modify their programs to adopt this regulation will be determined based on today's date in accordance with 40 CFR 271.21(e)(2).

States with authorized RCRA programs already may have regulations similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being promulgated today to determine whether they meet the tests for authorization. Thus, States are not authorized to implement their States' regulations in lieu of EPA regulations until the State program modification is approved. Of course, States with existing regulations may continue to administer and enforce their regulations as a matter of State law. In implementing the Federal program, EPA will work with States under cooperative agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs, and thereby avoid taking separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the promulgation of EPA's regulations are not required to include standards equivalent to those promulgated in their applications (see 40 CFR 271.3(f)). However, the State must modify its program by the deadlines set forth in Sec. 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these standards must include equivalent standards in their application. Section 271.3 sets forth the requirements that a State must meet when submitting its final authorization application.

VI. CERCLA Designation and Reportable Quantities

All hazardous wastes listed in 40 CFR 261.31 through 261.33, as well as any solid waste that meets one or more of the characteristics of a RCRA hazardous waste (as defined at 40 CFR 261.21 through 261.24), are hazardous

substances under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), pursuant to CERCLA section 101(14).

Therefore, the three chlorinated toluenes waste streams listed as hazardous under RCRA by this final rule (K149, K150, and K151) are CERCLA hazardous substances. CERCLA hazardous substances are listed in Table 302.4 at 40 CFR 302.4 along with their reportable quantities (RQs); thus, EPA is today adding entries for K149, K150, K151 to Table 302.4.

A. Reporting Requirements

Under CERCLA section 103(a), the person in charge of a vessel or facility from which a hazardous substance is released in a quantity that equals or exceeds its RQ must immediately upon knowledge notify the National Response Center of the release (see 40 CFR part 302). In addition to this reporting requirement under CERCLA, section 304 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) requires owners or operators of certain facilities to report the release of a CERCLA hazardous substance to State and local authorities. EPCRA section 304 notification must be given immediately after the release of an RQ or more to the community emergency coordinator of the local emergency planning committee for each area likely to be affected by the release, and to the State emergency planning commission of any State likely to be affected by the release.

B. Adjustment of RQs

Under section 102(b) of CERCLA, all hazardous wastes newly designated under CERCLA will have a statutory RQ of one pound unless and until adjusted by regulation. The Agency's methodology for adjusting RQs of individual hazardous substances begins with an evaluation of the intrinsic physical, chemical, and toxicological properties of each hazardous substance./4/ The intrinsic properties examined--called "primary criteria"--are aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, chronic toxicity, and potential carcinogenicity. Generally, for each intrinsic property, the Agency ranks hazardous substances on a scale, associating a specific range of values on each scale with an RQ of 1, 10, 100, 1000, or 5000 pounds. The data for each hazardous substance are evaluated using various primary criteria; each hazardous substance may receive several tentative RQ values based on its particular intrinsic properties. The lowest of the tentative RQs becomes the "primary criteria RQ" for that substance.

NOTE /4/ For more detailed information on this methodology, see the preamble to an RQ adjustment final rule published on August 14, 1989 (54 FR 33426). A different methodology is used to assign adjusted RQs to radionuclides (see 54 FR 22524, May 24, 1989).

After the primary criteria RQs are assigned, substances are further evaluated for their susceptibility to certain degradative processes, which are used as secondary adjustment criteria. These natural degradative processes are biodegradation, hydrolysis, and photolysis (BHP). If a hazardous substance, when released into the environment, degrades relatively rapidly to a less hazardous form by one or more of the BHP

processes, its RQ (as determined by the primary RQ adjustment criteria), is generally raised one level./5/ This adjustment is made because the relative potential for harm to public health or welfare or the environment posed by the release of such a substance is reduced by these degradative processes. Conversely, if a hazardous substance degrades to a more hazardous product after its release, the original substance is assigned an RQ equal to the RQ for the more hazardous substance, which may be one or more levels lower than the RQ for the original substance. The downward adjustment is appropriate because the hazard posed by the release of the original substance is increased as a result of BHP.

NOTE /5/ No RQ level increase based on BHP occurs if the primary criteria RQ is already at its highest possible level (100 pounds for potential carcinogens and 5000 pounds for all other types of hazardous substance-except radionuclides). BHP is not applied to radionuclides.

The methodology summarized above is applied to adjust the RQs of individual hazardous substances. An additional process applies to RCRA waste streams, which contain individual hazardous substances as constituents. As the Agency has stated (54 FR 33440, August 14, 1989), to assign an RQ to a waste stream, the Agency determines the RQ for each waste stream constituent and then assigns the lowest of these constituent RQs to the waste stream itself.

The lowest constituent RQ for each of the waste streams that are the subject of today's final rule (K149, K150, and K151) is 10 pounds. In order to coordinate RCRA and CERCLA rulemakings, the Agency proposed to adjust the one-pound statutory RQs for each of these waste streams to 10 pounds in its October 11, 1991, proposed rule (56 FR 51592). EPA received no comments on these proposed RQ adjustments. The Agency is therefore promulgating these RQ adjustments by including final adjusted RQs of 10 pounds for waste streams K149, K150, and K151 in Table 302.4.

VII. Compliance Dates

A. Notification

Under the Solid Waste Disposal Amendments of 1980 (Pub L. 96-452), EPA was given the option of waiving the notification requirement under section 3010 of RCRA following revision of the section 3001 regulations, at the discretion of the Administrator.

As proposed, EPA is waiving the notification requirement as unnecessary for persons already identified within the hazardous waste management universe.

EPA is not waiving the notification requirement for waste handlers who have neither notified the Agency that they may manage hazardous wastes nor received an EPA identification number.

B. Interim Status

Because HSWA requirements are applicable in authorized States at the same time as in unauthorized States, EPA will regulate K 149, K150, and K151

until States are authorized to regulate these wastes. Thus, once this regulation becomes effective, EPA will apply Federal regulations to these wastes and to their management in both authorized and unauthorized States. Facilities that treat, store, or dispose of K149, K150, and K151, but that have not received a permit pursuant to section 3005 of RCRA and are not operating pursuant to interim status, might be eligible for interim status (see section 3005(e)(1)(A)(ii) of RCRA, as amended). To operate under interim status, the eligible facilities will be required to submit a section 3010 notification (when the requirement is waived, as explained above), pursuant to 40 CFR 270.70(g) and will be required to submit a Part A permit application within 6 months of promulgation of today's listing pursuant to Sec. 270.10(e).

Under RCRA section 3005(e)(3) and 40 CFR 270.73(d), within 18 months of promulgation of today's listing, land disposal facilities qualifying for interim status under section 3005(e)(1)(A)(ii) also will be required to submit a Part B permit application and certify that the facility is in compliance with all applicable ground-water monitoring and financial responsibility requirements. If the facility fails to do so, interim status will terminate on that date.

All existing hazardous waste management facilities (as defined in 40 CFR 270.2) that treat, store, or dispose of K149, K150, and K151 and that are currently operating pursuant to interim status under section 3005(e) of RCRA, will be required to file with EPA an amended Part A permit application within 6 months of promulgation of today's listing.

C. Permitting Requirements

Physical construction of any new facility that will treat, store, or dispose of these wastes may not commence until Parts A and B of the permit application have been submitted and a RCRA permit has been approved. (See 40 CFR 270.10(f).)

Under current regulations, a hazardous waste management facility that has received a permit pursuant to section 3005 may not treat, store, or dispose of K149, K150, and K151 unless the permit modification procedures set forth in 40 CFR 270.42(g) are satisfied.

Under 40 CFR 270.42(g)(1)(v), for newly regulated land disposal units, permitted facilities must certify that the facility is in compliance with all applicable 40 CFR 265 ground-water monitoring and financial responsibility requirements no later than April 15, 1994. If the facility fails to submit these certification, authority to manage the newly listed wastes under 40 CFR 270.42(g) will terminate on that date.

VIII. Economic Analysis

Under Executive Order 12291, EPA must determine whether a regulation is "major" and, therefore, subject to the requirements of a Regulatory Impact Analysis (RIA). As mentioned in the preamble to the October 11, 1991 proposed rule, the total additional cost for disposal of these wastes as hazardous is approximately $12,000 per year, which is significantly less than the $100 million constituting a major regulation.

Since EPA does not expect that the amendments promulgated by today's rule will have an annual effect on the economy of $100 million or more or result in a measurable increase in cost or prices, or have an adverse impact on the ability of U.S.-based enterprises to compete with either domestic or foreign markets, these amendments are not believed to constitute a major action.
Therefore, an RIA is not required.

IX. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act, 5 U.S.C. 601-612, whenever an agency is required to publish a general notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the impact of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). However, if the head of the agency certifies that the rule will not have a significant impact on a substantial number of small entities, no regulatory flexibility analysis is required.

The hazardous wastes proposed to be listed here are not generated by small entities (as defined by the Regulatory Flexibility Act). Accordingly, I hereby certify that this amendment would not have a significant economic impact on a substantial number of small entities. Therefore, this regulation does not require a regulatory flexibility analysis.

X. Paperwork Reduction Act

This rule does not contain any information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq.

List of Subjects

40 CFR Part 261

Hazardous materials, Waste treatment and disposal, Recycling.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indian lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 302

Air pollution control, Chemicals, Emergency Planning and Community Right-To-Know Act, Extremely hazardous substances, Hazardous chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Natural resources, Pesticides and pests, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: September 30, 1992.

William K. Reilly,
Administrator.

For the reasons set out in the preamble, Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for Part 261 continues to read as follows: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. In Sec. 261.32, add the following waste streams in alpha-numeric order to the subgroup "Organic Chemicals" in the table:

Sec. 261.32 Hazardous wastes from specific sources.

* * * * *

Industry and EPA hazardous waste No.	Hazard	Hazardous waste code
* * * * * * *		
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.)	(T)
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups	(T)
* * * * * * *		

3. Add the following entries in alpha-numeric order to Appendix VII of Part 261:

Appendix VII.--Basis for Listing Hazardous Waste

EPA hazardous waste No.	Hazardous constituents for which listed
* * * * * * *	
K149	Benzotrichloride, benzyl chloride, chloroform, chloromethane, chlorobenzene, 1,4-dichlorobenzene, hexachlorobenzene,

pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, toluene.
K150 Carbon tetrachloride, chloroform, chloromethane, 1,4-dichlorobenzene, hexachlorobenzene, pentachlorobenzene, 1,2,4,5-tetrachlorobenzene, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,2,4-trichlorobenzene.
K151 Benzene, carbon tetrachloride, chloroform, hexachlorobenzene, pentachlorobenzene, toluene, 1,2,4,5-tetrachlorobenzene, tetrachloroethylene.

* * * * * * *

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

4. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

5. Sec. 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication:

Sec. 271.1 Purpose and scope.

* * * * *

Table 1.--Regulations Implementing the Hazardous and Solid Waste Amendments of 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
		* * * * * * *	
October 15, 1992	Listing Wastes from the Production of Chlorinated Toluenes	(insert Federal Register page numbers)	April 15, 1993.
		* * * * * * *	

PART 302--DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

6. The authority citation for part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

7. Section 302.4 is amended by adding the following entries to Table 302.4:

Sec. 302.4 Designation of hazardous substances.

* * * * *

Table 302.4.--List of Hazardous Substances and Reportable Quantities

(Note: All comments/notes are located at the end of this table)

Hazardous substance	CASRN	synonyms	RQ	Statutory Code+	RCRA Regulatory waste No.	Final RQ Pounds (kg) Category
				* * * * * * *		

K149 1* 4 K149 A 10 (4.54)
Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride.)
K150 1* 4 K150 A 10 (4.54)
Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.
K151 1* 4 K151 A 10 (4.54)
Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of

wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.

+ indicates the statutory source as defined by 1, 2, 3, 4, or 5 below.

* * * * * * *

4 indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA section 3001.

1* indicates that the 1-pound RQ is a CERCLA statutory RQ

* * * * * * *

(FR Doc. 92-24232 Filed 10-14-92; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:

Pub. Law 89-272 SEC. 2002 3001 3004 3006 3010 3005 1006 3002 3017 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)

Pub. Law 96-482 SEC. 15 -- Solid Waste Disposal Act Amendments of 1980

Pub. Law 99-499 SEC. 304 -- Superfund Amendments and Reauthorization Act of 1986 (SARA); Emergency Planning and Community Right-to-Know Act of 1986

Pub. Law 92-500 SEC. 2 -- Federal Water Pollution Control Act Amendments of 1972

Pub. Law 96-510 SEC. 102 101 103 104 -- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); Hazardous Substance Response Revenue Act of 1980

Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)

Pub. Law 98-616 SEC. 245 -- Hazardous and Solid Waste Amendments of 1984

Pub. Law 80-845 SEC. 501 311 -- Federal Water Pollution Control Act (Act of 6/30/48)

DIALOG(R)File 180:Federal Register

Hazardous Waste Management System: Land Disposal Restrictions
Volume: 57 Issue: 203 Page: 47772
CITATION NUMBER: 57 FR 47772
Date: TUESDAY, OCTOBER 20, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 268
NUMBERS: FRL-4524-5
DATES: Effective: 19921013
Cut-off: 19930508
Comment by: 19921119
CONTACT INFORMATION: RCRA Hotline, 800-424-9346,, 703-920-9810,; or; Nicholas R. Vizzone, 703-308-8477
ACTION: Approval of Interim
INTERNAL DATA: (FR Doc. 92-25398 Filed 10-19-92; 8:45 am)
Word Count: 4300

SUMMARY: In the final rule establishing land disposal restrictions (LDR) for Third Third hazardous wastes, EPA granted a national capacity variance for those hazardous soils whose best demonstrated available technology (BDAT) was incineration, retorting, or vitrification, as well as for soils contaminated with radioactive mixed waste, due to a lack of treatment capacity. Approximately 73 percent of the wastes restricted from land disposal by the Third Third rule received the national capacity variance when they were contained in soils. The national capacity variance expired on May 8, 1992.

While the variance was in effect, EPA receive information from generators of hazardous soils and trade association indicating that there would not be sufficient treatment capacity fo hazardous soils when the variance expired on May 8, 1992. In response t this information, EPA gathered data to determine whether treatment capacit is available for hazardous soils to which the national capacity varianc applied, and, if not, to determine the reasons that it is not available Information obtained from various companies and trade association indicated that a shortage of treatment capacity for hazardous soil continues to exist, for reasons beyond their control.

Under 40 CFR 268. , EPA is approving an interim final case-by-case extension of the L R effective date, to May 8, 1993, applicable to all persons handling Thi d Third hazardous soils whose BDAT is either incineration, retorting, r vitrification, or handling Third Third soils contaminated with radioacti e mixed waste. No further applications will be required at this time fr m persons granted the extension by this action. However, EPA is requiri g such persons to do certain recordkeeping, and to meet certain oth r requirements to qualify for the extension.

TEXT:

40 CFR Part 268

(FRL-4524-5)

Hazardous Waste Management System: Land Disposal Restrictions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Approval of Interim Final Hazardous Soil Case-By-Case Capacity Variance.

SUMMARY: In the final rule establishing land disposal restrictions (LDR) for Third Third hazardous wastes, EPA granted a national capacity variance for those hazardous soils whose best demonstrated available technology (BDAT) was incineration, retorting, or vitrification, as well as for soils contaminated with radioactive mixed waste, due to a lack of treatment capacity.

Approximately 73 percent of the wastes restricted from land disposal by the Third Third rule received the national capacity variance when they were contained in soils. The national capacity variance expired on May 8, 1992.

While the variance was in effect, EPA received information from generators of hazardous soils and trade associations indicating that there would not be sufficient treatment capacity for hazardous soils when the variance expired on May 8, 1992. In response to this information, EPA gathered data to determine whether treatment capacity is available for hazardous soils to which the national capacity variance applied, and, if not, to determine the reasons that it is not available. Information obtained from various companies and trade associations indicated that a shortage of treatment capacity for hazardous soils continues to exist, for reasons beyond their control.

Under 40 CFR 268.5, EPA is approving an interim final case-by-case extension of the LDR effective date, to May 8, 1993, applicable to all persons handling Third Third hazardous soils whose BDAT is either incineration, retorting, or vitrification, or handling Third Third soils contaminated with radioactive mixed waste. No further applications will be required at this time from persons granted the extension by this action.

However, EPA is requiring such persons to do certain recordkeeping, and to meet certain other requirements to qualify for the extension.

DATES: This action becomes effective on October 13, 1992 and expires on May 8, 1993. Comments on this action must be submitted on or before November 19, 1992.

ADDRESSES: Any person wishing to comment on this interim final variance must send an original and two copies of their comments to the EPA RCRA Docket (OS- 305), room 2427, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. Place the docket number F-92-CD2P-FFFFF on all copies of the comments. The docket is open from 9 a.m. to 4 p.m., Monday through Friday, except on Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. The

public may copy a maximum of 100 pages from any document in the docket at no cost. Additional copies cost $0.20 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCR Hotline at (800) 424-9346 toll-free or (703) 920-9810 locally. For information on specific aspects of this notice, contact Nicholas R. Vizzone, Analysis and Land Disposal Restrictions Section, Capacity Programs Branch (OS-321W), Office of Solid Waste, U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460, (703) 308-8477.

SUPPLEMENTARY INFORMATION: .

Outline

I. Background

A. History

Congress enacted the Hazardous and Solid Waste Amendments (HSWA) of 1984, which amended the Resource Conservation and Recovery Act (RCRA). Among other things, HSWA required EPA to develop regulations that would impose, on a phased schedule, restrictions on the land disposal of hazardous wastes. In particular, sections 3004(d), (e), and (g) of RCRA (2 USC 6924 (D), (e), and (g)) prohibit the land disposal of all wastes identified or listed as hazardous as of November 1984, unless the wastes are treated (or meet treatment standards) in a manner that "substantially diminish(es) the toxicity of the waste or substantially reduce(s) the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized." That alternative to satisfying these treatment standards is disposal in a unit from which there will be no migration of hazardous constituents for as long as the waste remains hazardous.

In developing such a broad program, Congress recognized that adequate alternative treatment, recovery, or protective disposal capacity might not be available by the applicable effective dates. Therefore, section 3004(h)(2) authorized EPA to grant a national capacity variance (based on the earliest date that such capacity would be available but not to exceed two years) that delays the effective date for new treatment standards. In addition, under section 3004(h)(3), EPA can grant an extension of the deadline on a case-by- case basis for one year (renewable for one additional year); however, variances are limited to a four year time period from the effective date.

On June 1, 1990, EPA published a final rule (55 FR 22520) establishing prohibitions and treatment standards for wastes in the final third of scheduled prohibitions. Among other things, the rule established prohibitions and treatment standards for soil contaminated with all

hazardous wastes subject to the LDRs (except for soil contaminated with the solvents and dioxins under section 3004(e) and soil contaminated with "California List Wastes" under section 3004(d) for which land disposal had been prohibited earlier). Because of a lack of treatment capacity as of June 1990, EPA granted a two-year national capacity variance for most hazardous soils (40 CFR 268.35(e))./1/ As such, disposal of these hazardous soils in untreated form became prohibited as of May 8, 1992.

NOTE /1/ The existing treatment standards for hazardous soil subject to the national capacity variance granted on June 1, 1990, and to today's case-by- case extension, are based upon incineration, retorting, or vitrification; the variance and extension also applies to soil contaminated with radioactive mixed wastes.

B. Revised Treatment Standards for Hazardous Soils

Hazardous soils present unique problems under the land disposal restriction program./2/ Hazardous soils are not a distinct waste form; rather, they are an environmental medium which has become contaminated with hazardous waste.

Furthermore, hazardous soils are not the product of particular industrial processes, but rather are generated, for the most part, when hazardous waste is released. The need for treatment generally occurs when the hazardous soil is removed as part of a cleanup effort.

NOTE /2/ Hazardous soil means soil that contains a hazardous waste listed in subpart D of 40 CFR part 261 that is subject to the LDRs of this part, or that exhibits a characteristic of hazardous waste identified in subpart C of 40 CFR part 261 that is subject to the LDRs of this part.

Hazardous soils, however, are regulated as hazardous wastes by virtue of the principle that materials containing hazardous wastes are themselves considered to be hazardous wastes. When EPA promulgated treatment standards for hazardous wastes (see 57 FR 37225 (Aug. 18, 1992)), it did not establish separate standards for wastes contained in other materials such as soil.

Rather, the standards for the specified wastes applied as well to materials in which such wastes are contained or mixed. Thus, the treatment standards for the wastes with which soil is contaminated are the applicable standards for treatment of the soil/waste matrix as well.

However, applying such standards to hazardous soils presents significant difficulties. In general, hazardous soil is more difficult to treat than the corresponding industrially generated RCRA hazardous waste. The treatment standards for most of the wastes affected by today's extension are based on performance of incineration. However, incineration of soil poses some technical problems including the following: (1) The feed systems for most solids incinerators are not designed to sufficiently handle the throughput needed for the large volumes of soils typically found at a site where cleanup is occurring; (2) a large percentage of the hazardous soil is contaminated with low concentrations of toxic organics and is, therefore, primarily non- combustible (due largely to the fact that soil does not burn); and (3) a significant amount of supplemental fuel must be burned and, as such, incineration of soils typically utilizes a great deal of

energy to treat the waste with which the soil is contaminated.

In addition, incinerators that are currently commercially available are typically designed to manage conventional industrial hazardous wastes residues that consist primarily of organics rather than inorganics (such as those that comprise soil). These incinerators are not generally capable of handling significant volumes of hazardous soil due to their throughput designs, feed preparation units, retentions times, ash/residue handling units, etc. Incinerators designed specifically for soil have not generally been constructed, due to the previous low generation rates of soils requiring incineration and the practical problems discussed above which are exacerbated by the fact that the generation of hazardous soils is irregular both spatially and over time. This has made it difficult to develop an adequate amount of effective treatment capacity for their management. The irregular generation patterns has been a particularly significant factor impeding the development of commercial treatment capacity for soils contaminated with radioactive mixed wastes.

Because of these unique considerations where soils are concerned, EPA is currently developing a separate set of treatment standards for hazardous soils. These standards will be based on the use of alternative technologies, including the use of technologies such as soil washing, thermal desorption, and biodegradation. These standards have not been proposed to date, but EPA announced its intention to issue such standards in an Advance Notice of Proposed Rulemaking; see 56 FR 55160, 55172-77 (October 24, 1991). This notice discussed in detail the difficulty in applying the existing BDAT standards to hazardous soils and sought comment on a variety of issues to be addressed before such treatment standards are proposed.

In the meantime, however, the existing treatment standards remain applicable to soils contaminated with a hazardous waste, even though EPA has recognized the impracticality of attempting to comply with them in many instances. As would be expected in light of such impracticality and uncertainty about the standards that will ultimately be adopted, treatment capacity based on the BDAT standards of the Third Third rule has not been developed. While the existing regulations allow the regulated community to obtain treatability variances from the existing treatment standards, the regulated community believes, and EPA agrees, that it is inappropriate to use this regulatory mechanism (which was designed to address exceptional circumstances) as the means to develop treatment standards for hazardous soils; they believe it to be highly inefficient and resource intensive for both the regulated community and EPA.

Therefore, in contrast to other wastes for which the waste volumes and treatment technology are known, and capacity is lacking, but for which EPA expects capacity can and will be developed, EPA does not believe that the development of treatment capacity for effectively managing most hazardous soils can realistically be expected until revised standards more appropriate for such hazardous soils have been issued. In addition, EPA is concerned that fear of liability could hinder present and future voluntary cleanup operations. EPA believes that allowing cleanup projects to continue is more protective of the environment that allowing wastes to remain in the soil.

Therefore, EPA is granting today, on an interim final basis an extension under 40 CFR 268.5, until May 8, 1993, for most hazardous soils. Although

such extensions are normally granted on the basis of site-specific applications, EPA previously granted such extensions on a nationwide basis where it has concluded that conditions warranting such an extension apply to a class of generators, or treatment or storage facilities nationwide. The Agency concludes that such circumstances exist in the case of certain hazardous soils as well.

The capacity extension provided today is applicable to hazardous soil containing Third Third wastes whose BDAT is either incineration, retorting, or vitrification, and to soils contaminated with radioactive mixed waste, which received a national capacity variance in the Third Third rule./3/ Soils contaminated with listed solvent or dioxin waste covered by the section 3004(e) prohibition and soil contaminated with "California List Wastes" pursuant to section 3004(d) are not covered by this extension. The time for granting national and case-by-case capacity extensions for both of these groups has expired, so that further extension is not possible (See 55 FR 2265-52).

NOTE /3/ The major waste types that did not receive a national capacity variance were corrosive wastes (D002), reactive wastes (D003), barium (D005), cadmium (D006), chromium (D007), lead (D008), selenium (D010), and silver (D011) wastes. For soils, contaminated with these wastes, the LDRs became effective May 8, 1990 and EPA has no authority to provide relief from these requirements. For toxicity characteristic wastes, treatment standards have not yet been set; therefore, these soils may still be land disposed.

II. Justification for This Extension

A. Demonstration Under 40 CFR 268.5

In this notice, EPA is taking regulatory action to grant an interim final national case-by-case extension of the effective date for treatment standards for certain hazardous soil, as described elsewhere in the preamble.

40 CFR 268.5 specifies seven demonstrations that must be made for the approval of a case-by-case extension to a treatment standard of the prohibition effective date. From information it has obtained from generators and handlers of hazardous soils, EPA has made an evaluation of these seven required demonstrations as follows:

Demonstration 40 CFR 268.5(a)(1)

The applicant must demonstrate that he has made a good-faith effort to locate and contract with treatment, recovery, or disposal facilities nationwide to manage his waste in accordance with the effective date of the applicable restriction established under subpart C of this part.

Due to the generic nature of the problem presented by hazardous soils, it has not been practicable to gather this information from every owner/operator managing such wastes. However, site-specific information is not required because the information obtained by EPA (and placed in the docket for this extension) indicates that there is a general nationwide lack of capacity for treatment of certain hazardous soils. This is because, as discussed above, the technologies on which the promulgated treatment

standards were based are simply not appropriately designed for soils in many cases, and alternative treatment standards, based on technologies designed specifically for such soils, discussed in this notice have not yet been promulgated. Parties involved in the chemical and petroleum industries, or in the remediation of contaminated sites, have indicated to EPA that they are unable at this time to locate treatment, recovery, or protective disposal capacity for hazardous soils. The data recently provided to the Agency indicate that hazardous soils contaminated with organics will be generated by hundreds of remediation efforts that are underway or are planned. The available capacity for soil incineration (the primary treatment technology for such soil) is limited and would not beable to handle this large influx of soil.

Likewise, there is limited commercial retorting capacity available for the treatment of hazardous soils contaminated with high levels of mercury. The feed systems for commercial mercury retorting units are typically designed for batch processing of small volumes of wastes (such as glass, electrical devices, and light bulbs). Other retorting systems are currently being designed for specific hazardous wastes from the chlor-alkali industry (K106-- mercury sulfide wastes). Neither of these types of retorting systems have been specifically designed to handle soils nor the large volumes of soil that are expected. Information EPA has obtained from companies and trade associations indicate that clean-ups of more than 700 sites contaminated with mercury will produce over 30,000 tons of hazardous soil. The current limited retorting capacity would be overwhelmed by this amount of hazardous soil./4/

NOTE /4/ It should be noted that the process of retorting is designed to thermally desorb (i.e., extract) mercury from an inorganic matrix. In the final rule for debris wastes (57 FR 37194 (August 18, 1992)), EPA recognized the usefulness of other extraction technologies in addition to thermal desorption for the removal of other hazardous constituents from inorganic debris. As such, EPA is currently investigating alternative means of extraction of mercury that are specifically designed for contaminated soil and that could potentially achieve a level of performance similar to retorting.

EPA promulgated standards for arsenic wastes based on the use of a vitrification technology that was designed to handle industrial wastes with very high concentrations of arsenic. On the other hand, contaminated soils are comprised primarily of inert inorganic materials that require a significantly larger amount of energy to vitrify than the industry wastes.
Commercial vitrification capacity designed specifically for soils is virtually nonexistent and, as such, is not adequate. Information obtained from companies and trade associations involved with hazardous soils (available in the docket) indicates that an estimated 120,000 tons or more of arsenic hazardous soil is expected to be generated at over 600 sites nationwide by remediation efforts. There is a clear shortfall of vitrification capacity with regard to arsenic contaminated hazardous soil./5/
NOTE /5/ Many of the sites are contaminated with relatively low total concentrations of arsenic. Data received for the Third rulemaking indicated that industrial wastes containing low concentrations of arsenic could be chemically stabilized (with careful consideration of the unique chemistry of arsenic) to levels that could comply with the standard established based on vitrification. EPA is currently investigating the applicability of these

special chemical stabilization process for contaminated soil as an alternative to the energy intensive vitrification processes.

EPA believes that these data portray the existing insufficient capacity for treatment of hazardous soil. EPA agrees that there is, in general, far less treatment capacity available than would be required to handle the soil being generated, and that the development of capacity consistent with the current treatment standards is uncertain. Furthermore, the Agency would not expect the industry to construct and make available capacity based on alternative technologies until the Agency promulgates revised treatment standards for hazardous soils.

Therefore, for all of the reasons discussed above, through no fault of their own, generators are unable to, or cannot reasonably be expected to enter into contracts at this time, to construct or otherwise obtain access to treatment, recovery, or protective disposal facilities.

Demonstration 40 CFR 268.5(a)(2)

The applicant has entered into a binding contractual commitment to construct or otherwise provide alternative treatment, recovery (e.g., recycling), or disposal capacity that meets the treatment standards specified in subpart D or, where treatment standards have not been specified, such capacity is protective of human health and the environment.

For the reasons discussed above, the treatment of soil to meet certain existing BDAT standards is impractical in most cases and construction of additional capacity will require new standards to be issued. Therefore, until the anticipated revision of the treatment standards for hazardous soils is promulgated, it will be difficult, if not impossible, for generators to construct or enter into contractual commitments to construct or otherwise provide additional treatment capacity.

EPA is requiring, however, that each generator of hazardous soil subject to this extension make a good faith effort to enter into such a contract at the earliest date practicable after revised treatment standards are promulgated (if that occurs during the extension period) to provide the necessary treatment capacity.

Demonstration 40 CFR 268.5(a)(3)

Due to circumstances beyond the applicant's control, such alternative capacity cannot reasonably be made available by the applicable effective date. This demonstration may include a showing that the technical and practical difficulties associated with providing the alternative capacity will result in the capacity not being available by the applicable effective date.

As discussed above, information obtained by EPA indicates major technical and practical difficulties that make it impractical to provide alternative capacity under the current treatment standards. For example, large volumes of hazardous soils are typically found at a site where cleanup is occurring.
Most feed systems on solids incinerators are not capable of handling these

large volumes due to their throughput designs, feed preparation units, retention times, ash/residue handling units, etc.

EPA believes these to be valid concerns and agrees that additional time is needed to resolve these concerns by issuing revised standards tailored to the unique nature of hazardous soils. These circumstances are beyond the control of the generators who need to treat or dispose of their hazardous soils.

Demonstration 40 CFR 268.5(a)(4)

The capacity being constructed or otherwise provided by the applicant will be sufficient to manage the entire quantity of waste that is the subject of the application.

As discussed above, generators will be unable to provide capacity that meets treatment standards until the revised treatment standards are promulgated. Since generators cannot immediately plan to construct capacity because of uncertainty associated with appropriate treatment technology, EPA believes that these uncertainties make it difficult for generators to determine their capacity requirements at this time. In addition, a key timing concern relates to the immediate logistical problems relating to the time needed for permit modifications. EPA does believe, however, that adequate treatment capacity can be provided once the revised hazardous soil standards are promulgated.

Demonstration 40 CFR 268.5(a)(5)

He provides a detailed schedule for obtaining required operating and construction permits or an outline of how and when alternative capacity will be available.

As discussed above, it will be difficult for generators to provide a detailed schedule outlining how and when alternative capacity will be available until revised treatment standards are issued. EPA is requiring, however, as a condition of this variance that owners and operators place a planned schedule into their facility operating record within 90 days after the revised treatment standards are promulgated (if that date occurs before the extension expires).

Demonstration 40 CFR 268.5(a)(6)

The applicant must demonstrate that he has arranged for adequate capacity to manage his waste during an extension and has documented in the application the location of all sites at which the waste will be managed.

Due to the nature of this extension, EPA has little facility-specific information on the amount and location of the capacity that operators will use to manage their hazardous soil during this extension. Rather, as discussed below, EPA is requiring owners and operators to include documentation in the facility record describing the means by which their hazardous soil will be managed between October 13, 1992, and May 8, 1993, and showing the location and adequacy of such capacity.

Demonstration 40 CFR 268.5(a)(7)

Any waste managed in a surface impoundment or landfill during the extension period will meet the requirements of paragraph (h)(2) of 40 CFR 268.5.

Due to the nature of the extension, site specific information available to EPA on management in land disposal facilities during the extension period is not available. However, any generator who intends to manage his hazardous soil in a surface impoundment or landfill during the extension must ensure that the unit meets the requirements of 40 CFR 268.5(h)(2) (i.e., meets the minimum technology requirements set out in regulation 40 CFR parts 264 and 265) (see RCRA section 3004(h)(4)). Failure to do so may be grounds for revocation of the extension for the generator.

B. Consultation With the States

In addition to the above seven demonstrations, EPA is required under 40 CFR 268.5(e) to consult with appropriate State agencies in all affected States.

EPA consulted with the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) who developed a questionnaire regarding hazardous soils contaminated with mercury and arsenic, that was sent out to all the states. The questionnaire was sent to all states, of whom thirty-five states chose to respond to the survey. The responses from these states support the need for an extension of the LDR effective date for hazardous soils. These responses have been included in the docket for this extension.

C. Conclusion

Based on its evaluation of the demonstrations required under 40 CFR 268.5, and for the reasons stated above, EPA is approving an interim final case-by- case extension to the Land Disposal Restrictions for those hazardous soils previously subject to the national capacity variance for soils granted in the Third Third land disposal restriction rule (June 1, 1990) whose BDAT is either incineration, retorting or vitrification, or those Third Third soils were contaminated with radioactive mixed waste. This extension is effective from October 13, 1992, to May 8, 1993. EPA is taking this exceptional regulatory action because of the unique circumstances which have resulted in the lack of treatment, recovery, and protective disposal capacity for hazardous soil, the need for promulgation of revised treatment standards before such capacity can be constructed, and EPA's conclusion that treatment capacity meeting those standards is limited, or is limited due to logistical problems, but can be provided after revised treatment standards are promulgated. EPA believes that granting this extension is the most environmentally protective option because it will eliminate some of the regulatory obstacles that could force cleanup projects to be postponed.

III. Requirements for This Extension

To receive the benefit of this extension, a generator or owner/operator must include the following information in its onsite records by December 21, 1992, or at the time the hazardous soil is generated:

(1) The name, mailing address, location, and EPA identification number (if

assigned) of facility. The term "facility" includes any site, whether permanent (such as a manufacturing plant), or temporary where hazardous soil will be generated;
(2) A description of the hazardous soil waste stream, including the RCRA waste code(s);
(3) Waste generation rates (cu.m./yr.), and estimated inventories (cu.m.);
(4) Certification as required under 40 CFR 268.5(b);
(5) The method of any storage for hazardous soil, storage capacity, and RCRA permit status (i.e., interim status, permitted, or 90-day generator) of the storage unit during the extension period; and
(6) If management of hazardous soil during the extension includes the use of a surface impoundment or landfill, the owner operator must certify that such unit meets the requirements of 40 CFR 268.5(h)(2).

In addition, within 90 days after revised treatment standards are promulgated (if this occurs before the extension expires), each owner and operator must maintain in the facility record (or, for generators, in the files maintained pursuant to Sec. 268.7(a)(5)) a written plan that describes how the facility will obtain adequate treatment capacity. At a minimum, this plan must include a schedule of how the owner or operator plans to design, construct, and obtain the necessary permits to provide on-site treatment, recovery, or disposal capacity or a description of how the owner or operator intends to obtain a binding contractual commitment for off-site capacity.

This information must be furnished upon request, and made available at all reasonable times for inspection by any officer, employee, or representative of EPA, or the appropriate State agency who is duly designated by EPA or the State agency.

Under 40 CFR 268.5(e), the Administrator may renew this extension to allow continued land disposal from May 8, 1993, to May 8, 1994. Prior to the May 8, 1993 effective date, EPA will evaluate the status of available capacity, current capacity needs, as well as the status of the revised treatment standards for hazardous soils as they relate to an owner or operators ability to satisfy the demonstrations. Based on this evaluation, EPA may extend the national case-by-case for up to an additional year; if so, all persons who qualify for today's extension would be allowed until May 1994 to construct or otherwise provide the necessary treatment, recovery, or protective disposal capacity for his hazardous soil.

EPA is also using this opportunity to make certain clarifications to the amendatory language promulgated on June 26, 1992 (57 FR 28628) in connection with a similar extension for contaminated debris. These changes do not alter that extension and are intended solely to clarify the Agency's original intention.

List of Subjects in 40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

Dated: October 13, 1992.

Don R. Clay,

Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 268--LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. In Sec. 268.35 paragraphs (c), (d) and (e) are revised to read as follows:

Sec. 268.35 Waste specific prohibitions--Third Third wastes.

* * * * *

(c) Effective May 8, 1992, the following waste specified in 40 CFR 261.31 as EPA Hazardous Waste Numbers F039 (nonwastewaters); the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Number K031 (nonwastewaters); K084 (nonwastewaters); K101 (nonwastewaters); K102 (nonwastewaters); K106 (nonwastewaters); the wastes specified in 40 CFR 261.33(e) as EPA Hazardous Waste Numbers P010 (nonwastewaters); P011 (nonwastewaters); P012 (nonwastewaters); P036 (nonwastewaters); P038 (nonwastewaters); P065 (nonwastewaters); P087; and P092 (nonwastewaters); the wastes specified in 40 CFR 261.33(f) as EPA Hazardous Waste Numbers U136 (nonwastewaters); and U151 (nonwastewaters); the following wastes identified as hazardous based on a characteristic alone: D004 (nonwastewaters); and D009 (nonwastewaters); and RCRA hazardous wastes that contain naturally occurring radioactive materials are prohibited from land disposal.

(d) Effective May 8, 1992, hazardous wastes listed in 40 CFR 268.10, 268.11 and 268.12 that are mixed radioactive/hazardous wastes are prohibited from land disposal, except as provided in paragraph (e) of this section.

(e) Subject to applicable prohibitions in Secs. 268.30, 268.31, and 268.32, contaminated soil and debris are prohibited from land disposal as follows:

(1) Effective May 8, 1993, debris that is contaminated with wastes listed in 40 CFR 268.10, 268.11, and 268.12 (including such wastes that are mixed radioactive hazardous wastes), and debris that is contaminated with any characteristic waste for which treatment standards are established in subpart D of this part (including such wastes that are mixed radioactive hazardous wastes), are prohibited from land disposal.

(2) Effective May 8, 1993, hazardous soil having treatment standards in subpart D of this part based on incineration, mercury retorting or vitrification, and soils contaminated with hazardous wastes listed in 40 CFR 268.10, 268.11 and 268.12 that are mixed radioactive hazardous wastes, are prohibited from land disposal.

* * * * *

(FR Doc. 92-25398 Filed 10-19-92; 8:45 am)

BILLING CODE 6560-01-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 3004 1006 3001 2002 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-616 -- Hazardous and Solid Waste Amendments of 1984

DIALOG(R)File 180:Federal Register

Hazardous Waste Management System; Definition of Hazardous Waste; 'Mixture' and Derived-from' Rules

Volume: 57 Issue: 105 Page: 23062
CITATION NUMBER: 57 FR 23062
Date: MONDAY, JUNE 1, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 261
NUMBERS: No. FRL-4136-8
DATES: Effective: 19920601
CONTACT INFORMATION: Marilyn Goode, 202-260-8551
ACTION: Interim final rule; technical corrections
INTERNAL DATA: (FR Doc. 92-12740 Filed 5-29-92; 8:45 am)
Word Count: 1137

SUMMARY: On March 3, 1992 (57 FR 7628), the Environmental Protection Agenc (EPA) announced the interim final repromulgation of 40 CFR 261.3, including the "mixture" and "derived-from" rules. These rules are part of the definition of hazardous waste under Subtitle C of the Resource Conservation and Recovery Act (RCRA). The rules define "hazardous waste" to include mixtures of hazardous waste with other solid waste and the residue from managing listed hazardous waste. Today's notice restores language to 40 CFR 261.3 that the Agency inadvertently omitted from the interim final rulemaking.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

(FRL-4136-8)

Hazardous Waste Management System; Definition of Hazardous Waste; "Mixture" and Derived-from" Rules

AGENCY: Environmental Protection Agency.

ACTION: Interim final rule; technical corrections.

SUMMARY: On March 3, 1992 (57 FR 7628), the Environmental Protection Agency (EPA) announced the interim final repromulgation of 40 CFR 261.3, including the "mixture" and "derived-from" rules. These rules are part of the definition of hazardous waste under Subtitle C of the Resource Conservation and Recovery Act (RCRA). The rules define "hazardous waste" to include mixtures of hazardous waste with other solid waste and the residue from managing listed hazardous waste. Today's notice restores language to 40 CFR 261.3 that the Agency inadvertently omitted from the interim final rulemaking.

DATES: This rule is effective on June 1, 1992.

FOR FURTHER INFORMATION CONTACT: Ms. Marilyn Goode, Office of Solid Wast (OS-332), U.S. Environmental Protection Agency, 401 M St., SW., Washington, DC 20460, (202) 260-8551.

SUPPLEMENTARY INFORMATION: On May 19, 1980, EPA promulgated regulations to govern the management of hazardous waste under RCRA, including the "mixture" and "derived-from" rules at 40 CFR 261.3. On December 6, 1991, the United States Court of Appeals for the District of Columbia ruled that the Agency had failed to give sufficient notice and opportunity for comment in promulgating the "mixture" and "derived-from" rules. The court therefore vacated the rules and remanded them to the Agency (Shell Oil v. EPA, No. 80- 1532 et al. (D.C. Cir., December 6, 1991)). At the invitation of the court, EPA reinstated 40 CFR 261.3 on an interim basis under section 553(b)(3)(B) of the Administrative Procedure Act (APA). This interim final rule was published on March 3, 1992 (57 FR 7628).

In reinstating the "mixture" and "derived-from" rules, the Agency neglected to include certain changes to 40 CFR 261.3 that had been promulgated in 1991.

The first change was an amendment to 40 CFR 261.3(d)(1) which EPA promulgated on January 31, 1991 (55 FR 3876). This amendment clarified that wastes exhibiting a hazardous characteristic at the point of generation may still be subject to the land disposal restrictions of 40 CFR part 268, even if the wastes no longer exhibit the characteristic at the point of land disposal.

The second change was an amendment to 40 CFR 261.3(c)(2)(ii)(B) which the Agency promulgated on July 17, 1991 (56 FR 32692). This amendment reflected the fact that on February 21, 1991, EPA has provided an exclusion from the definition of solid waste for coke and coal tar from the iron and steel industry that is used as a fuel and that contains or is produced from decanter tank tar sludge, EPA Hazardous Waste K087. The process of producing coke and coal tar from such decanter tank tar sludge in a coke oven was likewise excluded from regulation in that notice (56 FR 7206-7207). The conforming amendment published on July 17, 1991 deleted the cross-reference in 40 CFR 261.3(c)(2)(ii)(B) to wastes from burning coke and coal tar from the iron and steel industry that contain EPA Hazardous Waste No. K087.

The third change was an amendment to 40 CFR 261.3(c)(2)(ii), promulgated by the Agency on August 19, 1991 (56 FR 41176-41177). This amendment provided an exclusion from the "derived-from" rule for certain residues resulting from treating EPA Hazardous Waste No. K061 by high temperature metal recovery (40 CFR 261.3(c)(2)(ii)(C)).

The omission of these amendments in the March 3, 1992 interim final rule was unintentional. Today's notice restores all of the regulatory amendments described above which were mistakenly excluded from the March 3, 1992 reinstatement of 40 CFR 261.3. In addition, EPA is today deleting an outdated reference in 40 CFR 261.3(a)(2)(i) to the Extraction Procedure Toxicity Characteristic, and replacing it with a reference to the Toxicity

Characteristic, which has replaced the Extraction Procedure Toxicity Characteristic see (55 FR 11798, March 29, 1990).

Because this rulemaking action simply restores omitted text from a preexisting rule and makes other minor technical corrections, public comment is unnecessary (see 5 U.S.C. 553(b)(B)). For the same reasons, the Agency believes that there is good cause for making these changes effective immediately (see 5 U.S.C. 553(d)(3)).

List of Subjects in 40 CFR Part 261

Hazardous waste, Recycling, Reporting and recordkeeping requirements.

Dated: May 14, 1992.

Don R. Clay,
Assistant Administrator for Solid Waste and Emergency Response.

Technical Corrections

In rule document number 91-4255, beginning on page 7628 is the Federal Register published on Tuesday, March 3, 1992, make the following corrections:

PART 261--(AMENDED)

Sec. 261.3 (Corrected)

1. On page 7632, second column, in Sec. 261.3(a)(2)(i), lines 17 and 18, change "Extraction Procedure Toxicity characteristic" to "Toxicity Characteristic".

Sec. 261.3 (Corrected)

2. On page 7633, third column, in Sec. 261.3(c)(2)(ii)(B), line 3, change "Sec. 261.6(a)(3)(v) through (ix)" to "Sec. 261.6(a)(3)(v) through (viii)".

Sec. 261.3 (Corrected)

3. On page 7633, third column, in Sec. 261.3(c)(2)(ii), add paragraph Sec. 261.3(c)(2)(ii)(C) to read as follows:

(C) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in 40 CFR 260.10(6), (7), and (12), that are disposed in Subtitle D units, provided that these residues meet the generic exclusion levels identified below for all constituents, and exhibit no characteristics of hazardous waste. Testing requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes.

The generic exclusion levels are:

Constituent	Maximum for any single composite sample (mg/1)
Antimony	0.063
Arsenic	0.055
Barium	6.3
Beryllium	0.0063
Cadmium	0.032
Chromium (total)	0.33
Lead	0.095
Mercury	0.009
Nickel	0.63
Selenium	0.16
Silver	0.30
Thallium	0.013
Vanadium	1.26

For each shipment of K061 HTMR residues sent to Subtitle D unit that meets the generic exclusion levels for all constituents, and does not exhibit any characteristic, a notification and certification must be sent to the appropriate Regional Administrator (or delegated representative) or State authorized to implement part 268 requirements. The notification must include the following information: (1) The name and address of the subtitle D unit receiving the waste shipment; (2) the EPA hazardous waste number and treatability group at the initial point of generation; (3) treatment standards applicable to the waste at the intital point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

Sec. 261.3 (Corrected)

4. On page 7633, third column, in Sec. 261.3(d)(1), line 4, add the following at the end of the line:

(However, wastes that exhibit a characteristic at the point of generation may still be subject to the requirements of part 268, even if they no longer exhibit a characteristic at the point of land disposal.)

(FR Doc. 92-12740 Filed 5-29-92; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:

Pub. Law 89-272 SEC. 3001 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)

Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)

DIALOG(R)File 180:Federal Register

Hazardous Waste Management; Liquids in Landfills
Volume: 57 Issue: 223 Page: 54452
CITATION NUMBER: 57 FR 54452
Date: WEDNESDAY, NOVEMBER 18, 1992

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 260 264 265 271
NUMBERS: FRL-4506-3; RIN 2050-AA34
DATES: Effective: 19930518
CONTACT INFORMATION: RCRA-Superfund Hotline, 800-424-9346, 202-920-9810; Ken Shuster, 202-260-2214
ACTION: Final rule
INTERNAL DATA: (FR Doc. 92-27289 Filed 11-17-92; 8:45 am)
Word Count: 8999

SUMMARY: Under authority of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), EPA is promulgating this final rule regarding the landfill disposal of containerized liquids mixed with sorbents. This rule satisfies the statutory requirement that EPA issue a rule that prohibits the disposals in hazardous waste landfills of liquids that have been sorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations. This rule will help assure the stability of materials in hazardous waste landfills.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260, 264, 265, and 271

(FRL-4506-3)

RIN 2050-AA34

Hazardous Waste Management; Liquids in Landfills

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: Under authority of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), EPA is promulgating this final rule regarding the landfill disposal of containerized liquids mixed with sorbents. This rule satisfies the statutory requirement that EPA issue a rule that prohibits the disposals in hazardous waste landfills of liquids that have been sorbed in materials

that biodegrade or that release liquids when compressed as might occur during routine landfill operations. This rule will help assure the stability of materials in hazardous waste landfills.

EFFECTIVE DATE: May 18, 1993.

ADDRESSES: The public docket for this final rule is docket reference code F- 92-CLIF-FFFFF, and the public dockets for the four proposals and supplemental notices are docket reference codes F-86-CLIP-FFFFF, F-87-CLLN-FFFFF, F-91- CLLA-FFFFF, and F-92-CCLA-FFFFF. These dockets are in room M2427, U.S. EPA, 401 M St. SW, Washington, DC 20460, and are open from 9 am to 4 pm, Monday through Friday, excluding holidays. Call 202-260-9327 for an appointment to review docket materials. Up to 100 pages may be copied free of charge from any one regulatory docket. Additional copies are $0.15 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline at 1-800-424-9346 (toll free), or 703-920-9810 in the Washington, DC area. For information on technical aspects of this rule, contact Ken Shuster, Office of Solid Waste (OS-340), U.S. EPA, 401 M St. SW, Washington, DC 20460, 202-260-2214.

SUPPLEMENTARY INFORMATION:

Preamble Outline

I. Authority

These rules are being issued under authority of section 3004(c) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 and the Hazardous and Solid Waste Amendments of 1984; 42 U.S.C. 6924(c).

II. Background

A. Regulatory Background

Section 3004(c)(2) of HSWA requires EPA to issue final rules, by February 8, 1986, that "minimize the disposal of containerized liquid hazardous waste in landfills," that "minimize the presence of free liquids in containerized hazardous waste to be disposed of in landfills," and that "prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations."

On April 30, 1985 (50 FR 18370) EPA issued a final rule requiring the use of the Paint Filter Liquids Test (PFT), Method 9095, to determine the presence of free liquids in either bulk or containerized waste. Wastes that fail the PFT--i.e., that contain free liquids--cannot be disposed of in landfills. This satisfied the requirement that EPA issue regulations minimizing the disposal of containerized liquid hazardous waste in landfills and minimizing the presence of free liquids in containerized hazardous waste to be disposed of in landfills./1/

NOTE /1/ Section 3004(c)(1) of HSWA prohibits the placement of bulk or noncontainerized liquid hazardous waste in landfills, and section 3004(c)(3) prohibits the placement of liquids which are not hazardous wastes in Subtitle C landfills unless certain demonstrations are made. The PFT is required to determine the presence of liquids or free liquids to comply with these prohibitions, 40 CFR 264.314(c) and 40 CFR 265.314(d).

On December 24, 1986 (51 FR 46824) EPA proposed a rule that would prohibit disposal of containerized liquids treated with sorbents that had more than one percent total organic carbon or TOC (as a measure of biodegradability). In the preamble, EPA recommended that the modified Mebius procedure (Page, A.L., ed., 1982, Methods of Soil Analysis) be used to determine the organic carbon content. EPA also proposed a Liquids Release Test (LRT), a confined compression type test, to simulate the release of liquids from sorbed wastes when compressed during landfill operations. The test relied on a device known as the Zero-Headspace Extractor (ZHE), which was developed in conjunction with the new Toxicity Characteristic Leaching Procedure (TCLP). Containerized sorbed wastes that failed these tests could not be disposed of in landfills.

The proposal was intended to satisfy the section 3004(c)(2) requirement that EPA "prohibit the disposal in landfills of liquids that have been absorbed in materials that biodegrade or that release liquids when compressed as might occur during routine landfill operations."

On June 24, 1987 (52 FR 23695) EPA issued a supplemental proposal regarding the definition of biodegradable in response to comments received on the one percent TOC requirement and on the recommended modified Mebius procedure. In this notice, EPA recommended two additional tests to determine biodegradability: ASTM Method G21-70 (1984a)--Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi, and ASTM Method G22-76 (1984b)--Standard Practice for Determining Resistance of Plastics to Bacteria. The Agency also proposed to regulate sorbent pillows in a manner similar to lab packs.

On October 29, 1991 (56 FR 55646) EPA issued another supplemental notice, seeking comments on single and multi-laboratory test results on a revised Liquids Release Test device (also a confined compression type test). Finally, in response to further comments, EPA on May 1, 1992 (57 FR 18853) issued a notice of supplemental information seeking comment on use of the PFT versus the LRT for containerized sorbents.

In today's rule, EPA is taking final action on these proposals and notices of additional information, and is completing EPA's regulatory responsibilities under RCRA section 3004(c)(2).

B. Role of Sorbents in Liquid Hazardous Waste Disposal

Dozens of sorbents are on the market today. These sorbents are used to sorb free liquids in wastes before land disposal, thereby reducing the amount of leachate likely to be generated after disposal, or to sorb free liquids from a spill before they migrate. Some sorbents are by-products of other production processes which are typically discarded, such as fly ash from coal-burning, cement kiln dust from cement production, shredded and ground rubber from tires, shredded paper and sawdust, and corn cobs, peanut shells, and rice hulls from crop harvesting. They tend to be relatively cheap and are often readily available. Other sorbents are derived from mined natural minerals, such as bentonite or montmorillonite clays, diatomaceous earth, volcanic ash, lime and limestone, silicates, and vermiculite. Other common sorbents are synthetic organic polymers such as polyethylene, polypropylene, polyurethane, and polystyrene. Many commercial sorbents are mixtures of sorbent materials. Often these materials, especially the natural minerals, are treated by heat, grinding, sifting, or use of additives to enhance their sorptive capacities.

Sorption can be viewed in two ways: First, as the soaking up of liquid or fluid material so that the material no longer flows, and second, as the rendering of hazardous constituents immobile or less mobile, via attenuation, chemical reactions or fixation, ion exchange, precipitation, neutralization, or encapsulation (also referred to as chemisorption). Some sorbents act in both ways to one degree or another. The focus of today's rule is on the first view of sorbents. Even so, the ultimate selection of a sorbent is usually based on both aspects, as well as on a number of other factors discussed below.

Two very important, interrelated considerations in the selection of a sorbent are: (1) Stability (in terms of both maintaining liquids in an immobile matrix and immobilizing hazardous constituents), and (2) ultimate use or disposal of the sorbed material. If the sorbed material is to be disposed of in a landfill, the first consideration, long-term stability, is of paramount importance. Thus, nonbiodegradable sorbents able to hold up under pressure are desirable. If the sorbed material is to go to an incinerator, then such factors as energy content (Btu's), heavy metal content, and products of combustion are important; long-term stability is not. Thus, for incineration, organic sorbents, whether biodegradable or not, are generally desirable, depending on potential by-products of combustion (e.g., polyvinyl chloride which produces HC1 upon incineration or materials with heavy metals may be less desirable despite their Btu content, but peanut shells, shredded paper, or corn cobs may be desirable). Or, if the sorbed material is to go to a recycling facility (where it will be squeezed out and the oil, gasoline, solvent, or other material recovered), then squeezeability/releasability, without the sorbent breaking down, is desirable.

Some sorbents are more effective, i.e., have greater capacity and retention efficiencies and are faster, than others in soaking up liquids (some soak up considerably larger amounts of liquids per volume or weight of sorbent; some are structurally more stable and retain more liquids under pressure; and some actually react chemically with liquids, sometimes irreversibly, to form a nonliquid mass that further ensures stabilization). The effectiveness of a given sorbent often depends on the properties of the liquid to be sorbed.

This liquid is referred to as the sorbate. Some sorbents are considerably more effective with some sorbates than with others. For example, sorbents

that are both hydrophobic and less dense than water can be very effective in sorbing oils on water (oil spills) where they can be readily skimmed off the surface, whereas other sorbents would soak up more water and less oil, and would sink where they are not readily recoverable. Some sorbents substantially raise the flash points of solvents, decreasing flammability concerns. Some sorbents are ineffective because they are broken down or dissolved by certain sorbates (e.g., hydrofluoric acid breaks down silicates or glass). That is, chemical degradation of the sorbent can occur as well as biodegradation. Sorbent/sorbate properties that affect sorbency include: pH, porosity, surface area, potential capillarity and surface tension or affinity for a sorbate, polarity, and viscosity. Thus, there are technical factors affecting sorbent selection as well as economic and other practical factors, such as availability (especially timeliness in the case of a spill or emergency), cost, sorbent capacity (sorbate to sorbent ratio or percent, by volume and by weight, which affects total volume and weight and therefore cost to transport and use or dispose), and distance to site of use or disposal.

EPA considered these factors in developing today's rule, which is designed to facilitate technological advances and to allow flexibility for the treaters of liquids to select the most effective and practical solutions. The rule sets minimum standards regarding biodegradation and release of liquids that containerized wastes mixed with sorbents must meet before they can be landfilled. EPA did not attempt to evaluate the effectiveness of various sorbents beyond these minimums, nor did EPA attempt to identify efficient sorbate/sorbent combinations. Instead, today's rule allows the selection of the most effective sorbent for a specific situation, as long as it meets the rule's minimum standards.

III. Summary of Today's Rule

Today's rule adopts the Paint Filter Liquids Test, Method 9095, for the testing of containerized liquids to which sorbents have been added before land disposal; lists classes of nonbiodegradable sorbents, and gives examples in each class; and identifies two tests, either of which may be used to determine the nonbiodegradability of sorbents not within a class on the list.
It also requires the use of nonbiodegradable sorbents in lab packs.

IV. Detailed Discussion of the Final Rule

A. Definition of "Sorbents"

In RCRA section 3004(c)(2), Congress requires EPA to establish special standards for "liquids that have been absorbed in materials that biodegrade or that release liquids * * *" (emphasis added). Several commenters on EPA's proposals stated that Congress misused the term absorbed, and should have used the term adsorbed, or perhaps both terms. "Adsorbents" are materials that retain liquids on the surface of their particles by capillary action and surface tension. "Absorbents" retain liquids within the void spaces between particles and within the inner structure of the sorbing material. Discussion of the issue in the legislative history of HSWA clearly indicates that Congress meant adsorbents, as defined above, as well as absorbents. To reflect this clear Congressional intent, EPA uses the terms "sorbent" and "sorb" in today's rule, instead of the terms

"absorbent" and "absorb." These terms are defined in Sec. 260.10. "Sorbent" means a material that is used to soak up free liquids by either adsorption, or both. "Sorb" means to either adsorb or absorb, or both.

B. Paint Filter Liquids Test (PFT) Versus Liquids Release Test (LRT)

In its December 24, 1986, October 29, 1991, and May 1, 1992 Federal Register notices, EPA proposed and solicited comment on a Liquids Release Test (LRT) specifically designed to simulate the behavior or sorbed materials under compression that might occur during routine landfill operations. In December 1986, EPA proposed use of the Zero Head-Space Extractor (ZHE) device, which EPA was developing in conjunction with the new Toxicity Characteristic Leaching Procedure (TCLP). Because of technical concerns raised by commenters on the ZHE, EPA subsequently developed and tested a different compression type device. In the October 1991 proposal, EPA published the results of single and multi-laboratory tests using the new LRT device at 50 psi to simulate worst-case landfill pressures. The 50 psi was based on a 100 ft landfill depth and an overlying material bulk density of 70 lbs/cu ft. A survey conducted by EPA before the December 1986 proposal showed that most landfill depths were less than 60 ft, and the maximum depth was 100 ft.

Commenters continued to raise concerns about the practicality of the revised LRT noticed in October 1991, about perceived technical flaws with the test, and about the test's performance relative to the Painter Filter Liquids Test (PFT). In response, EPA published a supplemental notice in May 1992 soliciting comment on whether the PFT should be used in lieu of the LRT to satisfy the statutory requirements of section 3004(c)(2).

The overwhelming majority of commenters on EPA's May 1, 1992 notice as well as on earlier notices supported use of the PFT over the LRT for all landfilled hazardous wastes, including containerized sorbed liquid wastes. The major reasons commenters gave for preferring the PFT were:
(1) Although the PFT does not involve compression of the sorbed waste, it nonetheless reasonably simulates whether liquids will be released under pressure. In fact, EPA's test data show that in the case of sorbed water-based wastes the PFT gave results that were more conservative than the LRT "pressure" test (i.e., samples failed the PFT at lower moisture contents than in samples that failed the LRT at 50 psi).

(2) The LRT does not work well for testing samples sorbed with Imbiber Beads (R) and similar sorbents. Such materials, which are compressible and elastic, tend to be extruded through the small openings in the LRT device, indicating failure. Such extrusions, however, are not releases of liquids and should not be so interpreted. This "false positive" problem does not exist with the PFT.

(3) The PFT has been required and used since June 1985, whereas commenters raised a number of technical questions with the LRT (e.g., reproducibility, sample size, sample preparation and placement, pressure amount, pressure application rate, test duration, temperature, and lack of test data on a number of sorbent/sorbate combinations).

(4) The PFT is a simpler test, more easily conducted, and simpler to clean up after (the LRT device is especially difficult and time consuming to clean after testing materials like Imbiber Beads (R), whereas the PFT

device is not); it involves a significantly cheaper testing process (equipment and labor); its use eliminates the need for facilities to stock two types of test apparatus for similar purposes and to train personnel in the use of the LRT; and its use avoids potentially significant delays in safe disposal of wastes, since the PFT set-up, test, and clean-up time (10-15 minutes/sample) is significantly less than the LRT (25-75 minutes/sample).

(5) Use of the PFT for containerized sorbed waste would result in consistent environmental performance testing of all materials going into a landfill (whether containerized or not, whether treated with sorbents or not) in terms of the potential for releasing liquids.

(6) The major source of liquids in landfills is precipitation; relative to this, the environmental significance of any difference between the PFT and the LRT is very small (even without consideration of the additional protection afforded by the land disposal restrictions and double liners/ leachate collection requirements for landfills).

Except for the technical questions raised in point (3) above, EPA agrees with these comments, concluding that the PFT is generally a more appropriate test than the LRT for the statutory purpose. By comparing the LRT test results to the PFT test results, EPA has been able to use the LRT to show that the PFT reasonably simulates and serves as a surrogate for a 50 psi pressure test for water-based wastes. Therefore, the additional cost, difficulty, and time for the LRT are unjustified.

At the same time, EPA disagrees that the LRT reproducibility/technical issues raised by the commenters (see 3 above) pose major problems, since sufficient test data exist either to justify the current specification or a modified specification. Further, in developing test methods, EPA need not test every possible matrix at every concentration/saturation level to demonstrate that the method is reproducible and valid. For the LRT, developmental and validation tests were performed on a set of sorbent/sorbate combinations spanning the array of materials expected to be subject to the test method. This is consistent with the approach EPA has taken in developing and validating other RCRA hazardous waste test methods.

The only concern with the PFT is its performance where oily-based wastes are the sorbates. Test data on oily-based sorbates show that the LRT is more conservative than the PFT for this category. EPA, however, notes that this issue is not particular to sorbed wastes. For all oily wastes--not merely sorbed oily wastes--there are wastes that may flow as a liquid but that do not filter within the 5 minute test and, therefore, are not defined as "liquids" under the PFT. Thus, this issue is beyond the scope of today's rulemaking. EPA recognizes that testing procedures for oily waste that can flow in the environment, whether sorbents have been added or not, may need to be improved. EPA is now studying this issue and is considering possible revisions of test procedures, which may be as simple as extending the duration of the PFT and/or using a pressure plate in the PFT for oily wastes.

At the same time, EPA recognizes that such improvements may be unnecessary or of low priority, given that land disposal of oily hazardous wastes is or will soon be strictly controlled by the land disposal restrictions.

For these reasons, EPA is today retaining the PFT, or Method 9095, as the test to be used to determine if liquids will be released from containerized sorbed wastes. This will simplify the proposed testing requirements since

the PFT is already required for all treated and nontreated, sorbed and nonsorbed, containerized and bulk wastes. That is, no wastes disposed in hazardous waste landfills can contain free liquids, as determined by the PFT. This approach provides equal treatment for all landfilled wastes. Also, by adopting the PFT instead of the LRT, the Agency does not have to address the special situation of various sorbent materials that cause problems in the LRT device (e.g., Imbiber Beads(R)). Since the PFT is already required, no changes to the existing regulations are needed for this requirement.

Chemical Fixation/Stabilization. Several commenters argued that chemically stabilized wastes should be exempted from the LRT, primarily because the device either is ruined or does not work well with these materials.
Commenters also argued that chemically fixed wastes should not be classified as sorbed wastes, even though some sorption might take place. Since EPA is not adopting the LRT, this issue is moot.

C. Biodegradability

Many commenters discussed EPA's proposals regarding how to define biodegradable sorbents, and suggested that EPA provide a combination of (1) lists or categories of acceptable and unacceptable sorbents, (2) tests that can be used to determine biodegradability, and (3) other criteria (e.g., environmental stability data). Commenters argued that a combination of options is needed because no one test or definition would be universally applicable (e.g., for inorganic materials with no carbon, the ASTM tests are not necessary), and a list alone would not be all inclusive. Commenters in particular discussed what tests and/or criteria EPA should establish, which sorbents EPA should list, when and by whom the different tests should be performed, and the number of tests that would be necessary.

"Biodegradation" is the process by which bacteria and fungi (microorganisms) consume (metabolize or decompose) an organic material.
Generally, materials that do not contain carbon, and inorganic materials that contain carbon, such as calcium carbonate ($CaCO_3$), are considered to be nonbiodegradable for the purposes of this rule. Commenters pointed out that biodegradation potential exists where a material contains organic carbon, but not all organic carbon is readily available to microorganisms. In fact, very little biodegradation, if any, occurs over periods of many years with some materials containing organic carbon. For example, commenters presented information demonstrating that high-molecular weight synthetic organic polymers such as high density polyethylene and polypropylene are nonbiodegradable. In addition, as EPA noted in its June 24, 1987 proposal, several laboratory tests have been used successfully to determine whether a material is biodegradable.

In response to public comments, today's rule allows two options, in Secs. 264.314(e) and 265.314(f), for defining nonbiodegradability. The rule (1) provides descriptions of classes of sorbent materials, and lists of sorbent materials as examples in each class, that are nonbiodegradable and therefore acceptable without further testing; and (2) provides two tests for sorbents not listed or not falling within one of the classes listed. A sorbent that passes either of these tests is nonbiodegradable and is therefore acceptable for landfill disposal in containers (providing, of course, that the sorbed waste passes the PFT).
Lists of Nonbiodegradable Material. In the first option, EPA has listed three classes of nonbiodegradable sorbent materials.

The first class consists of three types of materials: (1) Naturally occurring inorganic minerals (e.g., clay, diatomaceous earth), (2) man-made inorganic materials, which are often modified natural minerals (e.g., calcined montmorillonite, cement kiln dust, fly ash), and (3) elemental carbon (e.g., activated charcoal).

The second class comprises high molecular-weight synthetic organic polymers (e.g., high density polyethylene).

The third class is made up of mixtures of the nonbiodegradable sorbent materials within the first or second classes.

EPA has concluded that these materials are nonbiodegradable because (1) the inorganic minerals and other inorganic materials do not contain carbon, they contain only inorganic or elemental carbon, or they contain insignificant amounts of organic carbon, and (2) the high-molecular weight synthetic organic materials (i.e., polymers) have proved to be highly resistant to biodegradation.

EPA received numerous comments that synthetic polymeric materials, or specific polymers, should be excluded from the definition of biodegradable. While sorbents derived from natural polymeric materials such as cellulose and starch are generally readily biodegradable, by comparison, high molecular weight synthetic organic polymers generally resist biodegradation.

Biodegradability of synthetic polymers decreases as molecular weight increases. This is partly because the long chains of high molecular weight synthetic polymers tend to provide relatively few places for degradation to occur since microorganisms are generally only able to effectively attack at the ends of the chains. That is, the microbial enzymes are unable to break the backbone linkage of the long polymer chains into smaller molecules, attacking, instead, only the terminal ends and any amorphous parts of the polymer chains. Other characteristics of synthetic polymers thought to contribute to their resistance to biodegradation include: Many are hydrophobic or water repellant (microorganisms need water); they resist enzymatic attack because of their density, orientation, degree of crystallization, and bonding characteristics; and some contain antioxidants or biocidal additives. Whatever the mechanisms, test data and environmental experience show these synthetic polymers to be resistant to biodegradation.

Even where there is evidence that plasticizers and other additives to polymer products are degraded, the synthetic polymeric materials themselves generally are not degraded. EPA is aware of research efforts to develop biodegradable polymers and to enhance biodegradation of synthetic polymers. In most cases, this effort has been based on biopolymers, or materials of biological origin, e.g., cellophane. These materials are explicitly excluded from the definition of nonbiodegradable in today's rule. Also included in the final rule is a restriction that the synthetic polymers not be specifically designed to biodegrade, since plastics can be designed to be relatively biodegradable by adding prooxidants, biodegradable additives (e.g., starch), and other additives that help initiate chemical degradation which make the polymers more susceptible to biological attack.

EPA has also included in today's rule the stipulation that only "high molecular weight" polymers be classified automatically as nonbiodegradable. Low molecular weight polymers--e.g., with average molecular weights of less than a few thousand--may in certain circumstances be biodegradable.

While such materials are generally not suitable as sorbents because of their physical properties, EPA nonetheless believes that they should be excluded from the classification in today's rule. At the same time, EPA does not believe it is necessary or appropriate to draw a specific line defining "high" molecular weight. Effective polymeric sorbents currently in use today generally have molecular weights in the 10's or 100's of thousands, or even in the millions. These are clearly high molecular weights. Below these levels, as polymers approach the low 1000's in molecular weight, professional judgment must come into play in assessing a substance's degradability.

For each category of acceptable sorbents, EPA has listed specific examples in the rule. The materials listed as examples in the rule are not intended to be all-inclusive, but merely to exemplify and help clarify the classes of acceptable sorbents. EPA recognizes that some of the examples are generic (e.g., clays, smectites) that include a number of materials, some of which are also listed separately; that some of the terms are to a certain extent redundant or overlapping; and that some are very specific chemicals. The materials cited are types of nonbiodegradable materials most commonly used as sorbents and most frequently referred to in the public comments and literature. This use of lists, the examples listed, and the classes described, are consistent with the legislative history, which states: "Examples of absorbents that are likely to be found to be acceptable (for both nonbiodegradation and pressure stability reasons) are the chemical reagents discussed above (cement- or lime-based materials, pozzolanic materials, and thermoplastic or organic binders) and fine-grained earthen materials (e.g., bentonite, montmorillionite (sic), kaolinite, and Fuller's earth)" (July 25, 1984, Congressional Record--Senate, S9177).

EPA has not attempted to define or list biodegradable, or unacceptable, sorbent materials in the rule. Since the Agency has defined nonbiodegradable material, it believes that defining biodegradable materials would be redundant. However, EPA notes that certain materials are well known to be biodegradable and would not be acceptable under today's rule. For example, cellulosic or biosynthesized materials are clearly biodegradable (e.g., sawdust, wood fiber or pulp, shredded paper, straw, ground corncobs, ground peanut hulls, municipal waste). These materials do not fall into any of the acceptable categories of sorbents, and they would clearly fail any test of nonbiodegradability. Consequently, they may not be used to sorb liquids in wastes which are subsequently disposed of in a landfill (except as noted below). This is consistent with the legislative history of section 3004(c), which listed sawdust, municipal waste, and shredded paper as examples of biodegradable sorbents, and therefore unacceptable (ibid). These biodegradable sorbents may, however, be used to sorb liquids in wastes which are then treated in accordance with RCRA treatment standards. In this case, the residual may be landfilled, provided it meets all applicable requirements, e.g., it is no longer a liquid. For example, wastes mixed with biodegradable sorbents may be incinerated and then the residual or ash, which is no longer liquid, no longer sorbed waste, and no longer biodegradable, may be landfilled.

EPA recognizes that some inorganic materials or elemental carbon could contain some level of organic carbon. EPA does not intend that these materials necessarily be classified as biodegradable or necessarily be required to be tested for biodegradability. At the same time, EPA wants to make it clear that inorganic materials are considered to be biodegradable if they have been mixed with significant amounts of biodegradable materials

(e.g., with sawdust or ground corncobs), or if they are significantly "contaminated" with organic soils or materials.

In today's rule, EPA has not attempted specifically to define the degree of "contamination" or mixing that would render an inorganic, carbon, or synthetic organic polymeric material ineligible. Commenters, however, provided a significant amount of information on total organic carbon content of materials generally recognized as nonbiodegradable. For example, rice hull ash generally contains 2-6% total organic carbon; fly ash suitable as a sorbent or stabilizer may contain 2-8%. EPA, therefore, concludes that sorbents otherwise meeting the criteria of today's rule should not be excluded or require testing because of organic carbon content within these ranges. For mixtures above these ranges (i.e., above 8%), the mixture sorbent would have to be tested or demonstrated that it is nonbiodegradable.

Tests of Biodegradable Material. In the second option, if a sorbent is not in a class listed in the regulations, then a test must be conducted or a demonstration made. The tests/demonstrations are: (1) The sorbent material is shown to be nonbiodegradable using ASTM Method G21-70 (1984a)--Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or (2) the sorbent material is shown to be nonbiodegradable using ASTM Method G22-76 (1984b)--Standard Practice for Determining Resistance of Plastics to Bacteria.

The ASTM tests, identified in EPA's June 24, 1987 proposal, are already required by the U.S. Nuclear Regulatory Commission for radioactive wastes to prove their resistance to biodegradation. The ASTM tests are 21-day tests, using specific bacteria and fungi cultures. After the 21-day incubation period, the test material is inspected for growth, which is evidence of biological activity and an indication of biodegradation. Although commenters supported use of these tests, at least one commenter warned of the possibility of false positives (i.e., a nonbiodegradable material might show up in the test as biodegradation). EPA agrees that this is possible. In these cases, the additional ASTM chemical, electrical, and physical tests regarding structural changes listed in the bacterial and fungal test methods can be used to determine whether there is indeed biodegradation or not; or the tests can be rerun.

In the December 24, 1986 notice, EPA proposed to define biodegradability on the basis of total organic carbon content, and the Agency suggested that use of the modified Mebius procedure to determine that content (Page, A.L., ed., 1982, Methods of Soil Analysis, Part 2, Chemical and Microbial Properties, Second Edition, No. 9, Part 2, American Society of Agronomy, Inc. Madison).

Commenters were generally opposed to this approach, in part because EPA's proposed TOC level (1%) would eliminate many high-performing sorbents (e.g., pozzolanic materials and synthetic polymers), and in part because of technical issues related to the appropriateness of the test (e.g., it does not distinguish between elemental carbon and organic carbon). Therefore, EPA has not included in today's rule a TOC criterion. Nevertheless, EPA notes that the modified Mebius test might be used to demonstrate that a material fits on the list as an inorganic with less than 8% TOC i.e., that it is acceptable as a sorbent under Secs. 264.314(e)(1)(i) and 265.314(f)(1)(i).

Alternative Demonstrations/Tests of Biodegradability. A number of commenters encouraged EPA to accept alternative tests, or engineering judgment in addition to the identified tests. EPA agrees that other tests exist, but has decided to limit the final rule to those tests EPA proposed since specific alternatives were not discussed. Also, some flexibility for engineering judgment has been provided in the lists and descriptions in Secs.
264.314(e)(1) and 265.314(f)(1). Therefore, EPA has not gathered and reviewed data on other tests and proposed them for inclusion in today's rule. Instead, EPA decided to require that such demonstrations be made under the already established Part 260 petition process.

D. Spill Cleanups

Numerous commenters recommended that EPA exempt (from the biodegradability and liquids release requirements in the proposed rule) sorbents used in emergency spill cleanups. One commenter, however, suggested exempting only sorbents used for true emergency spills, as contrasted to routine spills at locations where sorbents are (or should be) routinely stockpiled. The basis of this commenter's suggestions was that sorbents that meet the proposed LRT and nonbiodegration criteria are readily available on this market and therefore should be used where a spill can be expected. The commenter, however, also suggested exempting from the LRT the hydrophobic sorbents that are used to clean up oil spills on water, because sorbents currently available for oil spills on water do not meet the proposed criteria.

In today's rule EPA has not provided an exemption for either routine spills or emergencies. Most of the commenters supporting an exemption for emergencies argued that the LRT duration could cause delays and disrupt proper cleanups. Also, commenters were concerned that many sorbents commonly used in cleanups (e.g., Imbiber Beads(R) and sorbent pillows) cannot be effectively tested in the LRT, and might not meet EPA's definition of nonbiodegradability (as originally proposed). Today's rule, however, requires the simpler and faster PFT, which is already required and should not cause such delays. Furthermore, Imbiber Beads(R) and similar materials would generally qualify as nonbiodegradable under today's rule, as they are made of high-molecular-weight synthetic polymers. EPA, therefore, agrees with the commenter that an exemption should not be provided for routine spill situations, where sorbents are stockpiled, since response teams can stockpile and use nonbiodegradable sorbents. Furthermore, EPA believes that a special exemption for "emergency" spill cleanups is inappropriate. In the first place, EPA notes that a wide range of sorbents acceptable under today's rules--including most now commonly in use--are available for emergency spill cleanups. In the second place, it is not clear that the statute provides EPA the authority to exempt certain sorbents from the requirements of Sec.
3004(c)(2), and in any case an exemption for certain (but not all) cleanup situations would be difficult to implement and enforce.

EPA, however, emphasizes that today's rule does not prohibit the use of biodegradable sorbents (e.g., sawdust, corn cobs, etc.) in spill cleanups. In fact, many commenters pointed out that such materials have an important role in cleanups, particularly where sorbed wastes will be recycled or incinerated. The rule, instead, merely prohibits landfilling of such wastes after the cleanup; incineration, recycling, or other treatment, would remain as options. In fact, direct landfilling of these wastes would

already be prohibited, in most cases, by the land disposal restrictions. Therefore, today's rule is unlikely to have significant effect on cleanups.

One commenter asked EPA to clarify that contaminated soils cleaned up during a spill response would not be subject to today's rule affecting sorbents. EPA agrees that contaminated soils are not subject to today's rule.

The rule covers sorbents added to liquid hazardous wastes for the purpose of solidifying or stabilizing the wastes. For contaminated soils, the situation is different. The soils are not added to wastes to eliminate liquids; rather, the contaminated soil is, in effect, the waste as it was generated. Thus, the soil is not a sorbent, and the question of its biodegradability does not arise. Landfilling of the soil, however, would of course remain subject to the land disposal restrictions.

E. Sorbent Pillows

Commenters on the December 24, 1986 proposal argued that EPA should exempt sorbent pillows used to control spills and leaks, primarily so that LRT testing would not impede such efforts because of the difficulties in getting representative samples and time delays to do the testing. In the June 24, 1987 supplemental notice, EPA proposed to exempt sorbent pillows used to control spills or leaks, including socks, wipes, and rags, in a manner similar to lab packs. Under this proposal, the sorbent pillows would have to be nonbiodegradable, be surrounded by enough additional unused nonbiodegradable sorbent material to sorb any releases, and be placed in certain specified containers of 110 gallon capacity or less. Further, the sorbent pillows would still need to pass the PFT and only sorbent pillows could be placed in the same container.

Since the PFT rather than the LRT is required in today's rule, the exemption for sorbent pillows from the LRT is no longer needed. In fact, the proposed exemption, imposing the lab pack requirements in lieu of the LRT, would not be more restrictive than the approach in today's rule. Imposing the lab pack requirements would now treat sorbent pillows more stringently than other sorbed wastes, would complicate remediations, would add to the waste volume to be disposed, would be vague (how much additional sorbent is enough) and difficult to enforce, and would be generally unnecessary, given the land disposal restrictions requirements. Therefore, the Agency is not providing an exemption for sorbent pillows in today's rule.

Commenters also raised questions about the status of rags and wipes. After reviewing the descriptions and examples given in the legislative history, EPA has concluded that rags and wipes are not the types of materials Congress had in mind and should not be considered to be sorbents in the context of today's rule. In discussing sorbent materials Congress did not include rags and wipes nor materials that rags or wipes are made from in the lists of sorbent materials Congress anticipates EPA will find to be acceptable and unacceptable. The legislative history lists sawdust, municipal waste, shredded paper, and certain vermiculites as unacceptable sorbents, and chemical reagents (cement- or lime-based materials, pozzolanic materials, and thermoplastic or organic binders) and fine-grained materials (e.g., bentonite, montmorillonite, kaolinite, and Fuller's Earth). All of these materials are used to treat large quantities of liquids or to soak up relatively large quantities of spills. Rags and wipes on the other hand are used to clean off soiled or wet surfaces. Thus,

today's rule does not change the regulatory treatment under Subtitle C of rags and wipes used in the traditional manner; however, if rags and wipes are used like sorbents, e.g., by putting them in a drum to soak up free-standing liquids, then they need to comply with the nonbiodegradability requirements.

F. Lab Packs and Other Exemptions

The current rules exempt lab packs, very small containers such as ampules, and products that contain liquids for uses other than storage (e.g., batteries) from the liquids in landfills prohibition. These exemptions are consistent with the "minimize liquids in containers" language in the statute, and they are supported by the legislative history. Lab packs are small containers of liquids (typically of one gallon or less), most commonly used for laboratory wastes, that are placed in a drum and surrounded by sufficient sorbent material to sorb the liquids should the containers fail. EPA agrees with the commenters who said the rules should continue to allow the lab pack, ampule, and product container exemptions, with the exception that the rules should be revised to require that lab pack sorbents be nonbiodegradable, for the same reasons that liquids in containers should be sorbed with nonbiodegradable sorbents. Nonbiodegradable sorbents will not degrade, and therefore will not help to produce subsidence and release of liquids when the drums fail. Lab packs are planned management activities in which it is practical to use nonbiodegradable sorbents, and a wide variety of such sorbents are readily available.

G. Waste Analysis and Recordkeeping

In its December 24, 1986 notice, EPA proposed to amend the waste analysis section (Secs. 264.13(b)(6) and 265.13(b)(6)) and the recordkeeping sections (Secs. 264.73(b)(3) and 265.73(b)(3)) to add references to the specific paragraphs within Secs. 264.314 or 265.314 that contain the PFT and the proposed LRT and TOC test requirements. EPA also proposed that a landfill facility's waste analysis plan include procedures that the owner/operator of an offsite landfill will use to determine whether a generator added a biodegradable sorbent to containerized hazardous waste (Secs. 264.13(c)(3) and 265.13(c)(3)).

EPA received numerous comments on these requirements, many addressing the broader issue of who is responsible for waste analysis. In particular, commenters expressed concern that EPA was requiring duplicative testing on the part of landfill owner/operators, and that the responsibility for testing should fall on the generator, the treater, or the sorbent manufacturer rather than the landfill owner/operator. A number of commenters, for example, recommended that EPA require sorbent manufacturers to certify that a sorbent is nonbiodegradable, and that the manifest should be amended to require that the certification be attached.

EPA understands the concerns of the commenters, but it believes that the rule as proposed is sufficiently flexible to accommodate them. Therefore, in today's rule EPA has made only limited changes to the proposal.

First, EPA has eliminated the proposed language added to Secs. 264.13(b)(6), 265.13(b)(6), 264.73(b)(3), and 265.73(b)(3) because these

already refer to Secs. 264.314 or 265.314. It is not necessary to identify the specific paragraphs in these sections that refer to the PFT and the biodegradation standards.

Second, EPA has retained the proposed requirements of Secs. 264.13(c)(3) and 265.13(c)(3) for off-site landfills, with slight rewording to clarify that off-site treaters as well as generators may be adding sorbents. These sections ensure that commercial off-site landfill owner/operators specify in their Waste Analysis Plans the procedures they plan to use to assure compliance.

In response to the commenters described above, EPA emphasizes the flexibility of its approach toward biodegradability in today's rule. The rule does not prescribe how a landfill owner/operator must verify that sorbents are nonbiodegradable--only that the Waste Analysis Plan describe the procedures the landfill owner/operator will use to determine compliance. For on-site disposal, this requirement will be easy to meet. For off-site disposal, EPA expects that the landfill operator will generally rely on information provided by the generator or treater. For example, a landfill operator might require generator notification where sorbents have been used, and certifications that the specific sorbent used meets the criteria of Secs.

264.314(e) or 265.314(f), along with confirmatory data. EPA generally believes such an approach would be appropriate and sufficient. Consistent with today's rule, however, EPA believes that the specific procedures are best addressed on a site-by-site basis. Today's rule provides the flexibility for such an approach.

H. Free-Standing Liquids

Section 264.314(d) states: "Containers holding free liquids must not be placed in a landfill unless: (1) All free-standing liquid: (i) Has been removed by decanting, or other methods; (ii) has been mixed with absorbent or solidified so that free-standing liquid is no longer observed; or (iii) has been otherwise eliminated" (emphasis added). The same requirement appears in Sec. 265.314(c). Sections 264.314(c) and 265.314(d) state that "To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095 (Paint Filter Liquids Test)" (emphasis added).

In the December 24, 1986, proposal, EPA stated that it saw an inconsistency between these two requirements--on the one hand, containerized wastes containing free liquids could be placed in a landfill, if the liquids were removed (e.g., decanted, Sec. 264.314(d)), and on the other hand, containerized wastes containing free liquids (as defined by the Paint Filter Test) were prohibited from placement in a landfill (Sec. 264.314(c)).

Consequently, EPA proposed to delete Secs. 264.314(d)(1) and 265.314(c)(1), making it clear that wastes placed in landfills cannot contain free liquids, as defined by the PFT.

No comments were received on this proposal. However, after reexamining the regulations, EPA has reached the conclusion that they are not inconsistent. Instead, the regulations spell out two different requirements: (1) That landfilled wastes meet the PFT, and (2) that free-standing liquids in containerized wastes be decanted or otherwise eliminated before land disposal. Containerized wastes must meet both

requirements. EPA sees no reason to modify or eliminate the independent prohibition on free-standing liquids, on the grounds that it is inconsistent or redundant. In fact, EPA has found the requirement a useful enforcement tool, and has no evidence that the regulated community has been confused by it. Therefore, EPA has decided not to finalize the proposed change.

I. Implementation

As discussed in Section V.A. of this preamble, today's rule is promulgated under the authority of the Hazardous and Solid Waste Amendments (HSWA). Therefore, it will become effective in RCRA-authorized and nonauthorized States six months from the publication of this notice.

Interim status facilities will be subject to today's rule on its effective date. Therefore, these facilities should modify their waste analysis plans and procedures appropriately by that date. On the other hand, under EPA's regulations, RCRA permits generally provide a shield against new regulatory requirements (Sec. 270.4). Therefore, permitted facilities may continue to operate under their existing permits (and their waste analysis plans) until EPA modifies the permit in accordance with Sec. 270.41 or as part of a 5-year land disposal permit review, or until the permit terminates and a new permit is issued.

V. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program in lieu of EPA's administering the Federal program in that State. EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law and was authorized for the requirements.

In contrast, under RCRA section 3006(g), new requirements imposed by HSWA take effect in authorized States at the same time that they take effect in non-authorized States. EPA is directed to carry out these requirements in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-based provisions as State law to retain authorization, the HSWA-based requirements apply in authorized States in the interim.

Today's final rule for containerized liquids in landfills is issued under RCRA section 3004(c), which was added by HSWA. These HSWA-based

requirements are being added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and take effect in all States, regardless of their authorization status. As noted above, EPA will implement these HSWA-based sections in today's rule in authorized States until the State programs are modified to adopt these rules and the modification is approved by EPA. Because these requirements are finalized pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of State requirements that are equivalent or substantially equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. The deadline by which the States must modify their programs to adopt today's rule is (July 1, 1994).

B. Effect on State Authorizations

Section 40 CFR 271.21(e)(2) requires States that have final authorization to modify their programs to reflect Federal program changes and to submit the modification to EPA for approval. The deadline by which the State must modify its program to adopt this regulation is determined by the promulgation date in accordance with 40 CFR 271.21(e). These deadlines can be extended in certain cases (40 CFR 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

Authorized States are only required to modify their programs when EPA promulgates Federal regulations that are more stringent or broader in scope than the existing Federal regulations. For Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. This is a result of RCRA section 3009, which allows States to impose regulations in addition to those in the Federal program. EPA has determined that today's containerized liquids in landfills rule is more stringent than the current Federal regulations. Therefore, authorized States are required to modify their programs if needed to adopt regulations that are equivalent or substantially equivalent to today rule.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modification is approved. Of course, States with existing standards may continue to administer and enforce their standards as a matter of State law.

In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application.

States that submit official applications for final authorization 12 months or more after the effective date of these regulations must include standards equivalent to these regulations in their application. The

requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

VI. Regulatory Requirements

A. Economic Impact Analysis

Executive Order 12291 (Section 3(b)) requires regulatory agencies to prepare Regulatory Impact Analyses for all "major" rules. Today's rule is not a major rule because it will not result in: an annual effect on the economy of $100 million or more; a major increase in costs or prices for consumers, individual industries, Federal, State, and local government agencies, or geographic regions; or significant adverse effects on competition, employment, investment, productivity, innovation, or international trade.
Therefore, the Agency has not prepared a Regulatory Impact Analysis for today's rule.

EPA did, however, review costs associated with this rule in "Economic Impact Analysis of Liquids in Landfills Rule Regarding Containerized Sorbents." The total additional annualized costs of implementing this rule are estimated to be under $1 million. The implementation costs are minimal because hazardous waste landfills must already use the Paint Filter Test (for all wastes, not just sorbed wastes), and most sorbents currently in use need not be tested for biodegradability because they are clearly identified as acceptable on the nonbiodegradables lists in the rule or as unacceptable on the biodegradables list provided as guidance in the preamble. The rest need be tested only once per sorbent type for nonbiodegradability (it is the sorbents that are tested for biodegradation, not the wastes). For those sorbents that are currently used that are unacceptable, there are readily available sorbents of comparable costs and efficiencies so that the economic impact of such substitutions are minimal.

This rule has been reviewed by the Office of Management and Budget in accordance with Executive Order 12291.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980 (5 U.S.C. 601 et seq.) requires Federal regulatory agencies to prepare a Regulatory Flexibility Analysis (RFA) for all regulations that have "a significant economic impact on a substantial number of small entities." Today's rule, as EPA's economic analysis indicates, will involve only a trivial increase in costs for regulated industry. Therefore, EPA certifies that today's regulation will not have a significant economic impact on a substantial number of small entities.
As a result, no Regulatory Flexibility Analysis is needed.

C. Paperwork Reduction Act

The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and have been assigned control number 2050-0125.

The public reporting burden for this collection of information is estimated to average 3.6 hours per response for the first year and 0.8 hours per response in subsequent years. This burden includes time for reviewing the regulations, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223Y, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Jonathan Gledhill".

VII. Supporting Documents

The following document has been prepared in support of this rulemaking and placed in docket F-92-CLLF-FFFFF.

"Economic Impact Analysis of Liquids in Landfills Rule Regarding Containerized Sorbents," EPA, October 23, 1992.

List of Subjects

40 CFR Part 260

Administrative practice and procedure, Confidential business information, Hazardous waste.

40 CFR Part 264

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds.

40 CFR Part 265

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds, Water supply.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indian lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: October 30, 1992.

William K. Reilly,
Administrator.

For the reasons set forth in the preamble, 40 CFR parts 260, 264, 265, and 271 are amended as follows.

PART 260--HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

2. Section 260.10 is amended by adding the definition of "sorbent" in alphabetical order, to read as follows:

Sec. 260.10 Definitions

* * * * *

Sorbent means a material that is used to soak up free liquids by either adsorption or absorption, or both. Sorb means to either adsorb or absorb, or both.

* * * * *

PART 264--STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. Section 264.13 is amended by adding paragraph (c)(3) to read as follows:

Sec. 264.13 General waste analysis.

* * * * *

(c) * * *

(3) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

* * * * *

3. Section 264.314 is amended by redesignating paragraph (e) as (f), revising paragraphs (a)(2), (b), and (d)(1)(ii), and adding new paragraph (e) to read as follows:

Sec. 264.314 Special requirements for bulk and containerized liquids.

(a) * * *

(2) Before disposal, the liquid waste or waste containing free liquids is

treated or stabilized, chemically or physically (e.g., by mixing with a sorbent solid), so that free liquids are no longer present.

(b) Effective May 8, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

* * * * *

(d) * * *
(1) * * *
(ii) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or
* * * * *

(e) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in paragraph (e)(1) of this section; materials that pass one of the tests in paragraph (e)(2) of this section; or materials that are determined by EPA to be nonbiodegradable through the part 260 petition process.

(1) Nonbiodegradable sorbents. (i) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/ activated carbon); or
(ii) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross- linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or
(iii) Mixtures of these nonbiodegradable materials.
(2) Tests for nonbiodegradable sorbents. (i) The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a)--Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(ii) The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b)--Standard Practice for Determining Resistance of Plastics to Bacteria.

4. Section 264.316 is amended by revising paragraphs (b) and (c) to read as follows:

Sec. 264.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs).

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with Sec. 264.314(e), to completely sorb all

of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.

(c) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with Sec. 264.17(b).

* * * * *

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for Part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, 6935, and 6936.

2. Section 265.13 is amended by adding paragraph (c)(3) to read as follows:

Sec. 265.13 General waste analysis.

* * * * *

(c) * * *
(3) The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

* * * * *

3. Section 265.314 is amended by redesignating paragraph (f) as (g), revising paragraphs (a)(2), (b), and (c)(1)(ii), and adding new paragraph (f) to read as follows:

Sec. 265.314 Special requirements for bulk and containerized liquids.

(a) * * *
(2) Before disposal, the liquid waste or waste containing free liquids is treated or stabilized, chemically or physically (e.g., by mixing with a sorbent solid), so that free liquids are no longer present.

(b) Effective May 8, 1985, the placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(c) * * *
(1) * * *
(ii) has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or
* * * * *

(f) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed

or described in paragraph (f)(1) of this section; materials that pass one of the tests in paragraph (f)(2) of this section; or materials that are determined by EPA to be nonbiodegradable through the Part 260 petition process.

(1) Nonbiodegradable sorbents. (i) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/ activated carbon); or

(ii) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polysobutylene, ground synthetic rubber, cross- linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(iii) Mixtures of these nonbiodegradable materials.

(2) Tests for nonbiodegradable sorbents. (i) The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a)--Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(ii) The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b)--Standard Practice for Determining Resistance of Plastics to Bacteria.

* * * * *

4. Section 265.316 is amended by revising paragraphs (b) and (c) to read as follows:

Sec. 265.316 Disposal of small containers of hazardous waste in overpacked drums (lab packs).

* * * * *

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR parts 178 and 179) of no more than 416-liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with Sec. 265.314(f), to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after it has been packed with inside containers and sorbent material.

(c) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside container's in accordance with Sec. 265.17(b).

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

1. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a) and 6926.

2. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication:

Sec. 271.1 Purpose and scope.

* * * * *

Table 1.--Regulations Implementing the Hazardous and Solid Waste Amendments of 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* * * * * * *			
Nov. 18, 1992	Containerized Liquids in Landfills	57 FR (Insert Federal Register page numbers)	May 18, 1992.

(FR Doc. 92-27289 Filed 11-17-92; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 3004 3006 3008 7003 3013 3009 1006 2002 3001 3002 3003 3005 3007 3010 3014 7004 3015 3016 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-463 SEC. 7 -- Used Oil Recycling Act of 1980
Pub. Law 96-482 SEC. 17 -- Solid Waste Disposal Act Amendments of 1980
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-616 SEC. 201 244 -- Hazardous and Solid Waste Amendments of 1984

DIALOG(R)File 180:Federal Register

Hazardous Waste Management System: Land Disposal Restrictions; Renewal of the Hazardous Debris Case-By-Case Capacity Variance and Renewal of Variance

Volume: 58 Issue: 92 Page: 28506
CITATION NUMBER: 58 FR 28506
Date: FRIDAY, MAY 14, 1993

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 268
NUMBERS: FRL-4655-1
DATES: Effective: 19930508
CONTACT INFORMATION: RCRA Hotline, 800-424-9346, 703-412-9810; Nicholas Vizzone, 703-308-8477
ACTION: Final rule
INTERNAL DATA: (FR Doc. 93-11322 Filed 5-13-93; 8:45 am)
Word Count: 4194

SUMMARY: On May 8, 1992, EPA granted a one-year case-by-case capacity variance of the Land Disposal Restrictions (LDR) to persons managing certain hazardous debris (see 57 FR 20766, May 15, 1992). In that document, EPA indicated that persons desiring a subsequent renewal of the variance--that is, past May 8, 1993--would need to submit an individual application. EPA has received almost 200 applications to date. Confirmed by a capacity analysis conducted by EPA, the large number of applications indicates that a lack of treatment capacity for hazardous debris continues to exist.

Therefore under 40 CFR 268.5, EPA is hereby renewing the extension of the case-by-case capacity variance to May 8, 1994, for all persons managing certain hazardous debris in lieu of responding to the individual applications. (Elsewhere this document explains more fully which hazardous debris is covered by the extension.) No further individual applications will be required from persons granted the extension by this action. However, information provided to EPA indicates that some capacity may exist, at least for some forms of debris. Therefore, EPA is requiring that generators submit a report demonstrating a good-faith effort to locate treatment capacity to qualify for the extension.

EPA wishes to make clear that no further variance or extension of the LDR effective date for hazardous debris can be given after May 8, 1994. By statute, EPA may extend the LDR effective date for a waste for a total of four years, two years by national capacity variance and up to two years for a case-by-case variance. With this renewal, the four years of statutory variance time for hazardous debris will end on May 8, 1994, and therefore no further extensions can be granted.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

(FRL-4655-1)

Hazardous Waste Management System: Land Disposal Restrictions; Renewal of

the Hazardous Debris Case-By-Case Capacity Variance and Renewal of Variance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: On May 8, 1992, EPA granted a one-year case-by-case capacity variance of the Land Disposal Restrictions (LDR) to persons managing certain hazardous debris (see 57 FR 20766, May 15, 1992). In that document, EPA indicated that persons desiring a subsequent renewal of the variance--that is, past May 8, 1993--would need to submit an individual application. EPA has received almost 200 applications to date. Confirmed by a capacity analysis conducted by EPA, the large number of applications indicates that a lack of treatment capacity for hazardous debris continues to exist.

Therefore under 40 CFR 268.5, EPA is hereby renewing the extension of the case-by-case capacity variance to May 8, 1994, for all persons managing certain hazardous debris in lieu of responding to the individual applications. (Elsewhere this document explains more fully which hazardous debris is covered by the extension.) No further individual applications will be required from persons granted the extension by this action. However, information provided to EPA indicates that some capacity may exist, at least for some forms of debris. Therefore, EPA is requiring that generators submit a report demonstrating a good-faith effort to locate treatment capacity to qualify for the extension.

EPA wishes to make clear that no further variance or extension of the LDR effective date for hazardous debris can be given after May 8, 1994. By statute, EPA may extend the LDR effective date for a waste for a total of four years, two years by national capacity variance and up to two years for a case-by-case variance. With this renewal, the four years of statutory variance time for hazardous debris will end on May 8, 1994, and therefore no further extensions can be granted.

EFFECTIVE DATE: This rule and the extension become effective on May 8, 1993.

ADDRESSES: The official record for this notice is identified as Docket Numbe F-93-DCVN-FFFFF, and is located in the EPA RCRA Docket, room 2427, U.S.
Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. The docket is open from 9 a.m. to 4 p.m., Monday through Friday, except on Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.20 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424-9346 toll-free or (703) 412-9810 locally. For information on specific aspects of this notice, contact Nicholas R. Vizzone, Analysis and Land Disposal Restrictions Section, Capacity Programs Branch (OS-321W), Office of Solid Waste, U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, (703) 308-8477.

SUPPLEMENTARY INFORMATION:

Outline

I. Background

A. History

Congress enacted the Hazardous and Solid Waste Amendments (HSWA) of 1984, which amended the Resource Conservation and Recovery Act (RCRA). Among other things, HSWA required EPA to develop regulations that would impose, on a phased schedule, restrictions on the land disposal of hazardous wastes. In particular, sections 3004(d), (e), and (g) of RCRA (42 USC 6924 (e), and (g)) prohibit the land disposal of all wastes identified or listed as hazardous as of November 1984, unless the wastes are treated (or meet treatment standards) in a manner that "substantially diminish(es) the toxicity of the waste or substantially reduce(s) the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized." The alternative to satisfying these treatment standards is disposal in a unit from which there will be no migration of hazardous constituents for as long as the waste remains hazardous.

In developing such a broad program, Congress recognized that adequate alternative treatment, recovery, or protective disposal capacity might not be available by the applicable effective dates. Therefore, section 3004(h)(2) authorized EPA to grant a national capacity variance (based on the earliest date that such capacity would be available but not to exceed two years) that delays the effective date for new treatment standards. In addition, under section 3004(h)(3), EPA can grant an extension of the deadline on a case-by- case basis for one year (renewable for one additional year); however, variances and extensions are limited to a four year total time period from the effective date.

On June 1, 1990, EPA published a final rule (55 FR 22520) establishing prohibitions and treatment standards for wastes in the final third of the scheduled prohibitions. Among other things, the rule established prohibitions and treatment standards for debris contaminated with all hazardous wastes subject to the LDRs (except for the solvent and dioxin wastes covered by section 3004(e) and California List wastes prohibited under section 3004(d)).

Because of a lack of treatment capacity in 1990, EPA granted a two-year national capacity variance that expired on May 8, 1992 (40 CFR part 268.35

(e)). This variance included, not only debris for Third Third wastes, but also debris for First Third and Second Third wastes that had been deferred to the Third Third rule (see 55 FR 22649). EPA stated that it was not the intent of the Agency to penalize generators of First Third and Second Third wastes by allowing less time (i.e., 28 months and 37 months, respectively) for the development of needed capacity, while generators of Third Third wastes in the same treatability group were allowed the maximum 48 months. Therefore, the capacity extension that became effective on May 8, 1990 included First, Second and Third Third wastes. Then on May 8, 1992, EPA, citing a continuing lack of treatment capacity for the same debris wastes addressed in the May 8, 1990, extension, as well as other factors, granted a one-year case-by-case capacity variance of the LDR effective date for most hazardous debris that expires on May 8, 1993.

B. Revised Treatment Standards for Hazardous Debris

The Third Third final rule stated that debris contaminated with a listed waste was subject to the same treatment standards as for the contaminating waste. However, EPA also stated in the preamble that problems did exist with regulating hazardous wastes in debris matrices that could make it difficult for hazardous debris to meet those treatment standards. Therefore, EPA indicated in the Third Third rule that treatment standards specific to hazardous debris would be promulgated in a separate rulemaking.

On January 9, 1992, EPA published proposed treatment standards for hazardous debris. Among other things, comments received on this proposed rule indicated that there would be inadequate capacity for hazardous debris as of May 8, 1992. The shortfall in treatment capacity coupled with the fact that the final rule for the hazardous debris treatment standards would not be promulgated by May 8, created the need for an extension of the effective date for hazardous debris. (The final hazardous debris rule was published in the Federal Register on August 18, 1992, (see FR 57 37194-37282) and was effective on November 16, 1992.)

The hazardous debris capacity variance required that any facility desiring a further extension of the variance to May 8, 1994, would be required to submit an individual application before November 8, 1992. At that time, EPA anticipated that by May 1993, treatment capacity, in compliance with the new hazardous debris treatment standards, would generally be in place, or that generators could obtain contracts for future capacity still under construction. However, EPA has received almost 200 case-by-case applications from generators for renewal of the extension. The applicants have all stated that treatment capacity in compliance with the August 18, 1992, debris rule is still lacking, and that the length of time to permit these treatment and storage units are preventing them from providing the necessary treatment capacity to be in compliance with LDR restrictions. This has resulted in a continuing capacity shortfall. A capacity analysis conducted by EPA has shown that a general lack of treatment capacity for hazardous debris does exist.

(The results of this analysis have been placed in the official record for this notice located in the EPA RCRA Docket.) In addition, the physical and chemical properties for debris from remediation projects is unknown; this information is necessary in order to evaluate the type(s) of available treatment processes and to estimate existing treatment capacity. It is also difficult with existing knowledge to determine which, if any type of preprocessing is necessary prior to treatment (for example, the amount and type of sizing equipment needed), along with the need and availability of

mechanical separation equipment to remove the debris from other contaminated media that may be generated with the debris during remediation. Additionally, the applicants have also stated that once permitting is complete, a construction and start-up period of 6-12 months will be necessary further delaying available capacity.

At the same time EPA has received a letter from the Hazardous Waste Treatment Council (HWTC), dated March 19, 1993, that discusses available treatment capacity for hazardous debris.1 The letter indicates that the HWTC believes that certain capacity is available for hazardous debris excluding debris wastes affected by permitting delays for treatment units, oversized debris requiring specialized size reduction equipment, or specialized materials handling/separation capabilities. The HWTC states that capacity exists for: (1) Small objects that are transportable in containers and do not require sizing prior to treatment (e.g. metal objects, paper and cloth, wood materials); (2) cyanide contaminated debris using chemical oxidation; and (3) debris sized so as to be easily treated in an existing tank or container systems. Treatment volumes were provided for managing cyanide contaminated debris using chemical oxidation technology and solids incineration capacity.

NOTE /1/ The Hazardous Waste Treatment Council is a national association that represents certain commercial hazardous treatment facility owners and operators. EPA notes that information on available commercial hazardous debris treatment facilities may be available from the HWTC. The address for HWTC is 915 15th Street, NW., Fifth Floor, Washington, DC 20005; Telephone (202) 783-0870; FAX Number (202) 737-2038.

Subsequent to that letter, HWTC provided additional information in a letter dated May 4, 1993 to EPA on hazardous waste treatment capacity. In particular HWTC stated that 300,000 tons/year of combustion treatment capacity exists for certain debris types (i.e., wood, cloth, PPE, rubber, plastic, etc.) contaminated with organics. In addition, 175,000 tons/year of chemical oxidation treatment capacity is available for debris contaminated with cyanide. Furthermore, HWTC stated that 320,000 tons/year of metals treatment capacity exists in the form of water washing and spraying, high pressure water washing, acid/alkaline solution extraction, chemical oxidation, chemical reduction, abrasive blasting and microencapsulation.

Based on the available knowledge of debris characteristics, it is difficult for EPA to project the amount of combustion or metals treatment capacity that will be necessary to treat currently generated debris because EPA only has very general information on the hazardous constituents that are in debris.

For example, the facilities that submitted applications for an extension did not provide detailed information on the types of hazardous constituents contaminating their debris; therefore, it is impossible to know whether the types of capacity that HWTC states is available could be used to treat such debris. Furthermore, the amount of hazardous debris treatment necessary is difficult to accurately estimate before the generation of debris from remediation projects because of uncertainty in knowing what actually will be generated. The volume of debris that the applicants anticipate generating could exceed the total capacity that HWTC believes to be available, depending upon the nature of the debris. EPA also believes that

it would be difficult to determine which debris could be treated in tanks and containers based on the physical size of the debris; therefore, EPA believes it would be inappropriate to limit the extension renewal based on the size of the debris, as HWTC suggested.

Thus, EPA's information indicates that there is still a general shortfall of capacity, although some treatment capacity is available for some kinds of debris. Because a shortfall appears unavoidable considering the large volumes of hazardous debris that will require treatment, EPA believes that a conditional one-year renewal of the hazardous debris case-by-case variance for all persons managing such debris is appropriate. However, as will be discussed in greater detail below generators will be expected to make a good faith effort to locate and use such treatment capacity as may be suitable for their debris.

As under the original extension, debris contaminated with the following wastes are not covered by this extension: (1) A listed solvent or dioxin waste covered by the section 3004 (e) prohibition, and (2) a non-liquid "California list" waste pursuant to section 3004 (d) because the statutory time for granting an extension for the wastes has elapsed.

EPA notes that the final rule establishing revised treatment standards for debris (see Fed. Reg. 37194 (Aug. 28, 1992)) defined debris to consist of solid material having a particle size of 60 mm or larger and intended for land disposal. This definition excluded process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges or air emissions residues. The excluded process residuals will, however, be included within the scope of today's renewal of the hazardous debris extension to the extent the residuals fall within the previously applicable definition of debris and are not excluded from the extension as indicated above.

C. Paperwork Reduction Act

The information collection requirements in this notice have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq and have been assigned OMB control number 2050-0085.

Public reporting burden for this collection of information is estimated to average 25 hours per response, including time for reviewing instructions, searching existing data sources, gathering the required data, and completing and reviewing the collection of information.

Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223Y, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Jonathan Gledhill."

II. Justification for This Extension

A. Demonstration Under 40 CFR 268.5

40 CFR 268.5 specifies seven demonstrations that must be made for the

approval of a case-by-case extension to a treatment standard of the prohibition effective date. From comments and information submitted, EPA has made an evaluation of these seven required demonstrations as follows:

Demonstration 40 CFR 268.5(a)(1): The applicant must demonstrate that he has made a good-faith effort to locate and contract with treatment, recovery, or disposal facilities nationwide to manage his waste in accordance with the effective date of the applicable restriction established under subpart C of this part.

The applicants indicated that they are unable at this time to locate and contract with treatment, recovery, or disposal facilities. Response letters from commercial sites submitted with the applications indicated that future plans to develop and construct treatment capacity exist but the length of time required to issue new permits or modifications of existing permits is delaying current construction of treatment capacity. Permits to allow construction of these new units have not been issued yet and may require additional time. Permitting and construction of many new debris treatment units will probably not be completed when the existing variance expires on May 8, 1993.

In addition, information received by EPA indicates a general lack of capacity for treatment of debris. For example, information from the 200 applicants indicates that from 1.2-1.8 million cubic meters of hazardous debris will be generated during the period of May 1993, to May 1994. The applicants indicating that capacity was unavailable did not generally distinguish between categories of debris, and in light of their submission, EPA is reluctant to assume that sufficient capacity does in fact exist for those wastes. In addition, EPA is not confident that the categories of debris for which capacity is most likely to exist can easily be identified.

At the same time, the information provided by HWTC does indicate that significant capacity may exist, at least for certain categories of debris.

Therefore, it is a condition of this extension that generators make a good faith effort to find treatment capacity, and if capacity is found, to use it to the fullest extent possible. Therefore, the extension will not apply to any wastes for which capacity is or becomes available. The report required under 40 CFR 268.5(g) will document each generator's good faith effort to locate capacity.

Demonstration 40 CFR 268.5(a)(2): The applicant has entered into a binding contractual commitment to construct or otherwise provide alternative treatment, recovery (e.g., recycling), or disposal capacity that meets the treatment standards specified in subpart D or, where treatment standards have not been specified, such capacity is protective of human health and the environment.

The applicants have shown that the availability of treatment technologies to meet the proposed treatment standards is limited and will require substantial capital investment to bring such technology on-line. EPA believes, however, that there will be no ultimate difficulty in constructing or otherwise developing the needed treatment technology because the types of treatment technologies involved all exist and should be available given time.

As of May 8, 1994, EPA may not, by statute, grant any further extensions of the LDR effective date for hazardous debris. Therefore, it is to the generators' advantage to enter into a contractual agreement for treatment of hazardous debris as soon as possible to ensure adequate treatment

capacity for compliance by the May, 1994, deadline.

Demonstration 40 CFR 268.5(a)(3): Due to circumstances beyond the applicant's control, such alternative capacity cannot reasonably be made available by the applicable effective date. This demonstration may include a showing that the technical and practical difficulties associated with providing the alternative capacity will result in the capacity not being available by the applicable effective date.

The applicants provided numerous examples regarding logistical difficulties associated with providing the alternative capacity--among them that EPA guidance on the hazardous debris rule has not been issued and the delay in the permitting process. Applicants stated that issuance of new permits or modifications to existing permits for storage and treatment facilities along with approval of treatment processes has taken longer than planned, causing delays in planning and construction schedules. Also, the applicants stated that it will take time for industry to adapt the available technologies identified in the August 1992 debris treatment standards to the various types of hazardous debris to achieve BDAT. These circumstances are beyond the control of the generators who need to treat or dispose of their hazardous debris, and the information provided to EPA suggests that these circumstances affect most if not all debris generators.

EPA regional offices have indicated that interim status for treatment facilities is generally not available. Therefore, new permits or modifications to permits will have to be issued. EPA believes there to be valid concerns and agrees that additional time is needed to resolve the issues. These circumstances are beyond the control of the generators who need to treat or dispose of their hazardous debris.

Demonstration 40 CFR 268.5(a)(4): The capacity being constructed or otherwise provided by the applicant will be sufficient to manage the entire quantity of waste that is the subject of the application.

Some of the applicants have indicated that they have difficulty in determining at this time the types of treatment technologies to use for certain debris wastes. EPA believes that this uncertainty makes it difficult for some owners and operators to determine their capacity requirements at this time. The unpredictable nature of debris generation also makes predicting future needs difficult.

A critical timing concern relates to the time needed for permit modifications, plus (in some cases) time needed to construct specialized debris treatment units like containment buildings. As noted previously in the discussion of needed contractual commitments, EPA believes that adequate treatment capacity will be provided once these elements are achieved.

Demonstration 40 CFR 268.5(a)(5): He provides a detailed schedule for obtaining required operating and construction permits or an outline of how and when alternative capacity will be available.

A detailed schedule outlining the amount of time required to obtain operating permits and construction time for on-site facilities or outlining the amount of time required to enter into a binding contractual agreement for off-site treatment can be developed, and EPA does not anticipate that generators will have any problems in the development of a schedule.

However, submission of a detailed schedule is not a requirement of this variance.

Demonstration 40 CFR 268.5(a)(6): The applicant must demonstrate that he has arranged for adequate capacity to manage his waste during an extension and has documented in the application the location of all sites at which the waste will be managed.

The applications received by EPA indicated that hazardous debris generators will continue to store or dispose of their wastes onsite or contract for offsite storage or disposal with a permitted facility. EPA believes that generators will be able to find adequate capacity to manage their hazardous debris during the extension period.

Demonstration 40 CFR 268.5(a)(7): Any waste managed in a surface impoundment or landfill during the extension period will meet the requirements of paragraph (h)(2) of 40 CFR 268.5.

It is an absolute legal requirement of this renewal that any generator or owner or operator who intends to manage hazardous debris in a surface impoundment (which is highly unlikely) or landfill during the one-year extension must ensure that the unit meets the requirement of 40 CFR 268.5(h)(2) (see RCRA section 3004(h)(4)). This requirement includes, among other things, that that unit be equipped with a double liner system with a leachate collection system and adequate ground-water monitoring.

B. Consultation With the States

In addition to the above seven demonstrations, EPA is required under 40 CFR 268.5(e) to consult with appropriate state agencies in all affected states.

Before issuing the case-by-case capacity variance on May 8, 1992, EPA consulted with several state agencies which supported the need for an extension of the LDR effective date for hazardous debris. After May 8, 1992, EPA has consulted with the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) regarding the state's opinions on the hazardous debris issue. ASTSWMO has indicated that the states are in favor of a renewal of the hazardous debris capacity variance since many of the generators are unable at this time to determine which treatment methods are required for their debris.

C. Conclusion

Based on its evaluation of the demonstrations required under 40 CFR 268.5, and for the reasons stated above, EPA is renewing the case-by-case extension to the Land Disposal Restrictions for hazardous debris as described elsewhere in the preamble. This renewal is effective from May 8, 1993, to May 8, 1994.

EPA is taking this regulatory action because of the unique circumstances which have resulted in the lack of treatment, recovery, and protective disposal capacity for hazardous debris, and EPA's conclusion that treatment capacity meeting the recently promulgated standards is inadequate, or not available due to logistical problems such as permitting delays, but can ultimately be provided. EPA believes that granting this renewal (conditioned upon a requirement to seek available treatment capacity) is

the most environmentally protective option because it will eliminate a regulatory obstacle that could otherwise force cleanup projects to be postponed.

III. Requirements for This Extension

To receive the benefit of this renewal, a generator or owner/operator must provide the following information to EPA in a report under 40 CFR 268.5(g) by August 12, 1993, or 90 days after the hazardous debris is generated:

(1) The name, mailing address, location and EPA identification number (if assigned) of the facility. The term "facility" includes any site, whether permanent (such as a manufacturing plant), or temporary where hazardous debris will be generated;

(2) A description of the hazardous debris waste stream, including the RCRA waste code(s);

(3) Waste generation rates (cu. m./yr.), and estimated inventories (cu.m.);

(4) The owner/operator or generator must demonstrate that a good-faith effort has been made to locate and contract with treatment or recovery facilities to manage the waste in accordance with the effective date of the applicable restriction in order to utilize this variance. The documentation of this effort must be submitted to EPA.

To make the good-faith effort showing, generators must include a summary of their activities that demonstrate that they have contacted treatment or recovery facilities, but they rejected the waste on the basis of its composition or because the facility did not have treatment capacity to handle the waste. Generators must provide a summary of the letters sent to facilities describing the waste and requesting treatment, recovery, or disposal (protective) for the waste. Generators must also include a summary of responses from the facilities rejecting their waste; if the correspondence from a facility does not clearly state why the waste was rejected, generators must provide an explanation.

In the report, generators must include documentation demonstrating that they have contacted a substantial number of treatment or recovery facilities (EPA believes that contact with 10 or more facilities would constitute a substantial number), but they rejected the waste on the basis of its composition or because the facility did not have treatment capacity to handle the waste. This report must be submitted to EPA by August 12, 1993 or within 90 days after the generation of the hazardous debris. Generators must contact facilities that provide appropriate treatment services for their wastes, if possible.

If capacity is found to be available during the extension period, the owner or operator must use the treatment capacity for as large a portion of its waste as possible; and

(5) Certification as required under 40 CFR 268.5(b).

Two copies of the above information should be sent to the following address: Chief of Training and Technical Assistance Branch, U.S. Environmental Protection Agency, Office of Waste Programs Enforcement (OS-520), 401 M Street, SW., Washington, DC 20460, Attn: Debris Case-by-Case Progress Report.

Finally, EPA notes that the regulatory amendment promulgated today contains a technical amendment to 40 CFR 268.35(e)(2), which relates to the

case-by- case renewal for contaminated soils. This amendment clarifies that the extension granted for soils on October 20, 1992 applied only to soils regulated under the Third Third rule.

List of Subjects in 40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

Dated: May 7, 1993.

Richard J. Guimond,
Assistant Surgeon General, USPHS, Acting Assistant Administrator, Office of Solid Waste and Emergency Response (OS-100).

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:
PART 268--LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. In Sec. 268.35 paragraph (e) is revised to read as follows:

Sec. 268.35 Waste specific prohibitions--Third Third wastes.

* * * * *

(e) Subject to applicable prohibitions in Secs. 268.30, 268.31, and 268.32, contaminated soil and debris are prohibited from land disposal as follows:
(1) Effective May 8, 1994, debris that is contaminated with wastes listed in 40 CFR 268.12, and debris that is contaminated with any characteristic waste for which treatment standards are established in subpart D of this part, are prohibited from land disposal.

(2) Effective May 8, 1994, mixed radioactive hazardous debris that is contaminated with wastes listed in 40 CFR 268.12 and mixed radioactive hazardous debris that is contaminated with any characteristic waste for which treatment standards are established in subpart D of this part, are prohibited from land disposal.

(3) Paragraphs (e) (1) and (2) of this section shall not apply where the generator has failed to make a good-faith effort to locate treatment capacity suitable for its waste, has not utilized such capacity as it has found to be available, or has failed to file a report as required by 40 CFR 268.5(g) by August 12, 1993 or within 90 days after the hazardous waste is generated (whichever is later) describing the generator's efforts to locate treatment capacity. Where paragraphs (e) (1) and (2) of this section do not apply, all wastes described in these paragraphs are prohibited from land disposal effective May 8, 1993.

(4) Effective May 8, 1993, hazardous soil contaminated with wastes specified in this section having treatment standards in subpart D of this part based on incineration, mercury retorting or vitrification, and soils contaminated with hazardous wastes listed in 40 CFR 268.10, 268.11 and 268.12 that are mixed radioactive hazardous wastes, are prohibited from land disposal.

(5) When used in paragraphs (e) (1) and (2) of this section, debris is defined as follows:

(i) Debris as defined in 40 CFR 268.2(g); or

(ii) Nonfriable inorganic solids that are incapable of passing through a 9.5 mm standard sieve that require cutting, or crushing and grinding in mechanical sizing equipment prior to stabilization, limited to the following inorganic or metal materials:

(A) Metal slags (either dross or scoria).

(B) Glassified slag.

(C) Glass.

(D) Concrete (excluding cementitious or pozzolanic stabilized hazardous wastes).

(E) Masonry and refractory bricks.

(F) Metal cans, containers, drums, or tanks.

(G) Metal nuts, bolts, pipes, pumps, valves, appliances, or industrial equipment.

(H) Scrap metal as defined in 40 CFR 261.1(c)(6).

* * * * *

(FR Doc. 93-11322 Filed 5-13-93; 8:45 am)

BILLING CODE 6560-50-P

LEGAL PUBLICATIONS:

Pub. Law 89-272 SEC. 3004 2002 3001 1006 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)

Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)

DIALOG(R)File 180:Federal Register

Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated

Volume: 58 Issue: 98 Page: 29860
CITATION NUMBER: 58 FR 29860
Date: MONDAY, MAY 24, 1993

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR 264, 265, 268, 270, 271
NUMBERS: FRL 4656-7
DATES: Effective: 19930510
Comment by: 19930709
CONTACT INFORMATION: RCRA Hotline, 800-424-9346,, 703-412-9810,; or; Rhonda Craig, 703-308-8434,; or; Bengie Carroll, 703-308-8440
ACTION: Interim final rule
INTERNAL DATA: (FR Doc. 93-11877 Filed 5-21-93; 8:45 am)
Word Count: 23606

SUMMARY: The Environmental Protection Agency (EPA) is today amending the treatment standards under the land disposal restrictions (LDR) program for wastes displaying the characteristic of ignitability (EPA Hazard Code D001) other than those ignitable wastes containing greater than 10 percent total organic carbon (i.e., D001 high TOC subcategory), and corrosivity (EPA Hazard Code D002) that are managed in systems other than those regulated under the Clean Water Act (CWA), those zero dischargers treating wastewater by CWA- equivalent treatment prior to ultimate land disposal, and those injecting into Class I deep wells regulated under the Safe Drinking Water Act (SDWA). This action is being taken to comply with the September 25, 1992 decision of the U.S. Court of Appeals in Chemical Waste Management v. EPA, 976 F.2d 2 (D.C. Cir. 1992). The underlying rule at issue in the opinion was signed on May 8, 1990, and published on June 1, 1990 (55 FR 22520). In the court's decision, the deactivation treatment standards for certain ignitable and corrosive wastes were vacated. Because land disposal of these wastes would be prohibited if no treatment standard is in place, EPA is replacing the vacated treatment standard before the court's mandate becomes effective to avoid an absolute ban on land disposal of these wastes.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264, 265, 268, 270, and 271

(FRL 4656-7)

Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated

AGENCY: Environmental Protection Agency (EPA).

ACTION: Interim final rule.

SUMMARY: The Environmental Protection Agency (EPA) is today amending the treatment standards under the land disposal restrictions (LDR) program for wastes displaying the characteristic of ignitability (EPA Hazard Code D001) other than those ignitable wastes containing greater than 10 percent total organic carbon (i.e., D001 high TOC subcategory), and corrosivity (EPA Hazard Code D002) that are managed in systems other than those regulated under the Clean Water Act (CWA), those zero dischargers treating wastewater by CWA- equivalent treatment prior to ultimate land disposal, and those injecting into Class I deep wells regulated under the Safe Drinking Water Act (SDWA).

This action is being taken to comply with the September 25, 1992 decision of the U.S. Court of Appeals in Chemical Waste Management v. EPA, 976 F.2d 2 (D.C. Cir. 1992). The underlying rule at issue in the opinion was signed on May 8, 1990, and published on June 1, 1990 (55 FR 22520). In the court's decision, the deactivation treatment standards for certain ignitable and corrosive wastes were vacated. Because land disposal of these wastes would be prohibited if no treatment standard is in place, EPA is replacing the vacated treatment standard before the court's mandate becomes effective to avoid an absolute ban on land disposal of these wastes.

DATES: This interim final rule is effective on May 10, 1993.

Comments may be submitted on or before July 9, 1993.

ADDRESSES: The public must send an original and two copies of their written comments to the EPA RCRA Docket (OS-305), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. Place the Docket Number F-93- TTCF-FFFFF on your comments. The official record for this rulemaking is also located in the RCRA Docket, room 2427, at the above address. It is open from 9 a.m. to 4 p.m., Monday through Friday, except on Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. A maximum of 100 pages from the docket may be copied at no cost.

Additional copies cost $.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424-9346 (toll free) or (703) 412-9810 locally. For information on specific aspects of this rule, contact Rhonda Craig, and for technical information about treatment standards, contact Lisa Jones, Office of Solid Waste (OS-322W), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, telephone (703) 308-8434. For information on capacity determinations, contact Bengie Carroll, Office of Solid Waste (OS- 321W), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460, telephone (703) 308-8440.

SUPPLEMENTARY INFORMATION:

Outline

I. Background

A. Summary of the Hazardous and Solid Waste Amendments of 1984

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, allow hazardous wastes to be land disposed only if they satisfy either of two conditions: (1) They are treated, or otherwise satisfy the requirement of

RCRA section 3004(m), which provision requires EPA to set levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized; or, (2) they can be land disposed in units satisfying the no-migration standard in sections 3004(d)(1), (e)(1), and (g)(5). Land disposal includes any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave. RCRA section 3004(k).

EPA was required to promulgate land disposal prohibitions and treatment standards under a congressionally-mandated schedule. Treatment standards had to be promulgated by May 8, 1990, for all wastes that were either listed or identified as hazardous at the time of the 1984 amendments to avoid a ban on land disposal of those hazardous wastes, a task EPA completed within the statutory time frame (although certain of those standards were later vacated by the D.C. Circuit, necessitating today's emergency interim final rule).
RCRA section 3004 (d), (e), and (g).

The land disposal restrictions are effective upon promulgation. RCRA section 3004(h)(1). However, the Administrator may grant a national capacity variance from the effective date of the prohibition and establish a later effective date (not to exceed two years) based on the earliest date on which adequate alternative treatment, recovery, or disposal capacity which protects human health and the environment will be available. RCRA section 3004(h)(2).
The Administrator may also grant a case-by-case extension of the effective date for up to one year, renewable once for up to one additional year, when an applicant successfully makes certain demonstrations. RCRA section 3004(h)(3).

In addition to prohibiting land disposal of hazardous wastes, Congress prohibited storage of any waste which is prohibited from land disposal unless such storage is solely for the purpose of accumulating such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or disposal. RCRA section 3004(j). The provision applies, of course, only to storage which is not also defined as land disposal in section 3004(k).

B. Summary of Third Third Standards for Ignitable, Corrosive and Reactive Characteristic Wastes

On May 8, 1990, EPA promulgated regulations addressing the last of five congressionally-mandated prohibitions on land disposal of hazardous wastes for those wastes that were either listed or identified as hazardous at the time of the 1984 amendments (the third one-third of the schedule of restricted hazardous wastes, hereafter referred to as the Third Third). Among other things in the Third Third final rule, the Agency promulgated treatment standards and prohibitions for hazardous wastes that exhibited one or more of the following characteristics: ignitability, corrosivity, reactivity, or EP toxicity (40 CFR 261.21-261.24). The Third Third rule established treatment standards for the characteristic wastes in one of four forms: (1) A concentration level for hazardous constituents equal to, or greater than, the characteristic level; (2) a concentration level for

hazardous constituents less than the characteristic level; (3) a specified treatment technology (e.g., for ignitable wastes containing high levels of total organic carbon); and, (4) a treatment standard of "deactivation" which allowed the use of any technology, including dilution, to remove the characteristic property. For ignitable, corrosive, and reactive wastes, consideration was given to the hazardous constituents in the waste only when the Agency had information that such constituents were present (e.g., reactive cyanide wastes); otherwise, only the hazardous property of the characteristic waste had to be addressed.

The Agency also evaluated the applicability of certain provisions of the land disposal restrictions' framework with respect to characteristic wastes, including wastes regulated under the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA) Underground Injection Control (UIC) programs. This was done in an effort to ensure the successful integration of these programs with the LDR regulations, as required by section 1006 of RCRA which specifies that the Administrator shall integrate RCRA for purpose of administration and enforcement and shall avoid duplication to the maximum extent practicable.
See generally 55 FR 22653-59 (June 1, 1990). Specifically, the Agency considered the appropriateness of the dilution prohibition for each of the characteristic waste streams, and the applicability of treatment standards expressed as specified methods.

The Agency found, generally, that mixing waste streams to eliminate certain characteristics was appropriate and permissible for corrosive wastewaters, or in some cases, reactive or ignitable wastewaters. Furthermore, EPA stated that the dilution prohibition did not normally apply to characteristic wastewaters that are managed in treatment trains which include surface impoundments where the ultimate discharge is subject to regulation under the pretreatment and National Pollutant Discharge Elimination System (NPDES) programs under sections 307(b) and 402 of the CWA, or in Class I underground injection well systems regulated under the SDWA. In particular, the Agency stated that the treatment requirements and associated dilution rules under the CWA are generally consistent with the dilution rules under RCRA, and therefore decided to regulate these wastes exclusively under the existing CWA provisions. However, the Agency also singled out certain particularly toxic wastewaters or wastewaters not readily amenable to centralized wastewater management to which the dilution prohibition still applies notwithstanding management in CWA systems. 40 CFR 268.3(b).

Similarly, EPA stated that the regulatory program for Class I wells under the SDWA adequately protects drinking water sources. Class I deep wells inject below the lowermost geologic formation containing an underground drinking water source and are subject to federal location, construction, and operation requirements. The Agency stated that application of the dilution prohibition to these wastes would not further minimize threats to human health and the environment, so that it was permissible to inject wastes that were decharacterized by dilution into Class I wells.

C. Summary of the D.C. Circuit's Opinion

On September 25, 1992, the United States Court of Appeals for the District of Columbia Circuit ruled on the various petitions for review filed against the Third Third rule. Chemical Waste Management, Inc. et al. v. EPA, 976 F.

2d 2. The principal holdings of the case with respect to characteristic wastes, under EPA's initial reading of the opinion, are that: (1) EPA may require treatment under RCRA section 3004(m) to more stringent levels than those at which wastes are identified as hazardous so long as the level defining the waste as hazardous was above the level at which threats to human health and the environment are minimized, 976 F. 2d at 12-14; (2) section 3004(m) requires that treatment standards address both short-term and long- term potential harms posed by hazardous wastes, and consequently must result in destruction, removal or immobilization of hazardous constituents as well as removal of the characteristic property, id. at 16, 17, 23; as a consequence, dilution is permissible as an exclusive method of treatment only for those characteristic wastes that do not contain hazardous constituents "in sufficient concentrations to pose a threat to human health or the environment" (i.e., the minimize threat level in section 3004(m)), id. at 16; and, (3) situations where characteristic hazardous wastes are diluted, lose their characteristic(s) and are then managed in centralized wastewater management land disposal units (i.e., subtitle D surface impoundments or Class I injection wells) are legal only if it can be demonstrated that hazardous constituents are reduced, destroyed or immobilized to the same extent as they would be pursuant to otherwise-applicable RCRA treatment standards, id. at 7.

As a consequence of these holdings, the court held that the deactivation standard for ignitable and corrosive wastes did not fully comply with RCRA section 3004(m). This was because that standard could be achieved by dilution, and dilution fails to destroy, remove, or immobilize the hazardous constituents that can be present in the wastes. Id. The court further held that dilution was ordinarily a permissible means of removing the ICR property of the wastes, but stated that it could be an impermissible means of removing ignitability and reactivity. This was because the court thought the emission of volatile organic constituents (VOCs) might be greater during the process of diluting ignitable wastes than when they are treated by other means, and that the risks of explosion of reactive wastes might be greater when those wastes are treated by dilution to remove the reactivity property. 976 F. 2d at 17, 18.

(It should be noted that the court also addressed several other issues that the Agency is not required to respond to in this interim final rule, either because it denied the petitioner's request for review, or because certain rules were remanded rather than vacated. For instance, the court remanded the lead and chromium treatment standards because EPA appeared to have relied on data that does not support its conclusion, and it denied review of a petition for review of test compliance procedures.)

D. Response to the Court Decision

EPA filed a petition for rehearing with the D.C. Circuit on November 9, 1992. In its petition, EPA requested clarification of whether the provisions of the Third Third rule that allowed dilution of wastes going to CWA/SDWA units were vacated or remanded, suggesting that these provisions were more appropriately remanded. EPA also requested a 90-day stay of the mandate.

In a separate action, industry petitioners filed an unopposed motion seeking a 90-day stay of the mandate. On November 24, the D.C. Circuit issued an order partially granting industry's motion, staying the mandate through January 5, 1993. Then on January 5, industry petitioners filed a petition with the U.S. Supreme Court seeking a writ of certiorari. The government's response opposing grant of that motion was filed on April 8,

1993.

The Court denied EPA's request for rehearing on January 11, 1993, stating, however, that the Third Third treatment standards were vacated only insofar as expressly indicated in the September 25 opinion. On January 19, EPA published a Notice of Data Availability requesting comments and data on options for responding to the court decision (58 FR 4972).

Industry's petition for certiorari continued the stay of mandate issued by the D.C. Circuit pending action by the Supreme Court. On April 26, 1993, the Supreme Court denied certiorari, and the D.C. Circuit's mandate issues on May 10, 1993.

1. Options Prepared for the Notice of Data Availability

As mentioned above, on January 19, 1993, EPA published a Notice of Data Availability to solicit as many comments as possible on all issues in the court opinion (58 FR 4972). The Agency prepared a Supplemental Information Report that was distributed to the public that set out the Agency's options for complying with the court's decision.

The report included options for establishing treatment standards for the underlying hazardous constituents in ignitable, corrosive and reactive (ICR) wastes that would have to be met prior to land disposal (including disposal in UIC wells). Two approaches were set out, along with the Agency's views on possible advantages and disadvantages of each. Under approach one, the Agency discussed the possibility of adopting concentration limits for underlying hazardous constituents. Under approach two, the Agency discussed specifying required treatment technologies. The Agency discussed how these possible approaches might apply to ICR wastes that are not managed in CWA centralized wastewater treatment systems. Furthermore, the applicability of LDR treatment standards to CWA facilities, and possible implementation scenarios under the CWA were also discussed.

Additional issues involving the establishment of treatment standards were also discussed: options for addressing potential volatile organic constituent (VOC) emissions during dilution of ignitable wastes, and potential violent reactions during dilution of reactive wastes were presented.

The Agency discussed options for how to determine the equivalency of CWA treatment systems with treatment under RCRA. The "equivalency" discussion included possible options for addressing air emissions, leaks, and sludges from CWA treatment surface impoundments. Also mentioned were other Agency efforts such as the Hazardous Organic NESHAPs being developed by the Office of Air, and information being gathered by the Office of Solid Waste from existing databases on the management of nonhazardous industrial wastes as possibly being useful for addressing equivalency of CWA treatment impoundments.

The Agency also discussed possible alternative means of compliance with the treatment standards for the underlying hazardous constituents once they were developed. Options included the possible use of risk-based standards being developed for the Hazardous Waste Identification Rule (HWIR) to "cap" LDR treatment standards; meeting treatment standards before land disposal

in a treatment surface impoundment; compliance with requirements of RCRA section 3005(j)(11) (i.e., installing double liners, groundwater monitoring, and leachate collection systems and removing sludge not meeting LDR standards annually for further treatment); and, the possibility of performing waste minimization as a means of meeting the requirements of treatability, and possibly capacity, variances.

Miscellaneous issues were also discussed, such as: does the opinion apply when characteristic wastes are treated by means other than dilution? Should de minimis losses of characteristic wastes sent to wastewater treatment systems be prohibited? Applicability of the decision to RCRA Subtitle C surface impoundments; and possible revisions to the principle established in the Third Third rule that a change in treatability group constituted a new point of generation for characteristic wastes.

Preliminary capacity determinations were also presented for comment, as well as the legal basis for possibly granting a national capacity variance. Finally, preliminary regulatory impact screening analyses for surface disposed and underground injected wastes were also presented.

2. Solicitation of Comments on the Supplemental Information Report

The Agency solicited comments on various aspects of the options in the Supplemental Information Report. Approximately 60 public comments were received in response to the Notice of Data Availability. The Agency's response to issues that pertain to today's interim final rule have, in some cases, been included in the preamble discussion; the remainder of the Agency's responses may be found in the Response to Comments Background Document, available in the RCRA Docket. Other issues raised in the public comments that pertain to remanded portions of the court's opinion will be considered when the Agency prepares proposed approaches in future rulemakings.

E. Rules Compelled by the Opinion to be Issued on An Emergency Basis

EPA is issuing this interim final rule on an emergency basis only with respect to those treatment standards that were vacated (as opposed to remanded) by the court. The distinction between vacated and remanded rules is that vacated rules are no longer in effect (once the court's mandate issues), whereas remanded rules remain in force until the Agency acts to replace them.

This distinction has considerable significance with respect to LDR treatment standards. If there is no treatment standard for a prohibited waste (for example, as a result of a vacatur), that waste is prohibited from land disposal, because it has not been treated to meet the treatment standard established by EPA, and (presumably) is not being disposed in a no-migration unit. RCRA sections 3004 (d), (e), and (g)(5). A remanded treatment standard, on the other hand, would remain in effect and disposal of prohibited wastes treated pursuant to that standard is legal until the standard is amended.

In its November 9 request for rehearing to the court, EPA specifically requested that the Court clarify if it intended to remand, not vacate, the rules addressing dilution and subsequent land disposal of certain decharacterized wastes being managed in Class I injection wells or in

subtitle D surface impoundments whose ultimate discharge is subject to the CWA. The Court indicated in its January 11, 1993 response that the RCRA treatment standards were vacated only insofar as expressly indicated in the September 25 opinion.

In light of this order, the Agency's opinion is that the rules dealing with centralized wastewater management involving land disposal (Secs. 268.1(c)(3) and 268.3(b)) were remanded, not vacated. (See 976 F. 2d at 7, 19-26 where these rules are discussed and not expressly vacated.) This means that the only wastes to which today's rule applies are those ignitable and corrosive wastes for which the treatment standard was deactivation (since the deactivation standard for these wastes was vacated) and which are not managed in the types of centralized wastewater management systems covered by the remanded rules cited above. Today's rule would thus apply, for example, to corrosive wastes that are being incinerated.

An issue exists under this interpretation as to whether centralized wastewater management systems receiving decharacterized ignitable or corrosive wastewaters would have to meet the treatment standards for those wastes promulgated in today's rule. The Agency does not read the opinion as requiring this result. In the first place, it seems clear from the structure of the opinion that the court was considering all issues relating to centralized wastewater management as essentially one single issue, see 976 F.
2d at 19-26, and did not vacate the rules affecting those systems.

Second, by not vacating the rules allowing treatment standards to be achieved through dilution where centralized wastewater management is involved, if EPA were to apply the amended ignitable and corrosive treatment standards to these centralized wastewater management situations, facilities could still dilute to meet the standards. Such a result makes no sense as a policy matter, and so does not appear to reflect the court's intent.

Third, the remanded rule relating to Class I injection wells allows injection of decharacterized wastes provided the wastes do not exhibit a characteristic at the point of injection. Consequently, ignitable and corrosive wastes could continue to be decharacterized (by any means) and injected in Class I deep wells without meeting the treatment standards for those wastes (since Sec. 268.1(c)(3) was remanded). Section 268.3(b), on the other hand, is drafted somewhat differently to provide that characteristic wastes that are managed in wastewater treatment systems whose discharge is ultimately subject to the CWA and that involve some type of land disposal can be diluted to meet the treatment standards. Although this language, unlike the parallel provision in 268.1 respecting Class I deep wells, does not expressly allow wastes not exhibiting a characteristic at the point of disposal to be managed in such systems, it would be anomalous to read the opinion as requiring more stringent rules to apply to CWA systems than to UIC systems, since the CWA systems perform treatment and do not (as the court viewed it) involve permanent land disposal. 976 F.2d at 24, 26. In addition, EPA intended that the provisions allowing dilution for characteristic wastes going to CWA systems and Class I deep wells have the same scope. 55 FR at 22656-58. Consequently, they should have the same scope in assessing the affect of the court's vacatur.

Finally, the opinion does not vacate the treatment standards for wastewaters exhibiting the EP characteristic. Consequently, since the rules

on dilution were only remanded, such wastes can continue to be diluted and land disposed in CWA systems, or in Class I deepwells. By extension, it makes sense to allow dilution of ignitable and corrosive wastewaters, which, by definition, would contain EP constituents (if at all) in lower concentrations.1

NOTE 1 The Agency also believes that any issues relating to the extent to which the opinion applies to subtitle C impoundments receiving decharacterized ignitable and corrosive wastes do not have to be addressed in today's rule because they arise only with respect to rules that were remanded. EPA solicited comment on the issue of whether subtitle C impoundments receiving decharacterized wastes could be affected by the court's opinion. Supplemental Information, pp. 40-1. The Agency has not resolved these issues. However, the court's opinion does not discuss the issue directly, and it would be anomalous for such facilities to be immediately subject to treatment standards when facilities with subtitle D impoundments are not. Consequently, today's rules do not apply to subtitle C impoundments receiving decharacterized ignitable and corrosive wastes.

The following discusses those types of centralized wastewater management that could be covered by today's rule, and the circumstances under which they are and are not covered.

1. Zero Discharge Facilities

In its Notice of Data Availability, EPA solicited comment on whether facilities that treat wastewater but do not ultimately discharge it to a navigable water or a POTW should be subject to the same standard of equivalent treatment as direct and indirect dischargers (see Supplemental Information Report, pp. 38-9). Commenters agreed that the same principles should apply. The Agency also believes that these facilities should be on the same regulatory timetable as direct and indirect dischargers, and consequently that today's treatment standards should not apply to such facilities when they do not apply to direct and indirect dischargers. Based on these comments, and for the reasons set out below, facilities that treat ignitable and corrosive wastes (either in tanks or in land-based units) in the manner described below and then land dispose the wastewaters, for example, by spray irrigation rather than by discharging to a navigable water or a POTW, do not have to meet the treatment standards for ignitable and corrosive wastes adopted today.

The Agency is taking this step in response to commenters who indicated that they treat wastewaters as well as direct or indirect dischargers, but are located in areas where there is no body of water into which to discharge (see, e.g. Comments of Hoechst Celanese). These facilities, in some cases, are subject to federal or state regulatory limitations that are as strict as those that apply to direct and indirect dischargers.

To avoid subjecting zero dischargers that substantially treat their wastewater to regulatory requirements not applicable to similarly-situated direct and indirect dischargers, the emergency rule provides that zero discharge facilities performing treatment equivalent to that performed by facilities subject to CWA limitations and standards are not subject to the emergency rule. This standard of equivalence is not the same as that which the Agency must ultimately address under the opinion regarding the extent

of "RCRA-equivalent" treatment that must be performed to allow continued management involving surface impoundments. (Supplemental Information Report, pp. 15-25) Rather, EPA intends that, for purposes of today's rule, facilities that treat ignitable and corrosive wastewaters by the types of treatment that form the technical basis for most of the CWA standards and limitations (as well as the F039 wastewater standards) are not subject to the rule. These types of treatment are biological treatment for organics, reduction of hexavalent chromium, precipitation/sedimentation for metals, alkaline chlorination or ferrous sulfate precipitation of cyanide (to the extent these constituents are present in the untreated influent to wastewater treatment systems), or treatment that the facility can show performs as well or better than these enumerated technologies. The Agency reiterates that these criteria has limited application only to this interim final rule. It is included because the Agency is promulgating this rule under emergency circumstances and this criteria provides a readily ascertainable way of determining who is and is not affected by today's rule. It is not meant to affect in any way what the appropriate CWA effluent limitation guidelines or individual permit limitations based on permit writers' Best Professional Judgement may be.

In determining whether a facility is performing CWA-equivalent treatment, treatment would need to be performed only for those hazardous constituents in the ignitable or corrosive wastes (for purposes of this evaluation). Cf. Supplementary Information Report, p. 37 (treatment of characteristic wastes, before aggregation, is sufficient to comply with treatment standard, notwithstanding that the same constituents may be present in noncharacteristic streams and thus may be present in the aggregated mixture of the treated characteristic wastes and non-characteristic wastes).
Consequently, if a zero-discharge facility has metals found at 40 CFR part 261, appendix VIII in ignitable or corrosive wastes, the only type of treatment it would need to be conducting for purposes of this CWA-equivalent treatment showing would be treatment for the metals, even if other waste streams at the facility contain organics. The Agency, at least at this time, does not believe that the opinion requires treatment of those hazardous constituents not contributed at least in part by the prohibited wastes.
Consequently, the demonstration should only concern itself with constituents present in the prohibited wastes.

Although the Agency has no information supporting that such facilities exist, today's rule would apply to zero dischargers who are not treating their wastes to this extent. Examples are facilities that have seepage impoundments or evaporation ponds (without concurrent treatment, as described above), or that spray irrigate without CWA-equivalent treatment of the wastewater. These facilities would not be within either the language or the policy of remanded Sec. 268.3(b), and consequently would have to meet the treatment standards for ignitable and corrosive wastes adopted today before the decharacterized wastes are land disposed.

EPA solicits comment on this approach, in particular, if any more precise definition of CWA-equivalent treatment is needed. The Agency's view at this time, however, is that attempting to quantify this standard beyond specifying that zero discharge facilities utilize the types of treatment that form the basis of the CWA standards and limitations would unnecessarily complicate an already complex set of regulations to little ultimate benefit.

2. Underground Injection Wells Other Than Class I

As discussed above, EPA reads the court's opinion as remanding, rather than vacating, rules pertaining to injection of decharacterized ignitable and corrosive wastes into Class I wells. However, because Sec. 268.1(c)(3) only applies to Class I injection (see the reference in that regulation to 40 CFR 144.6(a)), the treatment standards for ignitable and corrosive wastes promulgated today apply when those wastes are injected into other than Class I wells even if the wastes are decharacterized first. Today's requirements thus may apply to some injection practices, in particular, those involving a limited number of Class V injection wells. These typically are wells injecting nonhazardous wastes above or into underground sources of drinking water. Class II wells, it has been suggested, could also be subject to today's rule if they were to inject decharacterized ignitable and corrosive wastes that are not drilling fluids, produced waters, and other wastes uniquely associated with the exploration, development, or production of crude oil, natural gas or geothermal energy, materials that are not hazardous wastes even at their point of generation (see Sec. 261.4(b)(5) and 268.1(b)).

(See discussion of this point in the next preamble section.)

The Agency notes, however, that if the ignitable and corrosive wastes injected into non-Class I wells were to be treated by CWA-equivalent means before injection, today's rule would not apply. Such facilities would be a type of zero discharge facility and, since they are treating by the same means as facilities discharging directly or indirectly, would not be immediately subject to today's rule, as explained above.

F. Identification of Affected Facilities

Very limited data are available upon which to determine the number and types of facilities that will be impacted by this interim final rule.

Estimates have been made, however, based primarily on information available from the states and the Biennial Reporting Survey (BRS) database for 1989.

The problem is compounded by the fact that the facilities impacted may not all be subject to any federal requirement through which information could be gathered.

1. Underground Injection Wells

The Agency has limited and conflicting information about how many Class V wells may be impacted, as well as the volumes and types of formerly characteristic waste injected in these wells, making it difficult to fully assess the need for relief, such as national capacity variances for these facilities. An estimate of the number of facilities that could potentially be impacted by this interim final rule is 100. The Agency believes that many of the Class V wells may fall under the Small Quantity Generator (SQG) exclusion and are conditionally exempt from the RCRA requirements, including the LDRs (see 268.1(e)(1)). From information gathered, and comments received on the Notice of Data Availability, EPA further believes that a number of the deep Class V wells treat their wastes prior to injection, and thus would not be affected by this rule if such a practice would qualify them as a CWA- equivalent facility. As an interim measure, however, the Agency is granting a national capacity variance extending the

effective date of today's rule for nine months from the date of signature for decharacterized ignitable and corrosive wastes injected into Class V wells that do not engage in CWA- equivalent treatment before injection, in order for the facility to determine if it is impacted, to develop appropriate on-site modifications for alternative treatment, and to obtain off-site treatment or submit petitions for case-by-case capacity variances (see section IV of this preamble). The Agency also solicits additional information on the number of Class V wells, the types of wastes, and the volumes of such wastes injected. The Agency believes that it would be prudent for these Class V, and any other non-Class I, wells to apply for case-by-case extensions of the effective date during this nine-month period.

A number of companies extract elemental bromine from deep geologic formations, recover the bromine through ion exchange processes that change the pH of the brine to less than two, neutralize the pH to that of the original brine and reinject the spent solution into the original geologic formation. Because the reinjection process is classified as a Class V injection well, and because the brine's pH is changed to less than two during the process of extracting bromine, these companies raised the issue in their comments as to whether contemplated rules could affect these practices.

As described in the comments, these practices involve beneficiation and possibly mineral processing operations. (The Agency had insufficient information to determine whether the operations were totally beneficiation or also included some mineral processing.) In either case, the solution injected into the Class V wells would not be affected by today's rule. In particular, if these wastes were generated only from beneficiation operations, they would not be hazardous at the point of generation and thus, not affected by today's rule (see Sec. 268.1(b)). If some of the wastes are generated from mineral processing operations, they still would not be affected by today's rule since these wastes (if hazardous) were not identified as hazardous until after 1984, and thus were not included within the scope of the Third Third rule (55 FR at 22667, June 1, 1990). Rather, treatment standards for these wastes-- characteristic mineral processing wastes--will be promulgated in the future.
The Agency is also aware of fundamental arguments as to whether brine reinjected in this manner is a solid waste. The Agency is not addressing this issue at this time.

After an examination and evaluation of the comments received on the Notice of Data Availability, the Agency believes that Class II UIC wells (see complete definition of Class II wells under 40 CFR 144.6(b)) injecting oil and gas exploration and production wastes are not newly impacted by this rule. While one commenter indicated that this rule would impact their injection of decharacterized ignitable and corrosive wastes into a Class II UIC well, the Agency disagrees. First, injection into Class II disposal wells of decharacterized wastes not covered by the exemption in Sec. 261.4(b)(5) would violate existing UIC regulations. See Sec. 146.5(b)(1) specifying which wastes may be injected into Class II disposal wells. Because the conduct is already illegal, EPA does not view today's rule as having any further regulatory impact on that conduct.

Second, injection of such wastes into Class II enhanced recovery wells might also be illegal. To be permissible, the injected materials must qualify as an "enhanced recovery fluid." To do so, the fluid "must function

primarily to enhance recovery of oil and gas and must be recognized by the Agency as being appropriate for enhanced recovery * * * In this context, 'primarily functions' means that the main reason for injecting the materials is to enhance recovery of oil and gas rather than to serve as a means for disposing of those materials." See Report to Congress; Management of Wastes from the Exploration, Development, and Production of Crude Oil, Natural Gas, and Geothermal Energy; Volume 1 of 3; Oil and Gas, EPA/530-SW-88-003, December, 1987, p. II-18. The Agency gave produced waters as one example of materials appropriate for enhanced recovery. Id. In determining what fluids are appropriate, the Agency is of the view that fluids that are hazardous wastes at the point of injection would never meet the test. Decharacterized fluids might also fail to satisfy the test depending on their composition as well as the motivation for the injection. Since the commenter provided none of this information (or even indicated if the comment referred to injection in disposal or enhanced recovery wells), the Agency is unable to assess further whether today's rule might have any effect on these operations.

2. Combustion and Stabilization

Additionally, some of the wastes covered by this rule have been, and will continue to be, managed in combustion and stabilization devices. Upon promulgation of this rule, such facilities must treat the wastes to remove any hazardous characteristic and meet the treatment standards for any underlying hazardous constituents, prior to land disposal. EPA estimates that the number of such facilities that could potentially be impacted by this rule is approximately 340. Submittal of additional data and information characterizing the universe of facilities affected by this rule is encouraged. See section IV of this preamble for more information on these issues.

G. Future Response to Issues Remanded by the Court Decision

The Agency plans to address issues which have been remanded by the court in future rulemakings. Many of these remanded issues are significantly more complex than those dealt with in this interim final rule regarding the vacated deactivation treatment standards. In addition, the universe of facilities affected by the remanded portions of the Third Third rule is much broader than that covered today, as it will include (among other things) treatment systems regulated under the CWA, Class I injection wells regulated under the SDWA, plus zero discharge facilities that are engaged in treatment that is equivalent to CWA dischargers. Furthermore, the volumes of wastes affected by the remanded rules are much greater than those at issue in this regulation (one estimate is that Class I injection wells dispose more than 6 billion gallons of hazardous waste per year).

It is important that facilities that will be impacted in the future by the remanded portions of the court's decision begin immediately to plan and take actions that will help the facility comply with the new treatment standards for ignitable, corrosive, and reactive wastes consistent with the court's decision. Options for addressing these issues were presented in the Supplemental Information Report prepared for the January 19 Notice of Data Availability. The court vacated the deactivation treatment standard for ignitable and corrosive wastes, instructing EPA to develop treatment standards for the hazardous constituents in ignitable and corrosive (and by natural extension of the logic, in reactive) wastes.

Also, it is clear that the court intends for the Agency to address the special dilution provisions for CWA and SDWA Class I injection wells, specifying that dilution alone is not adequate treatment if an ignitable, corrosive, (and, presumably, reactive) waste contains underlying hazardous constituents. This will potentially greatly impact the injection of these wastes in deep wells, since there are few treatment systems currently in place upstream of the injection well that could treat underlying hazardous constituents, if present. Such facilities seem to have few options for dealing with the court's decision: undertaking substantial waste minimization efforts; installing on-site treatment systems; arranging for off-site transport and treatment; or, applying for, and being granted, a no-migration petition that would allow continued land disposal of untreated wastes.

Although commenters suggest that EPA can promulgate a rule that does not require treatment of underlying hazardous constituents, based on a generic finding that injection is a protective practice, the Agency's tentative view is that this is not a viable option (see Supplemental Information Report, pp.

25-7). However, the Agency seeks additional comments on the technical and legal issues raised in this notice.

Probably the biggest issue for CWA wastewater treatment facilities will be that of demonstrating the equivalency of CWA treatment systems with RCRA LDR treatment. Associated issues such as whether the opinion authorizes controls on leakage or volatilization from treatment surface impoundments, or whether sludges generated in impoundments must be treated, may be especially difficult to resolve, even though the court's opinion stated that RCRA LDR requirements should make some accommodations to allow continued treatment of these wastes in CWA treatment systems. EPA will consider the extensive comments on the equivalency demonstration and associated issues as the Agency develops an approach for future proposed rules.

II. Overview of the Interim Final Rule

The Agency is promulgating revised treatment standards for certain ignitable and corrosive wastes that are not managed: (1) In centralized wastewater treatment systems subject to the CWA or in Class I underground injection wells subject to the SDWA Underground Injection Control (UIC) program; or, (2) by a zero discharger with a wastewater treatment system equivalent to that utilized by CWA dischargers prior to land disposal. The treatment standards promulgated in this interim rule retain the requirement of deactivation to remove the hazardous characteristic (see DEACT in Table 1, 40 CFR 268.42); however, this rule also sets numerical treatment standards for the underlying hazardous constituents that may be present in the wastes.

EPA is also promulgating alternative treatment standards of incineration, fuel substitution, and recovery of organics for ignitable wastes.

In addition, changes have been made in the format of 40 CFR 268.42, Table 2, that simplify the way the treatment standards appear, and thus simplify compliance monitoring. The various D001 and D002 subcategories that have appeared in Table 2 since promulgation of the Third Third rule are combined, so that now there are only three D001 subcategories and two D002 subcategories. In particular, for D001 wastes, EPA has broken the subcategories into: The 40 CFR 261.21(a)(1) High TOC Ignitable Liquids

Subcategory (greater than 10% total organic carbon)--the court decision had no impact on this treatability group; D001 wastes that include all descriptions at 40 CFR 261.21 except for the Sec. 261.21(a)(1) High TOC Ignitable Liquids Subcategory managed in non-CWA/non-CWA-equivalent/non-Cla ss I SDWA systems; and, D001 wastes that include all descriptions at 40 CFR 261.21 except for the Sec. 261.21(a)(1) High TOC Ignitable Liquids Subcategory managed in managed in CWA/CWA-equivalent/Class I SDWA systems.

Furthermore, new precautionary measures are being established in the LDR regulations in 40 CFR 268 to prevent emissions of volatile organic constituents or violent reactions during the process of diluting ignitable and reactive wastes. All are described in detail in subsequent sections of this preamble.

Finally, the Agency is granting a three-month national capacity variance that extends the effective date until August 9, 1993, for persons affected by this interim final rule, and an additional extension for those persons who manage ignitable or corrosive wastes and dispose of them in Class V UIC wells, which facilities are not performing CWA-equivalent treatment before injection, that extends the effective date until February 10, 1994. These extensions are necessary because the Agency realizes that even where sufficient treatment capacity exists, it may not be immediately available. See section IV of this preamble for additional information on these capacity extensions.

III. Treatment Standards for Ignitable and Corrosive Wastes

A. Overview of Treatment Standards for Ignitable and Corrosive Wastes Not Disposed in CWA or SDWA Facilities or That Do Not Engage in CWA-Equivalent Treatment Prior to Land Disposal

The Agency is promulgating revised treatment standards for certain ignitable (D001) and corrosive (D002) wastes. (See list of applicable waste streams below.) The revised standards retain the requirement to remove the hazardous characteristic (i.e., the deactivation treatment standard (DEACT) remains applicable); it also requires that the waste be treated so that each underlying hazardous constituent in the waste meets the same concentration- based treatment standard promulgated for that constituent in the treatment standards for F039 wastewaters and nonwastewaters. (F039 is the hazardous waste code for liquids that have percolated through land disposed wastes (i.e., leachate) resulting from the disposal of more than one listed hazardous waste. See 40 CFR 261.31.)

By means of incorporating the F039 treatment standards into the treatment standards for certain ignitable (D001) and corrosive (D002) wastes, this rule allows the Agency to address any and all of those constituents regulated elsewhere in the Land Disposal Restrictions program with concentration-based treatment standards. Table III-1 presents these concentrations for the reader's convenience.

D001--Ignitable Liquids based on 261.21(a)(1)--Wastewaters.
D001--Ignitable Liquids based on 261.21(a)(1)--Low TOC Ignitable Liquids Subcategory--Less than 10% total organic carbon (Nonwastewaters).
D001--Ignitable Reactives based on 261.21(a)(2) (Nonwastewaters).
D001--Ignitable Compressed Gases based on 261.21(a)(3) (Nonwastewaters).
D001--Oxidizers based on 261.21(a)(4) (Wastewaters and Nonwastewaters).
D002--Acid Subcategory based on 261.22(a)(1) with Ph less than or equal to

2 (Wastewaters and Nonwastewaters).
D002--Alkaline Subcategory based on 261.22(a)(1) with Ph greater than or equal to 12.5 (Wastewaters and Nonwastewaters).
D002--Other Corrosives based on 261.22(a)(2) (Wastewaters and Nonwastewaters).

B. The Basis of the Numerical Treatment Standards

While the Court agreed that deactivation by any means to remove the characteristic property normally was appropriate treatment, the Court held that because hazardous constituents could be present in these wastes at concentrations of concern, the deactivation standard alone did not fully comply with RCRA section 3004(m). Consequently, EPA is now promulgating a treatment standard that retains the requirement of deactivation to remove the hazardous characteristic (i.e., DEACT) and that also sets numerical treatment standards for the hazardous constituents that may be present in D001 and D002 wastes. The numerical treatment standards for organics are established based on whether the residues are wastewaters (with total limits expressed in mg/L) or nonwastewaters (with total limits expressed in mg/Kg). The numerical treatment standards for metals are established based on whether the residues are wastewaters (with total limits expressed in mg/L) or nonwastewaters (with TCLP limits expressed in mg/L). Constituent-specific concentration limits allow a certain degree of freedom in selecting the most effective, practical and economical means of achieving compliance through treatment and/or waste minimization.

The Agency has already promulgated numerical treatment standards for organics that EPA believes are achievable for most RCRA hazardous wastes. The Third Third final rule, along with revisions promulgated on August 18, 1992 (57 FR 37203-37206), established numerical treatment standards for organics that were essentially applied universally to most RCRA waste codes. The treatment standards promulgated in today's rule for D001 and D002 wastes are based on a transfer of these same treatment data and are represented by the existing standards for F039. As such, the new standards for D001 and D002 wastes are essentially a compilation of all earlier treatment standards and include virtually every RCRA hazardous constituent that can be routinely analyzed by existing analytical methods, (i.e, a set of approximately 200 constituents)./2/ Table III-1 at the end of this section tabulates these wastewater and nonwastewater numerical standards.

NOTE /2/ While the Agency is establishing treatment standards for approximately 200 hazardous constituents, as discussed later in this preamble, compliance with the treatment standards will be met for those hazardous constituents reasonably expected to be present in the ignitable and/or corrosive waste.

EPA evaluated treatability data for nonwastewaters and wastewaters that are currently available for each hazardous constituent. The resulting set of treatment standards reflect EPA's preference for data from full-scale operations over data from pilot- or bench-scale units, and for processes treating high concentration, difficult-to-treat wastes. The Final BDAT Background Document for U and P Wastes and Multisource Leachate, Volumes A and C, explain on a constituent-by-constituent basis how each wastewater and nonwastewater standard, respectively, was calculated.

EPA developed the wastewater treatment standards using constituent-specific data from treatment of both RCRA and non-RCRA wastewaters. These performance data were from three major sources: (1) Industrial waste treatment data generated by the Office of Water in the Effluent Guidelines development effort; (2) data from EPA's Office of Research and Development Wastewater Treatment Database, a compilation of treatability research results reported in the technical literature; and, (3) industry-generated data submitted to EPA for the purpose of providing data for the Third Third rule. Activated sludge and other forms of biological treatment were the technologies most frequently used as the basis of the treatment standards for organic constituents. Granulated and powdered activated carbon, steam and air stripping, and wet-air and chemical oxidation were also utilized to establish standards for certain organics. Standards for metals were generally based on lime precipitation followed by sedimentation and filtration.

EPA developed the nonwastewater treatment standards using constituent-specific data from treatment of primarily RCRA wastes. Most data were from the analysis of ash residues from the incineration of 14 different waste types.

C. Alternative Standards for Ignitable Wastes

For D001 wastes, EPA is also promulgating alternative standards of incineration (INCIN), fuel substitution (FSUBS) and recovery of organics (RORGS). EPA previously promulgated these same standards as BDAT for D001 nonwastewaters in the High TOC Ignitable Liquids Subcategory. Therefore, this is simply an extension of an existing provision for these methods to serve as standards for these wastes and does not reflect any change in EPA's preference for establishing constituent-specific concentration levels rather than treatment methods as the LDR treatment standards. Since low TOC nonwastewaters and the D001 wastewaters would necessarily contain lower concentrations of organics than the D001 nonwastewaters in the high TOC Subcategory, treatment methods based on high temperature thermal destruction (i.e., INCIN and FSUBS) would be expected to achieve similar performance for the hazardous organic constituents present in these other D001 wastes. Also, while the recovery of organics from D001 wastewaters that necessarily contain lower concentrations of organics may be technically more difficult and somewhat less economically desirable than recovery from D001 wastes with higher concentrations of organics, the Agency does not want to discourage on- going environmentally sound recovery practices such as steam stripping, oil- water separation, and distillation that are currently being performed.
Additionally, all of these specified methods will remove the D001 characteristic of ignitability.

Because the emissions from thermal technologies are regulated under 40 CFR part 264, subpart O, or 40 CFR part 266, subpart H, and the Agency wants to encourage environmentally sound resource conservation, the Agency finds INCIN, RORGS and FSUBS to be acceptable interim alternatives to the numerical treatment standards, notwithstanding the Agency's preference for numerical treatment standards. Therefore INCIN, RORGS and FSUBS are being promulgated in today's rule as an alternative to compliance with the DEACT plus numerical standards until the Agency can complete a more thorough investigation on the need to apply the numerical standards to the residues. The treater or generator has, for the interim, the option of choosing

either regulatory alternative.

There are advantages to either means of compliance. Using the specified methods reduces the need for costly compliance monitoring. Using the numerical standards (along with deactivation of the characteristic) allows more freedom in selecting treatment technologies. As a general matter, the Agency heard in the LDR Evaluation Project Roundtable meeting /3/ held January 12-14, 1993, there is a need for more efficient and meaningful monitoring to demonstrate compliance with the numerical treatment standards.

EPA is assessing broad-based changes to the LDR monitoring requirements and intends to address this issue in upcoming notices of proposed rulemaking.

NOTE /3/ The LDR Evaluation Project Roundtable meeting was held with EPA regional and State regulators, an environmental group, the waste management industry, and the regulated community. The main intention of the meeting was to provide these persons an opportunity to comment on various aspects of the LDR program, and to offer suggestions on how the program could be improved. A summary of the Roundtable proceedings is available in the RCRA Docket, number F-92-CD2F-SO144.

D. Alternatives Discussed in the Supplemental Information Report

EPA considered mandating the use of particular treatment technologies (such as those identified in appendix VI to part 268) as a means of regulating the hazardous constituents for all ignitable, corrosive, and reactive (ICR) wastes. This approach appears unnecessarily complicated and the Agency concluded it would lead to unnecessary and potentially burdensome controls and governmental review. In many cases, specifying treatment methods would require establishing surrogate or indicator parameters for compliance monitoring to ensure treatment of the hazardous constituents. Then, all the generators and treaters would be required to identify and verify that the surrogate parameters were indeed indicators of treatment for the hazardous constituents present.

In addition, for wastes containing both metal and organic constituents, specifying single types of treatment does not necessarily result in treatment of all of the constituents that are present. While EPA could have designated a treatment train, i.e., a specified sequence of treatment processes, as a method of treatment, situations could arise where wastes containing only a single type of hazardous constituent would, then, be overregulated requiring unnecessary and costly treatment.

EPA also considered specifying the methods that were considered BDAT during the development of the treatment standards for each individual hazardous constituent. However, the above-mentioned problems with specifying methods remained and new ones appeared; for example: specific on-site technical and engineering decisions, including the possibility of Agency review and approval on the proper sequencing of treatment units would have been necessary; additional sequencing decisions dependent upon the types and concentrations of hazardous constituents present would have to have been made; and whenever new constituents or wastes were introduced, the sequence decisions would have to be reviewed and reapproved.

As such, EPA believes that constituent-specific numerical treatment standards ensure treatment of the hazardous constituents more efficiently (on a regulatory basis) than the approach of mandating the use of specific

technologies. Most of the commenters agreed. Although the alternative standards, FSUBS, INCIN and RORGS are appropriate as interim standards pending EPA's subsequent development of treatment standards reflecting a more thorough evaluation of these waste streams, they are a special case reflecting the need to respond promptly to the court by instituting adequate treatment standards for the hazardous constituents in these wastes.

Additional reasons supporting the FSUBS, INCIN and RORGS options are discussed in section C immediately preceding this section.

EPA continues to prefer constituent-specific numerical treatment standards whenever possible. Setting numerical standards also provides for the encouragement of innovative technologies and practices to achieve these limits. This also encourages the use of source reduction techniques to reduce the overall loading of hazardous constituents into these wastes as alternative and cost-effective means of compliance.

Table III-1.--Regulated Constituents and Standards

Constituent	Wastewater (mg/l)	Nonwastewater (mg/kg)
Acetone	0.28	160
Acenaphthalene	0.059	3.4
Acenaphthene	0.059	4.0
Acetonitrile	0.17	NA
Acetophenone	0.010	9.7
2-Acetylaminofluorene	0.059	140
Acrolein	0.29	NA
Acrylonitrile	0.24	84
Aldrin	0.021	0.066
4-Aminobiphenyl	0.13	NA
Aniline	0.810	14
Anthracene	0.059	4.0
Aramite	0.36	NA
Aroclor 1016	0.013	0.92
Aroclor 1221	0.014	0.92
Aroclor 1232	0.013	0.92
Aroclor 1242	0.017	0.92
Aroclor 1248	0.013	0.92
Aroclor 1254	0.014	1.8
Aroclor 1260	0.014	1.8
alpha-BHC	0.00014	0.066
beta-BHC	0.00014	0.066
delta-BHC	0.023	0.066
gamma-BHC	0.0017	0.066
Benzene	0.140	36
Benzo (a) anthracene	0.059	8.2
Benzo (b) fluoranthene	0.055	3.4
Benzo (k) fluoranthene	0.059	3.4
Benzo (g,h,i) perylene	0.0055	1.5
Benzo (a) pyrene	0.061	8.2
Bromodichloromethane	0.35	15
Bromoform	0.63	15
Bromomethane (methyl bromide)	0.11	15
4-Bromophenyl phenyl ether	0.055	15
n-Butanol (n-Butyl alcohol)	5.6	2.6
Butyl benzyl phthalate	0.017	7.9
2-sec-Butyl-4,6-dinitrophenol	0.066	2.5
Carbon tetrachloride	0.057	5.6

Carbon disulfide	0.014	NA
Chlordane	0.0033	0.13
p-Chloroaniline	0.46	16
Chlorobenzene	0.057	5.7
Chlorobenzilate	0.10	NA
2-chloro-1,3-butadiene	0.057	NA
Chlorodibromomethane	0.057	15
Chloroethane	0.27	6.0
bis-(2-Chloroethoxy) methane	0.036	7.2
bis-(2-Chloroethyl) ether	0.033	7.2
Chloroform	0.046	5.6
bis-(2-Chloroisopropyl) ether	0.055	7.2
p-Chloro-m-cresol	0.018	14
Chloromethane (methyl chloride)	0.19	33
2-Chloronaphthalene	0.055	5.6
2-Chlorophenol	0.044	5.7
3-Chloropropene	0.036	28
Chrysene	0.059	8.2
o-Cresol	0.11	5.6
Cresol (m- and p- isomers)	0.77	3.2
Cyclohexanone	0.36	NA
1,2-Dibromo-3-Chloropropane	0.11	15
1,2-Dibromoethane (Ethylene dibromide)	0.028	15
Dibromomethane	0.11	15
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.72	10
o,p-DDD	0.023	0.087
p,p-DDD	0.023	0.087
o,p-DDE	0.031	0.087
p,p-DDE	0.031	0.087
o,p-DDT	0.0039	0.087
p,p-DDT	0.0039	0.087
Dibenzo(a,h) anthracene	0.055	8.2
Dibenzo(a,e)pyrene	0.061	NA
m-Dichlorobenzene	0.036	6.2
o-Dichlorobenzene	0.088	6.2
p-Dichlorobenzene	0.090	6.2
Dichlorodifluoromethane	0.23	7.2
1,1-Dichloroethane	0.059	7.2
1,2-Dichloroethane	0.21	7.2
1,1-Dichloroethylene	0.025	33
trans-1,2-Dichloroethylene	0.054	33
2,4-Dichlorophenol	0.044	14
2,6-Dichlorophenol	0.044	14
1,2-Dichloropropane	0.85	18
cis-1,3-Dichloropropene	0.036	18
trans-1,3-Dichloropropene	0.036	18
Dieldrin	0.017	0.13
Diethyl phthalate	0.20	28
2,4-Dimethyl phenol	0.036	14
Dimethyl phthalate	0.047	28
Di-n-butyl phthalate	0.057	28
1,4-Dinitrobenzene	0.32	2.3
4,6-Dinitrocresol	0.28	160
2,4-Dinitrophenol	0.12	160
2,4-Dinitrotoluene	0.32	140
2,6-Dinitrotoluene	0.55	28
Di-n-octyl phthalate	0.017	28

Di-n-propylnitrosoamine	0.40	14
Diphenyl anine	0.52	NA
1,2-Diphenyl hydrazine	0.087	NA
Diphenylnitrosanine	0.40	NA
1,4-Dioxane	0.12	170
Disulfoton	0.017	6.2
Endosulfan I	0.023	0.066
Endosulfan II	0.029	0.13
Endosulfan sulfate	0.029	0.13
Endrin	0.0028	0.13
Endrin Aldehyde	0.025	0.13
Ethyl acetate	0.34	33
Ethyl benzene	0.057	6.0
Ethyl cyanide	0.24	360
Ethyl ether	0.12	160
bis-(2-Ethylhexyl) phthalate	0.28	28
Ethyl methacrylate	0.14	160
Ethylene oxide	0.12	NA
Famphur	0.017	15
Fluoranthene	0.068	8.2
Fluorene	0.059	4.0
Fluorotrichloromethane	0.020	33
Heptachlor	0.0012	0.066
Heptachlor epoxide	0.016	0.066
Hexachlorobenzene	0.055	37
Hexachlorobutadiene	0.055	28
Hexachlorocyclopentadiene	0.057	3.6
Hexachlorodibenzo-furans	0.000063	0.001
Hexachlorodibenzo-p-dioxins	0.000063	0.001
Hexachloroethane	0.055	28
Hexachloropropene	0.035	28
Indeno (1,2,3-c,d) pyrene	0.0055	8.2
Iodomethane	0.19	65
Isobutanol	5.6	170
Isodrin	0.021	0.066
Isosafrole	0.081	2.6
Kepone	0.0011	0.13
Methacrylonitrile	0.24	84
Methanol	5.6	NA
Methapyrilene	0.081	1.5
Methoxychlor	0.25	0.18
3-Methylcholanthrene	0.0055	15
4,4-Metlhylene-Bis-(2-chloroaniline)	0.50	35
Methylene chloride	0.089	33
Methyl ethyl ketone	0.28	36
Methyl isobutyl ketone	0.14	33
Methyl methacrylate	0.14	160
Methyl methansulfonate	0.018	NA
Methyl parathion	0.014	4.6
Naphthlalene	0.059	3.1
2-Naphthylamine	0.52	NA
p-Nitroaniline	0.028	28
Nitrobenzene	0.068	14
5-Nitro-o-toluidine	0.32	28
4-Nitrophenol	0.12	29
N-Nitrosodiethylamine	0.40	28
N-Nitrosodimethylamine	0.40	NA

N-Nitroso-di-n-butylamine	0.040	17
N-Nitrosomethylethylamine	0.040	2.3
N-Nitrosomorpholine	0.040	2.3
N-Nitrosopiperidine	0.013	35
N-Nitrosopyrrolidine	0.013	35
Parathion	0.014	4.6
Pentachlorobenzene	0.055	37
Pentachlorodibenzo-furans	0.000063	0.001
Pentachlorodibenzo-p-dioxins	0.000063	0.001
Pentachloronitrobenzene	0.055	4.8
Pentachlorophenol	0.089	7.4
Phenacetin	0.081	16
Phenanthrene	0.059	3.1
Phenol	0.039	6.2
Phorate	0.021	4.6
Phthalic anydride	0.069	NA
Pronamide	0.093	1.5
Pyrene	0.067	8.2
Pyridine	0.014	16
Safrole	0.081	22
Silvex (2,4,5-TP)	0.72	7.9
2,4,5-T	0.72	7.9
1,2,4,5-Tetrachlorobenzene	0.055	19
Tetrachlorodibenzo-furans	0.000063	0.001
Tetrachlorodibenzo-p-dioxins	0.000063	0.001
1,1,1,2-Tetrachloroethane	0.057	42
1,1,2,2-Tetrachloroethane	0.057	42
Tetrachloroethylene	0.056	5.6
2,3,4,6-Tetrachlorophenol	0.030	37
Toluene	0.080	28
Toxaphene	0.0095	1.3
1,2,4-Trichlorobenzene	0.055	19
1,1,1-Trichloroethane	0.054	5.6
1,1,2-Trichloroethane	0.054	5.6
Trichloroethylene	0.054	5.6
2,4,5-Trichlorophenol	0.18	37
2,4,6-Trichlorophenol	0.035	37
1,2,3-Trichloropropane	0.85	28
1,1,2-Trichloro-1,2,2-trifluoroethane	0.057	28
Tris(2,3,-dibromopropyl) phosphate	0.11	NA
Vinyl chloride	0.27	33
Xylene(s)	0.32	28
Cyanides (Total)	1.2	1.8
Cyanides (Amenable)	0.86	NA
Fluoride	35	NA
Sulfide	14	NA
Antimony	1.9	/1/ 0.23
Arsenic	1.4	/1/ 5.0
Barium	1.2	/1/ 52
Beryllium	0.82	NA
Cadmium	0.20	/1/ 0.066
Chromium(Total)	0.37	/1/ 5.2
Copper	1.3	NA
Lead	0.28	/1/ 0.51
Mercury	0.15	/1/ 0.025
Nickel	0.55	/1/ 0.32
Selenium	0.82	/1/ 5.7

Silver	0.29	/1/ 0.072
Thallium	1.4	NA
Vanadium	0.042	NA
Zinc	1.0	NA

/1/ These concentrations are expressed in mg/l and are measured through an analysis of TCLP extract; all others measured through a total waste analysis.

E. Changes in Treatability Group Are Not a New Point of Generation for Purposes of Today's Rule

Treatment of a wastewater often generates a nonwastewater sludge as well as a treated wastewater. Similarly, incineration of a wastewater can generate a nonwastewater (ash) as well as a wastewater (scrubber water) residue. The issue under discussion here is whether these residues that are different treatability groups require further treatment. The Agency has approached this issue differently for listed and characteristic wastes. Under the "derived- from" rule, residues generated from the treatment of listed wastes are subsequently managed as the listed waste; thus treatment must continue until the LDR treatment standards are achieved as measured in the treatment residue.

No derived-from rule applies to characteristic wastes, however. In the Third Third final rule, EPA stated that for characteristic wastes, each change of treatability group in a treatment train marked a new point of generation for determining if a characteristic waste was prohibited from land disposal (55 FR 22661-62). Thus, if a characteristic wastewater were treated and generated a sludge (a nonwastewater) that did not exhibit a characteristic, the sludge would not be subject to any prohibition.

This issue was discussed in the Supplemental Information Report prepared for the Notice of Data Availability published on January 19, 1993 (see Supplemental Information Report, pp. 41-2). It was explained that this principle made sense in the context of the Third Third rule where the treatment standard for most characteristic wastes was deactivation. Now that the court has directed EPA to set standards for the underlying hazardous constituents in wastes that are deactivated, the Agency is reexamining this principle. EPA solicited comment in the Supplemental Information Report on how much force the change of treatability group principle retains after the court's opinion.

Several commenters addressed this issue by saying that EPA should reaffirm its prior pronouncements on the rules governing changes in treatability groups. Some suggested that if changes were necessary, they would be better made in the context of changes in the dilution provisions of 40 CFR 268.3, when the remanded portions of the court opinion are considered in the future.

On the other hand, other commenters argued that the only way to be consistent with the court's direction to minimize threats to human health and the environment from hazardous constituents is to apply BDAT standards to treatment residues. They said that such an approach would remove subjectivity and questions about compliance with the LDR treatment standards.

For wastes addressed in this interim final rule and treated in combustion and other devices, the Agency is adopting an approach where the LDR treatment standards attach at the point of generation of the original

ignitable or corrosive waste. Residues that derive from the treatment of the original ignitable or corrosive waste would be subject to either the wastewater or nonwastewater F039 treatment standards, based on the physical form of the residue. (There is no requirement, however, to measure residues for D001 waste when a method of treatment has been established as an alternative standard and that method has been used.)

The Agency is taking this approach in today's rule in part because of the exigent need to issue an emergency rule, and the consequent lack of time to try and develop an alternative. In addition, EPA expects that combustion processes will be the principal type of technology utilized to comply with the wastes affected by today's rule, and the principal treatment residue left from combustion treatment is an ash (a nonwastewater), leaving that ash as the only logical thing to test to determine that the treatment standards have been satisfied. To the extent that an ignitable or corrosive wastewater is being disposed in a land disposal unit that is not part of a system regulated under the CWA, a zero discharger that is not treating the wastewater by CWA- equivalent treatment, or injecting in other than a Class I underground injection well system, this also should not be an issue since the treatment standards, including those for the underlying hazardous constituents, must be met before the wastewater is land disposed.

EPA emphasizes that it is making no decision, and establishing no precedent, on the issue of whether nonwastewater residues from wastewater treatment, such as wastewater treatment sludges, require further treatment when such nonwastewater residues are not hazardous waste when they are generated (see Supplemental Information Report, pp. 23-5). As a legal matter, the court did not directly decide the issue, and the Agency's rules established in the Third Third rule were not challenged. In addition, the effectiveness of a wastewater treatment system is most appropriately determined by monitoring the effluent wastewater, unlike the situation with combustion technology where treatment of a wastewater or nonwastewater is most appropriately measured by testing an ash (a nonwastewater).

F. Minimize Threat Levels

The treatment standards adopted today are based on the performance of available treatment technologies. This approach to establishing treatment standards was upheld in Hazardous Waste Treatment Council v. EPA, 886 F. 2d 355, 361-62 (D.C. Cir. 1989), cert. denied, 111 S. Ct. 139 (1990) (HWTC III).

The levels of the treatment standards are, of course, constrained by the requirement that the standards not be lower than the level at which threats to human health and the environment are minimized. Section 3004(m)(1); HWTC III, 886 F. 2d at 363; Third Third Opinion, 976 F. 2d at 14. It was not possible to develop such levels in today's rule because of the need to issue this as an emergency rule. However, the Agency will continue to evaluate various approaches for setting such minimize threat levels and, as appropriate, propose them in future rulemakings. The Agency solicits technical and factual information that could aid in defining the minimize threat levels.

G. Compliance Monitoring Requirements

As noted in the Supplemental Information Report, one concern with implementing numerical treatment standards for the ignitable (D001) and corrosive (D002) wastes is which hazardous constituents must be monitored

to determine compliance and the frequency of such monitoring. The treatment standards that are being promulgated (in addition to the existing deactivation treatment standard) for D001 wastes (other than the D001 high TOC subcategory, which is unaffected by today's rule), and D002 wastes, set numerical limits for over 200 constituents. Since each facility's ignitable or corrosive wastes likely will contain only a subset of these hazardous constituents, it seems unnecessary and wasteful to routinely require monitoring of all constituents. Therefore, compliance with the treatment standards promulgated in this rule for ignitable and corrosive wastes must be monitored for only for those hazardous constituents "reasonably expected to be present" in the hazardous waste.

The determination of "reasonably expected to be present" for compliance purposes may be based on knowledge of the raw materials used, the process, and potential reaction products, or the results of a one-time analysis for the entire list of F039 hazardous constituents that may be present in the untreated hazardous waste. If a one-time analysis of the entire list of F039 hazardous constituents is conducted, subsequent analyses would be required for only those pollutants which would reasonably be expected to be present in the waste as generated, based on the sampling and analysis results.

This approach is similar to that developed in the Third Third final rule for measuring compliance with multi-source leachate (F039) standards (55 FR 22620, 22621). (However, this approach for determining which constituents are present in the waste is not necessarily the approach that will be taken in future rulemakings when the remanded rules are addressed.) If the facility is permitted under RCRA, and the facility's Waste Analysis Plan requires modification to accomplish this, the Plan may be modified through a Class 1 permit modification with prior approval. (See amendment to 40 CFR 270.42 promulgated as part of today's rule. See also 55 FR 22621 explaining why it is reasonable to use Class I modification procedures.) If the facility is not permitted under RCRA, the results of the one-time analysis for all hazardous constituents and any other relevant information should be kept in the facility's files. See 40 CFR 268.9, 268.7(b)(5), and discussion at section I below. Generators covered by the rule utilizing Sec. 262.34 tanks for treating the wastes may also amend their waste analysis plans prepared pursuant to Sec. 268.7(a)(4). Changes in waste generation should be documented in the facility files; furthermore, it is recommended that another analysis of the F039 list of hazardous constituents be made. Commenters generally supported such an approach.

H. Addressing Potential VOC Emissions and Violent Reactions During Dilution of Ignitable and Reactive Wastes

1. Potential VOC Emissions During Dilution of Ignitable Wastes--Background and Comments

The court held that EPA must address the problem of VOC (volatile organic constituents) emissions from ignitable waste during dilution. The court pointed out that the Agency had initially proposed in the Third Third to prohibit dilution of all ignitable wastes because of the risk of VOC emissions during dilution. Furthermore, the court stated that EPA had presented inadequate justification in the final rule not to control emissions during dilution of ignitable wastes. Thus, in vacating the standard, the court invited the Agency to justify non-regulation with

evidentiary support or require actions to minimize the risk. 976 F.2d at 17.

As was explained in the Supplemental Information Report, the Agency has reconsidered its premise set forth in the proposed Third Third rule (see Supplemental Information Report, pp. 34-5). In most cases, whatever the risk of VOC emissions from ignitable wastes is, it is not increased during the dilution process. Nor does dilution normally pose a risk of VOC emission greater than that posed by other methods of treating these wastes. In the Supplemental Information Report, the Agency also pointed out, however, that there are instances where diluting certain wastes could cause exothermic reactions that would increase volatilization or acid misting. Id.

Furthermore, even in situations where emissions are not increased during the dilution process, the wastewater treatment system may still pose risks due to emissions. EPA solicited comments on these issues.

A few commenters responded. The Chemical Manufacturers Association and others agreed with EPA that in most cases the risk of VOC emissions from ignitable wastes is not increased during the dilution process. No commenter disagreed with EPA's tentative conclusion.

2. Potential Violent Reactions During Dilution of Reactive Wastes--Background and Comments

In the proposed Third Third rule, EPA stated that dilution of reactive wastes should not automatically be considered a legitimate form of treatment (54 FR at 48426). The preamble discussion indicated that most reactive wastes cannot be diluted without violent reaction, and thus concluded that dilution is not a viable management alternative for these wastes. The Agency took a different position in the final rule (i.e., many reactive wastes should be diluted with some type of liquid, such as kerosene, in the case of water reactive wastes, in order to safely transport such wastes to incineration or chemical treatment); however, the court looked primarily at the proposal in reaching its conclusion, saying that while there seemed to be no toxicity concern with these wastes, any treatment standard written for these wastes must curb the risk of violent reaction during treatment. 976 F. 2d at 18.

As was explained in the Supplemental Information Report, because of their very nature, reactive wastes are typically handled carefully to avoid violent reaction such as explosion. It is logical that workers are very careful with such wastes and take precautions against any risk of reaction, whether through dilution or other practices, to protect their health and very life.

Comments were solicited on whether dilution is any more risky than other waste management practices for reactive wastes. Comments were also solicited on other types of controls that may be in place under OSHA and Department of Transportation requirements, or even under local fire codes, and whether such controls may be adequate to address the potential for violent reactions during dilution.

Commenters stated that in any situation where these wastes are deactivated by reaction with water, generators are already appropriately regulated under other statutes, including the Bureau of Alcohol, Tobacco, and Firearms regulations at 27 CFR 55, OSHA process safety management standards at 29 CFR 1710.119, and the chemical process safety standards of section

304 of the Clean Air Act. In addition, comments provided by members of the Chemical Manufacturers Association (CMA) indicate that reactive wastes are not commonly managed by dilution, and generators are highly motivated to prevent explosions and fires by concerns about employee and community safety, business continuity, and cost. Other commenters pointed out, as EPA did in the final Third Third rule, that dilution of some types of reactive wastes is the best means of removing the reactivity property (55 FR at 22553).

3. Final Approach

The Agency is adopting in this interim final rule an approach to address the potential for increased emissions during the process of dilution of ignitable wastes and for violent reactions during dilution of reactive wastes, the two principal risks potentially warranting extra control. The Agency is modifying 40 CFR 268 to require that the general facility standards set out at 40 CFR 264.17(b) and 265.17(b) for permitted and interim status facilities be met during dilution of ignitable or reactive characteristic wastes. These standards require persons managing ignitable or reactive wastes to take the necessary precautions to prevent reactions which generate extreme heat or pressure, fire or explosions, or violent reactions, produce uncontrolled toxic mists, fumes, dusts, or gases in harmful concentrations, or produce uncontrolled flammable fumes or gases that could pose risk of fire or explosion. As noted above, facilities not already subject to these requirements should be complying with them by virtue of meeting OSHA requirements, fire codes, or other safety-related requirements.

Dilution of reactive or ignitable wastes could take place in wastewater treatment tanks that are presently exempt from subtitle C regulation pursuant to Secs. 264.1(g)(6) and 265.1(c)(10). We are making this exemption contingent on satisfying the performance standard in Sec. 264.17(b)(and 265.17(b)). This obviously does not mean that such units become subject to any other type of subtitle C standard. Nor does it mean that these units necessarily lose their subtitle C-exempt status in the unlikely event of an explosion due to lack of precautions when diluting ignitable or reactive wastes. It only means that owners and operators of such units must take precautions when they use them to dilute ignitable and reactive wastes. In addition, because the Agency believes that almost all facilities managing these wastes in exempt tanks will take (and are already taking) proper precautions, and because it will ordinarily be readily apparent when such precautions are not taken, EPA is taking the unusual step of not adopting any type of recordkeeping requirement to document compliance with this new requirement.

I. Notification Requirements

1. Constituents To Be Included on the LDR Notification

EPA solicited comment in the Supplemental Information Report on how to limit the underlying hazardous constituents to be monitored (and thus, the ones required to be reported on the LDR notifications) (see Supplemental Information Report, pp. 8-10). Commenters on this issue generally said that the regulated community should only be required to address those constituents which are in the ignitable or corrosive wastes as generated,

prior to any subsequent mixing with other wastes, and the generators should monitor only for those hazardous constituents reasonably expected to be present in the I/C waste. This is the approach being adopted for this interim final rule (see section III.G above). The determination of which underlying hazardous constituents are in the waste may be made based on a one-time analysis of the waste to determine which of the F039 hazardous constituents are present, or it may be made based on knowledge of what constituents are reasonably expected to be present in the waste. Supporting documentation for the determination must be kept in the generator's on-site files. This approach for determining which constituents are present in the waste is not necessarily the approach that will be taken in future rulemakings when the remanded rules are addressed.

2. Management in Subtitle C--Regulated Facilities

The Agency has information that many of the ignitable and corrosive wastes that are not managed in CWA or SDWA systems are being treated in hazardous waste management units (primarily incinerators) subject to RCRA subtitle C. In such a case, the notification, certification, and recordkeeping requirements set out in 40 CFR 268.7 apply. This means, generally, that a notification would be prepared for each waste shipment sent from the generator to the treatment facility, in the same manner that such paperwork follows a listed waste from "cradle to grave." Once the waste is no longer hazardous, however, the only further recordkeeping and documentation required is set out in 40 CFR 268.9. Section 268.9 requires that the generator/treater (including generators who treat, see 51 FR at 40598, November 7, 1986) prepare a one-time notification which is sent to the EPA Region or authorized state and also kept in the generator or treater's files. The notification must include the name and address of the subtitle D facility receiving a waste shipment, a description of the waste initially generated, and the treatment standard to which the waste is subject (see Sec. 268.9 (d), as amended at 57 FR at 37271 (Aug. 18, 1992)). For wastes covered by today's rule, these treatment standards would be the numerical standards for ignitable and corrosive wastes. These treaters must certify that they are familiar with the treatment process used at their facility and that the process can successfully treat the waste to meet the treatment standards without impermissible dilution. See Sec. 268.7(b)(5), which applies to persons who treat formerly characteristic wastes (see Sec. 268.9(d)(2)). The Agency believes that, normally, at least some waste analysis is needed to make a good faith showing for the treatment standards in today' s rule, given the number of hazardous constituents covered by those standards.

It is important to state that in addition to other waste codes that are currently required to be included on notifications under Sec. 268.7, generators of ignitable and corrosive wastes that are managed in non-CWA/non- CWA-equivalent/non-Class I SDWA systems must identify the underlying hazardous constituents (as defined in Sec. 268.2) along with the corresponding constituent treatment standards.4

NOTE 4 An important issue that was discussed at the January 13-14, 1993, LDR Evaluation Project Roundtable meeting was the notification/recordkeeping requirements that are currently in place. Today's rule adds certain requirements to the existing notification/recordkeeping system. In response to the concerns expressed by Roundtable participants, however, the Agency will examine all the

notification/recordkeeping requirements of the program to see if they can be simplified.

3. Management of Deactivated Ignitable or Corrosive Wastes at a Subtitle D Waste Management Facility

In certain cases, a generator, after removing the characteristic, may send the deactivated ignitable and corrosive waste off-site to a subtitle D waste treatment facility for treatment to address the underlying hazardous constituents. Such a situation points out a gap in the current regulations. Although the initial generator of the waste would have to comply with Sec. 268.9 as explained above, there is no current requirement that the generator notify a subtitle D nonhazardous waste treater of what the treatment standards are, or for the subtitle D treater to verify compliance with those standards or to notify the ultimate disposal facility as to what the standards are. The Agency is aware that these are deficiencies in the notification, certification, and recordkeeping requirements in this interim final rule as they pertain to nonhazardous waste (non-subtitle C) treatment facilities.

EPA is not creating new requirements in this rule to redress these deficiencies because the Agency believes it is unlikely that decharacterized ignitable and corrosive wastes would be treated sequentially at different facilities. (In addition, the same problem already exists for other Third Third wastes. See 55 FR at 22663, column 1.) It seems much more likely that generators that must send their waste off-site will send it to a subtitle-C hazardous waste management facility to have both the characteristic property removed and to treat the underlying hazardous constituents. Generators who decharacterize their ignitable waste on-site may also be equipped to treat the waste to meet the treatment standards for the underlying hazardous constituents. The Agency solicits comment, however, on whether generators will send their decharacterized wastes to a nonhazardous waste treatment facility for treatment of underlying hazardous constituents. If so, additional comments are solicited on what requirements should be imposed on the generator and on the nonhazardous waste treater to adequately document "cradle to grave" waste management or on whether existing liability and contractual agreements will lead the treater to obtain complete information about each waste shipment. For example, if EPA determines that additional federal regulation is necessary, one option that EPA is considering is to require a generator that decharacterizes an ignitable or corrosive waste and sends it off-site to a nonhazardous waste facility for treatment of the underlying hazardous constituents to provide a notification (see 40 CFR 268.7(a)) to inform the treater of the underlying hazardous constituents in the waste and the applicable treatment standards that must be met. Once the waste is treated to meet the treatment standards for the underlying hazardous constituents, the nonhazardous waste treater would provide a one-time notification and certification to the EPA Region or Authorized state (see 40 CFR 268.9, as amended on August 18, 1992, 57 FR 37194). This would include a recordkeeping requirement that a copy of the notification and certification be maintained in the facility's files. Comments are solicited on such an approach.

The disposer of a waste that was hazardous at the point of generation and prohibited from land disposal has the ultimate responsibility for land disposing only wastes that meet LDR treatment standards (see Sec. 268.37 in this interim final rule which implements the RCRA section 3004(g)(5)

prohibition). This applies to both subtitle C and subtitle D disposers. The Agency assumes that the nonhazardous waste treater is also likely to be the disposer of the waste. Therefore, EPA recommends that generators provide to the nonhazardous waste treater information on what underlying hazardous constituents are present in the decharacterized waste, along with the treatment standards. Furthermore, the nonhazardous treater may want to ask the generator for such information as a condition of doing business, particularly if they are also disposing the waste and so are responsible for meeting the LDR treatment standards before disposal.

J. De Minimis Losses of Characteristic Materials Are Not Prohibited

1. De Minimis Losses of Ignitable (D001), or Corrosive (D002) Commercial Chemical Products or Chemical Intermediates Containing Underlying Hazardous Constituents

Another issue demanding attention as a result of the court's opinion is that of the status of de minimis losses to wastewater treatment systems of commercial chemical products or chemical intermediates that are ignitable (D001), or corrosive (D002), and that contain underlying hazardous constituents.

The Supplemental Information Report discussed whether an approach similar to the mixture rule exception in 40 CFR 261.3(a)(iv)(D) should apply to these de minimis losses. The Agency stated that it would seem incongruous for minor leaks of an acid to a wastewater treatment system, which leaks are inevitable as a practical matter and can most responsibly be handled by management in the plant's wastewater treatment system (46 FR 56583, Nov. 17, 1981), to potentially trigger all of the potential consequences of the Third Third opinion (see Supplemental Information Report, pp. 39-40). Moreover, this result would be more stringent than for de minimis losses of listed wastes (which tend to be more concentrated, 976 F. 2d at 30), since the mixture rule does not apply to such losses. The Agency stated further that it did not believe that the court considered this type of incidental loss when writing its opinion.

Commenters supported the approach discussed in the Supplemental Information Report. Therefore, for the reasons stated in the Report, the Agency is promulgating an approach whereby de minimis losses to wastewater treatment systems of ignitable (D001), or corrosive (D002) commercial chemical products or chemical intermediates containing underlying hazardous constituents are not considered to be prohibited wastes. De minimis is defined as losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges.

2. Wastewaters From Laboratory Operations

The Agency also solicited comments on whether the exclusion for wastewaters from laboratory operations presently applicable to listed wastewaters (see 40 CFR 261.3(a)(2)(iv)(E)) should also apply to ignitable and corrosive wastes covered by this interim final rule. As stated in the Supplemental Information Report, it seems logical that this same type of

exception is needed for ignitable and corrosive wastes. The mixture rule exception for listed wastes has not been seriously questioned since it was adopted in 1981, and these characteristic wastes will typically contain lower concentrations of hazardous constituents than listed wastes. CF. 976 F. 2d at 29-30. Thus, the Agency believes, a fortiorari, that the same exception should apply for these characteristic laboratory wastes. Commenters on this issue all favored such an approach.

The Agency, therefore, is promulgating in 40 CFR 268.1 an exclusion that says that land disposal prohibitions do not apply to ignitable and corrosive laboratory wastes that are commingled with other plant wastewaters under designated circumstances: ignitable and corrosive laboratory wastes containing underlying hazardous constituents from laboratory operations, that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to regulation under the CWA (including wastewaters at facilities which have eliminated the discharge of wastewater), provided that the annualized flow of laboratory wastewater into the facility's headwork does not exceed one percent, or provided that the wastes' combined annualized average concentration does not exceed one part per million in the facility's headwork (the same condition that applies to the existing exemption in 40 CFR 261.3(a)(2)(iv)(E)).

K. Status of Impoundments and Landfills Receiving Decharacterized Ignitable and Corrosive Wastes Subject to a Capacity Variance

Although prohibited wastes that are subject to a national capacity variance that are going to be disposed in landfills or surface impoundments can ordinarily only be disposed in landfills and impoundments that satisfy minimum technology requirements (MTR) (Sec. 268.5(h)(2)), this does not apply to decharacterized prohibited wastes subject to a capacity variance that are disposed in subtitle D units. As the Agency explained in the Third Third rule, the MTR only apply to subtitle C units, and consequently do not apply to subtitle D landfills and impoundments receiving decharacterized wastes. 55 FR at 22664.

IV. Capacity Determinations

This section presents the capacity analysis for ignitable (D001 or I wastes) and corrosive wastes (D002 or C wastes) for which the deactivation (DEACT) treatment standards promulgated in the Third Third rule were vacated by the court and for which new treatment standards are being promulgated today.

A. Data Sources and Limitations

In conducting this analysis, EPA became aware of several limitations in its data. First, data from the 1989 Biennial Report reflect generation and management of IC wastes prior to the Third Third rule coming into effect. Second, the quantities of wastes from the 1989 Biennial Reporting System (BRS) may be underestimated if disposed wastes were diluted very shortly after generation and not reported in the survey (commenters have noted that these wastes have not generally been considered IC wastes). Third, data on constituent concentrations in waste streams and in the residuals from the treatment of IC wastes are very limited. Finally, while the Agency expects that much of the unreported diluted IC wastes are disposed in CWA and SDWA-regulated systems, the Agency has very little information on unreported

quantities of IC wastes affected by this rule.

In addition, the Agency is promulgating alternative treatment standards expressed as required methods of treatment (incineration, fuel substitution, and solvent recovery) for D001 wastes. These methods are the same as those promulgated in a previous rule for the D001 High TOC subcategory. In the Third Third rule capacity analysis, EPA assigned the entire volume of D001 ignitable liquid nonwastewaters to incineration (both high TOC and low TOC) (55 FR 22635) because these categories could not be distinguished in available data. For this analysis, EPA is able to distinguish between liquid and solid nonwastewaters using BRS data. However, the Agency is still unable to distinguish between high and low TOC D001 ignitable liquid nonwastewaters.

Therefore, by assigning the entire quantity of D001 ignitable liquid nonwastewaters subject to this rule to the D001 wastes covered by this rule, the Agency may be overestimating the required capacity for these wastes.

B. Comments on Capacity From the Notice of Data Availability

EPA has received approximately 60 public comments on the Supplemental Information Report prepared for the Notice of Data Availability. Of these, 40 commenters dealt with capacity issues raised in the Supplemental Information Report. However, few commenters addressed issues related to the wastes covered in this rule (i.e., deactivated wastes whose discharges are not regulated under CWA, CWA-equivalence, or Class I SDWA).

Many commenters expressed the need for a capacity variance for wastewater treatment systems in which IC wastes are deactivated. As discussed above, the Agency will address IC wastes managed in CWA/SDWA systems in future rulemakings and will make variance determinations at that time.

Some commenters (e.g., Texaco, Ethyl Corporation) expressed concern that the impact of this rule on Class V injection wells will have significant economic and capacity impacts. Several commenters (e.g., CMA, PMA, Dupont) confirmed that the Biennial Report Survey is likely to underestimate the number of facilities and quantities of wastes potentially affected by this rule because many respondents did not report wastes managed in non-hazardous systems.

C. Methodology and Analysis

In conducting its capacity analysis for this rule, the Agency relied primarily on data from the 1989 Biennial Reporting System (BRS), comments to the Notice of Data Availability and discussions with EPA regional and state officials as well as other knowledgeable persons. The IC wastes potentially affected by this rule are deactivated wastes that are not disposed of in CWA centralized wastewater treatment systems involving impoundments or injected in SDWA-permitted Class I deepwells, or zero discharge facilities performing CWA equivalent treatment of IC wastes before final disposal of those wastes.

EPA's capacity analysis thus focused on treatment and treatment residuals of IC wastes that may not meet the standards promulgated in today's rule, which wastes are currently being deactivated in systems that are not regulated under the types of CWA, SDWA, or CWA-equivalent systems described

above.

1. Treatment and Treatment Residuals

Treatment and residuals from the treatment of IC wastes may be affected by today's rule and require additional treatment. Tables IV-1 and IV-2 show the quantities of D001 and D002 wastes going to on- and off-site incineration, reuse as fuel, stabilization systems, solvent recovery and evaporation, according to the 1989 Biennial Report. These tables are organized to show the quantities of wastes potentially affected by this rule. Whether IC wastes are affected depends on whether they are managed alone or with other codes and on how they are currently treated.

Table IV-1 shows wastes treated in off-site systems, while Table IV-2 shows wastes treated in on-site systems. The first row of these tables contains the quantities of wastes carrying only the D001 waste code. The second row contains the quantities of wastes carrying only the D001 code, and any D004- 11 codes. These waste streams do not carry any listed codes, or other characteristic codes. The third row contains the quantities of wastes carrying the D001 code, any D004-11 code, along with any listed or characteristic codes the stream may also carry. The fourth row shows the quantities of wastes carrying the D001 code, and a solvent code (F001-5), but no other codes. The fifth row shows the quantities of wastes in wastes streams carrying the D001 code, a solvent code (F001-5), and any other code.

The sixth row contains the quantities of wastes only carrying both D001 and D002 codes. The final three rows are similar to the first three, reporting quantities of wastes carrying only D002, D002 with any D004-11, and all streams with D002 and D004-11 as well as any other listed or characteristic codes. It should be noted that the Biennial Report only allows one system code to be checked per waste stream. Therefore, wastes that are incinerated prior to being stabilized are not likely to appear in the stabilization totals. The Agency believes that the majority of D001 waste streams are being treated in combustion systems, and will not be affected by today's rule.

Tables IV-1 and IV-2 show that approximately 7,000 tons of D001 wastes are reported to be stabilized as their primary treatment. By today's rule, these wastes may require incineration, reuse as fuel, or solvent recovery as their initial treatment.

Table IV-2 shows that relatively large quantities of D002 are reported in the Biennial Report as being treated in combustion systems (D001-2 Only, and D002 & D004-11 mixed with other codes). Approximately 300,000 tons of D002 wastes are managed on-site in combustion systems. Of these wastes, 70,000 tons are mixed with metal wastes and other codes. Assuming a 10 percent residuals to waste ratio, EPA expects that approximately 10,000 tons of D002 wastes mixed with metal codes may require additional treatment, provided the constituent concentrations in the ash exceed today's treatment standards.

Table IV-1.--Quantities of Wastes Treated in Off-site Incineration, Reuse as Fuel, and Stabilization, Solvent Recovery and Evaporation Systems (tons/year)

	Reuse as		Solvent

	Incineration	fuel	Stabilization	recovery	Evaporation
2D001Only	NA	NA	2,379	NA	0
D001 and D004-11					
Only	NA	NA	429	NA	0
D001 and D004-11					
Mixed with other					
codes	NA	NA	462	NA	NA
D001 and F001-5					
only	NA	NA	118	NA	NA
D001 and F001-5					
mixed with other					
codes	NA	NA	11	NA	NA
D001-2	5,066	566	923	1,230	0
D002 Only	23,647	370	5,768	13,894	42
D002 and D004-11					
Only	1,119	663	4,177	239	88
D002 and D004-11					
mixed with other					
codes	9,054	1,779	9,017	45	NA

Source: 1989 Biennial report.
NA=Not applicable.

Table IV-2.--Quantities of Wastes Treated in On-site Incineration, Reuse as Fuel, and Stabilization, Solvent Recovery and Evaporation Systems (tons/year)

	Reuse			Solvent	
	Incineration	as fuel	Stabilization	recovery	Evaporation
D001 Only	NA	NA	420	NA	1,075
D001 and D004-11					
Only	NA	NA	2	NA	0
D001 and D004-11					
Mixed with					
other codes	NA	NA	1,266	NA	NA
D001 and F001-5					
only	NA	NA	34	NA	NA
D001 and F001-5					
mixed with					
other codes	NA	NA	1,255	NA	NA
D001-2	108,518	124,807	0	548	0
D002 Only	5,287	3,372	1,097	38	835
D002 and D004-11					
Only	16	0	4	0	101
D002 and D004-11					
mixed with					
other codes	26,484	46,638	1,277	4	NA

Source: 1989 Biennial report.
NA=Not applicable.

2. IC Wastes Currently Deactivated Covered By This Rule

In order to estimate the potential quantities of IC wastes affected by this rule, EPA extracted data from the BRS on IC wastes managed in surface impoundments whose discharges are not regulated under CWA or SDWA (as explained above). Data from the BRS indicates that 99.9% of all waste quantities disposed of in surface impoundments are discharged under CWA or in SDWA Class I wells. EPA believes that IC wastes are land disposed in the same proportions as other wastes; therefore, EPA believes that most IC wastes that are placed in surface impoundments are part of a CWA system or

sent to Class I wells. The Agency estimates that approximately 1,000 tons of D001 wastes may be managed in evaporation systems--that is, wastes that are subject to today's rule. These wastes may require alternative treatment capacity if the underlying hazardous constituents in these wastes are above F039 standards.

EPA has not assigned these quantities to treatment technologies because of the lack of data on constituent composition in these evaporation systems.

The Agency has also become aware of wastewater treatment systems that are not regulated under CWA/SDWA and that may be impacted by this rule. (As described earlier, only those zero-discharge facilities that do not provide CWA-equivalent treatment would be impacted by today's rule.) These systems are generally state-regulated through zero discharge, land application, or ground-water protection permits. State data received by EPA did not indicate whether the wastes discharged under these systems are IC wastes or contain decharacterized IC wastes or what constituent levels are allowed in the state permits. Furthermore, state standards exist either on a case-by-case basis or in general form and are not necessarily consistent across states.

States generally require treatment of wastes regulated through no-discharge permits. EPA has determined that many of these facilities are providing treatment similar to other facilities whose discharges are regulated under CWA. As explained above, the Agency has determined that such zero discharge systems will be addressed at a future date, along with similar CWA discharge systems. The Agency believes that most of the wastes regulated by states through no-discharge, land application, or ground-water protection permits receive treatment similar to CWA discharge systems and are therefore not covered by this rule.

In addition, deactivated IC wastes that currently are disposed without CWA- equivalent treatment into UIC program injection wells other than Class I wells would be affected by today's rule to the extent that these wastes do not meet F039 standards. In particular, commenters to the Notice of Data Availability voiced concerns about Class II and Class V wells.

As described in section I.F above, after an examination and evaluation of the comments received on the Notice of Data Availability, the Agency believes that Class II UIC wells reinjecting oil and gas primary production wastes are not newly impacted by this rule.

Data available to EPA indicates that there may be up to 200,000 industrial Class V wells. Because of the lack of waste characterization data, it is not known how many of these wells receive deactivated IC wastes or would meet F039 treatment standards before injection. Typical quantities of wastes injected in these wells vary widely between 35 and 1,000 gallons per week.

EPA estimates that approximately 15,000 tons per year of wastes injected in Class V wells may contain deactivated IC wastes. This estimate takes into account that some of these wastes receive treatment prior to Class V injection and are either likely to meet F039 standards or to be CWA equivalent zero dischargers (and thus not be impacted by today's rule).

The Agency suspects that many of these Class V wells fall under the Small Quantity Generator (SQG) exclusion and are conditionally exempt from RCRA requirements, including the LDRs (see 268.1(e)(1)). From the information gathered, and comments received on the Notice of Data Availability, EPA

further believes that a number of the deep Class V wells treat their wastes prior to injection, and thus would not be affected by this rule if such a practice would qualify them as a CWA-equivalent facility.

3. Affected Facilities

Table IV-3 shows the number of facilities which indicated in the BRS that they treated D001 and D002 wastes in incineration, reuse as fuel, solvent recovery, stabilization, and evaporation systems. The table shows both the number of facilities managing IC wastes on-site and those treating wastes received from off-site. These include commercial treatment and company-captive treatment facilities.

The first two rows of Table IV-3 show the number of facilities which reported sending waste streams carrying a D001 code, and any other D codes, but no listed codes, to stabilization and evaporation systems. The next three rows show the number of facilities which reported sending waste streams carrying both the D001 and D002 codes, and any other D codes, but no listed codes, to incineration, reuse as fuel, and solvent recovery systems. The last five rows show the number of facilities which reported sending waste streams carrying a D002 code, and any other D codes, but no listed codes, to stabilization, incineration, reuse as fuel, evaporation, and solvent recovery systems.

Overall, Table IV-3 indicates that 73 facilities with on-site treatment systems and 279 commercial and company-captive facilities may be affected by this rule. On-site treatment facilities may have to reconfigure their current treatment systems to include additional technologies. Commercial facilities are also included as potentially affected although EPA recognizes that these facilities have some discretion in their decision to accept or reject wastes for treatment.

EPA contacted state officials to obtain information on non-CWA/SDWA systems that are state-regulated through zero discharge land application permits, as discussed in the previous section. Based on professional judgement, EPA estimates that approximately 100 facilities regulated under these state programs may manage deactivated IC wastes.

Following discussions with regional and state officials, EPA has determined that the types of Class V industrial wells that may be impacted by this rule are:

** Industrial process water and waste disposal wells that are used to dispose of a wide variety of wastes and wastewaters from industrial, commercial, or utility processes. Industries include refineries, chemical plants, pharmaceutical plants, laundromats and dry cleaners, tanneries, laboratories, petroleum storage facilities, electric power generation plants, car washes, electroplating industries, etc.

** Automobile Service Station Disposal Wells that inject wastes from repair bay drains at service stations, garages, car dealerships, etc.

However, the Agency believes that many of these facilities are either Small Quantity Generators (SQGs), or generate IC wastes from de minimis losses of ignitable or corrosive products, as described in this rule, or treat their wastes in CWA-equivalent systems before permanent disposal, and are therefore not covered by this rule. Based on contacts with regional and

state officials, EPA estimates that fewer than 100 facilities with Class V wells may be impacted. These include primarily wastes from industrial facilities that are not treated prior to injection, and wastes from large repair/ maintenance facilities. The Agency solicits comment on estimates, as well as additional information on the number of Class V wells, the types of wastes, and the volumes of such wastes injected.

Table IV-3.--Number of Facilities Potentially Impacted by This Rule

Type of waste	Type of treatment	Number of facilities receiving on-site treatment	Number of facilities receiving off-site treatment	Number of facilities reporting wastes from off-site
Waste streams carrying at least a D001 code, may have any other D code but no listed codes	Stabilization	4	64	
Waste streams carrying at least a D001 code, may have any other D code but no listed codes	Evaporation	3	3	
Waste streams carrying at least a D001 and D002 code, may have any other D code but no listed codes	Incineration	22	89	
Waste streams carrying at least a D001 and D002 code, may have any other D code but no listed codes	Reuse as fuel	9	31	
Waste streams carrying at least a D001 and D002 code, may have any other D code but no listed codes	Solvent recovery	1	27	
Waste streams carrying at least a D002 code, may have any other D code but no listed codes	Stabilization	8	93	
Waste streams carrying at least a D002 code, may have any other D code but no listed codes	Incineration	44	206	
Waste streams carrying at least a D002 code, may have any other D code but no listed codes	Reuse as fuel	11	67	
Waste streams carrying at least a D002 code, may have any other D code but no listed codes	Evaporation	7	2	
Waste streams carrying at least a D002 code, may have any other D code but no listed codes	Solvent recovery	4	78	
Total facilities affected, on-site and off-site	All of the above	73	279	
Total number of unique facilities affected	All of the above /1/	338		

/1/ This total does not add up to the totals of the two columns because it includes facilities that report they treat wastes generated on-site as well as received from off-site. Source of data: 1989 Biennial report.

D. Variance Determinations

The Agency's analysis indicates that the quantities of wastes potentially affected by this rule is relatively small, approximately 30,000 tons per year. EPA estimates that there is 750,000 tons of combustion capacity for liquids and solids, and over 1,000,000 tons of stabilization treatment capacity. Therefore, a capacity extension is not generally warranted. However, capacity to provide additional treatment for these wastes may not be immediately available. Therefore, in order to allow all generators and off- site treatment facilities the time necessary to install additional treatment equipment that may be needed, and to perform the necessary testing procedures to determine whether their wastes are affected by this rule, the Agency is granting a 90-day national capacity variance from the effective date of this rule to ignitable (D001) and corrosive (D002) wastes covered under this rulemaking.

As noted above, the Agency believes that most of the Class V wells which could be potentially impacted by this rule either fall under the Small Quantity Generator (SQG) exclusion and are conditionally exempt from RCRA requirements, including the LDRs (see 268.1(e)(1)), or have CWA-equivalent treatment systems and are therefore not affected by today's rule. As an interim measure, however, the Agency is granting a national capacity variance extending the effective date of today's rule for nine months from the date of signature for decharacterized ignitable and corrosive wastes injected into Class V wells in order for the facility to determine: (1) If it is impacted; (2) to develop appropriate on-site modifications for alternative treatment; (3) to obtain off-site treatment; and, if necessary, submit petitions for case-by-case capacity variances (see section IV of this preamble). The Agency also solicits additional information on the number of Class V wells, the types of wastes, and the volumes of such wastes injected. The Agency believes that it would be prudent for these Class V wells to apply for case-by-case extensions of the effective date during this nine-month extension period.

The Agency wishes to emphasize that deactivated IC wastes regulated under CWA/CWA-equivalent/SDWA will be addressed in future rulemakings. Current treatment standards for wastes managed in these systems remain in effect.

V. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect as RCRA requirements

in an authorized State until the State adopted the requirements as State law, and EPA approved the State's revisions.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in Federally authorized States in the interim.

Today's rule is being promulgated pursuant to sections 3004 (d) through (k), and (m), of RCRA (42 U.S.C. 6924 (d) through (k), and (m)). It is added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and that take effect in all States, regardless of their authorization status. States may apply for either interim or final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate that this rule is a self-implementing provision of HSWA.

B. Effect on State Authorization

As noted above, EPA is today finalizing an interim rule that will be implemented in non-authorized and authorized States until their programs are modified to adopt these rules and the modification is approved by EPA.

Because the rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21.

Section 271.21(e)(2) requires that States with final authorization must modify their programs to reflect Federal program changes and to subsequently submit the modification to EPA for approval. The deadline by which the State would have to modify its program to adopt these regulations is specified in Sec. 271.21(e). The deadline is July 1, 1994, because this rulemaking was finalized on or before June 30, 1993. This deadline can be extended in certain cases (see Sec. 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements, and the State assumes responsibility for this implementation.

States with authorized RCRA programs may already have requirements similar to those in today's final rule. These State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, states with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit their first official applications for final

authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. However, the State must modify its program by the deadline set forth in Sec. 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a state must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

The regulations being finalized today need not affect the State's Underground Injection Control (UIC) primacy status.

VI. Regulatory Requirements

A. Economic Impact Screening Analysis Pursuant to Executive Order 12291

Executive Order No. 12291 requires that a regulatory agency consider for each regulation the potential benefits as compared to the potential costs to society. To this end, for all major rules, a Regulatory Impact Analysis (RIA) must be conducted. An RIA is a quantification of the potential benefits, costs, and economic impacts of a rule. A major rule is defined as a regulation estimated to result in:

** An annual effect on the economy of $100 million or more; or

** A major increase in costs or prices for consumers, individuals, industries, Federal, State, and local government agencies, or geographic regions; or

** Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

The Agency conducted a screening analysis to learn whether the costs incurred under the today's rule exceed $100 million annually, thus making it a major rule. EPA determined that the incremental cost of the rule is between $8 and $13 million per year. Because today's rule is a minor rule, the Agency has prepared an Economic Impact Screening Analysis (EIA), analyzing the costs and economic impacts of the rule. The Agency has not performed a quantification of the benefits attributable to today's rule.

The discussion which follows addresses the methodology and results of the EIA. The methodology section summarizes the approach taken for determining the volumes, costs and economic impacts associated with today's rule. The results section describes the results for the volume, cost and economic impact estimations. A more detailed description of the methodology and results sections may be found in the "Economic Impact Analysis for the Interim Final Rule in Response to the Third Third Court Case," which has been placed in the docket for today's rule.

1. Methodology

a. Estimation of Affected Volumes--Overview. The volume addressed in today's rule covers the ignitable (D001) and corrosive (D002) (IC) wastes with hazardous constituents at levels greater than the F039 treatment standards that are managed at facilities other than those whose discharge is regulated under the CWA, zero-discharge facilities engaging in

CWA-equivalent treatment prior to land disposal, and facilities injecting these wastes into Class I deep injection wells regulated under the SDWA. Because of differences in baseline and post-regulatory management practices for D001 and D002 liquids and treatment residuals, EPA considered these three subsets of affected wastes separately in its analysis.

The Agency relied heavily on three sources of information to develop an estimate of the waste volumes affected by today's rule. The 1989 BRS provided D001 and D002 quantities as reported to EPA by large quantity generators. EPA used the 1986 Treatment, Storage, Disposal and Recycling Facility Survey (TSDR) and 1989 telephone survey update performed by OSW to help estimate the proportions of (1) liquid wastes discharged directly (i.e., without placement in a land based unit) under the CWA, and (2) liquid wastes placed in a surface impoundment with no discharge. Thirdly, EPA used responses to the Questionnaire for Facilities that Land Dispose Newly-Identified Organic TC Wastes (referred to hereafter as the 1992 TC Survey) to update wastewater management information collected for the TSDR and the subsequent 1989 telephone update. A more detailed description of the Agency's volume estimation process is described in the background document in the docket for today's rule.

It should be noted that in estimating the affected volumes for today's rule there is a volume of D001 and D002 never reported as hazardous waste in the Agency's survey data. While the Agency performed a sensitivity analysis to determine how this unreported quantity may increase the impact of today's rule, the lack of data presented limitations to the analysis.

b. Estimation of Affected Volumes--Liquids. The Agency employed the BRS to identify, using information on treatment practices for liquids, which liquids could potentially be managed on the land. EPA then used factors to approximate the quantities of liquids: (1) that could be placed on the land, and (2) that would not be managed in systems regulated under the CWA/CWA- equivalent/SDWA not affected by today's rule. To determine these factors, the Agency reviewed waste management information from the TSDR, as modified by the 1989 telephone update. The Agency then employed information collected as part of the 1992 TC Survey which indicated that 8 of the 10 largest generators of potentially land-disposed liquids, as reported in the 1989 BRS, no longer had surface impoundments. EPA linked this information to the management information contained in the TSDR, and determined that in general only 13 percent of liquids are managed in surface impoundments during treatment, storage or disposal. Therefore, EPA multiplied all the D001 and D002 liquid volumes it obtained from the BRS by 13 percent to estimate the quantities of D001 and D002 likely managed on the land.

In developing a generic factor to estimate quantities of D001 and D002 liquids affected by today's rule, the Agency first assumed that any liquids in the 1986 TSDR survey denoted as being managed in treatment or storage impoundments were being managed in those units temporarily, and would eventually be discharged pursuant to CWA regulations. Furthermore, EPA assumed that liquids denoted in the TSDR as being managed in surface impoundments with no discharge were managed in those units permanently and would not be regulated under these two statutes. Based on these two assumptions of surface impoundment management, EPA estimated that one percent of the liquids managed in land-based units are permanently managed in these units, and are not subsequently discharged through systems regulated under the CWA or SDWA, or receiving CWA-equivalent treatment. Therefore, by combining its two factors (i.e., 13 percent and 1 percent),

EPA estimated that, in general, only 0.13 percent of potentially land-disposed liquids in the 1989 BRS would be affected by today's rule. EPA applied this percentage generically to all IC waste to determine the waste quantities for its cost analysis.

c. Estimation of Affected Volumes--Residuals. As EPA has specified treatment methods for D001 wastes, which if used remove the burden of testing for compliance, the Agency is assuming that the only costs incurred under today's rule for the treatment of residues will be incurred for those residues generated from the treatment of D002 wastes. To determine the quantity of residuals affected by today's rule, the Agency used the 1989 BRS data to identify the volumes of D002 liquids, sludges, and solids currently going to three categories of treatment: incineration, fuel substitution, and recovery of organics. EPA then developed residual factors for the combinations of waste forms and treatment categories. EPA assumed, as an upper bound, that at least one constituent concentration in the residuals would exceed the treatment standards in every case. However, because the treatment technologies currently being employed to treat D002 are effective in destroying or removing organics, EPA assumed that these residuals would only require stabilization to reduce leachable levels of metals. In other words, EPA assumed that all residuals would fail the treatment standards, but only for metals, and therefore would require treatment in the form of stabilization in all cases. EPA considered the solid fraction of waste only, expecting that any facility with substantial liquid residuals will already have a treatment system regulated under the CWA or SDWA.

d. Estimation of Affected Volumes--Affected Class V Wells. To estimate the volumes of waste from the affected Class V wells, the Agency drew from volume estimates prepared by the Office of Water for work on a Class V injection well proposed rule. The volume estimating process is described in greater detail in the "Economic Impact Analysis for the Interim Final Rule in Response to the Third Third Court Case," which has been placed in the docket for today's rule.

The Agency used estimates of the number of wells affected, and the disposal rate of waste for model wells in order to develop an estimate of the total annual disposal rate of waste in tons per years for the Class V wells. Next, EPA approximated the percentage of this total volume which would be IC waste, and thus potentially covered under today's rule. This approximation was derived using the 1989 BRS Summary Report and the 1990 RIA for the Third Third LDR. This interim result represents the total annual amount of IC waste disposed in Class V wells. Using this result, the Agency estimated those volumes which are managed under the small quantity exemption, and therefore would not be affected by today's rule. Further, EPA estimated the volumes which have hazardous constituents below F039 levels, and so would also not be affected by today's rule. The resultant volume represents the total amount of Class V injected waste affected by today's rule.

e. Estimation of Costs Incurred--Liquids, Residuals and Affected Class V Wells. To estimate the range of costs expected to be incurred as a result of today's rule, the Agency developed baseline and post-regulatory management assumptions for IC wastes. The incremental costs of the rule are derived by comparing baseline costs with the costs resulting under the post-regulatory scenario.

The baseline waste management scenario for all IC waste is assumed to be deactivation followed by subtitle D disposal. Treatment to comply with

standards set in today's rule will vary widely, depending on the chemical composition and physical form of the waste. Because of data limitations, it is impossible to predict exact treatment technologies which would be employed by waste management facilities; thus, the Agency relied on assumptions to estimate the upper-bound of the post-regulatory compliance cost.

The Agency employed an upper-bound estimate that all facilities managing wastewaters in non-CWA/non-CWA-equivalent/non-SDWA systems would incur the cost of switching from land-based units to tanks. This approach overestimates the true cost for those facilities that choose rather to employ treatment and testing where found to be less costly than replacement with tanks. For certain facilities where replacement with tanks is not an option, however, this approach may not be overestimate. The Agency developed cost functions for replacement with tanks. These detailed assumptions are presented in the "Economic Impact Analysis for the Interim Final Rule in Response to the Third Third Court Case."

For the residuals from thermal treatment (e.g., incineration, reuse as fuel, solvent recovery), the Agency assigned stabilization treatment to the total volume of residual, followed by subtitle D disposal of the stabilized mass. The Agency used a range of stabilization unit costs between $108/ton and $210/ton, to estimate the cost of residuals management under today's rule. However, as the $210/ton cost includes subtitle C disposal, it should be viewed as a high bound cost.

For the last category of wastes addressed under today's rule, the wastes attributed to Class V wells, the Agency used the total volume estimate developed above with a unit cost of $240 per ton of waste treated to produce a total cost estimate for the rule. This approach was required due to the lack of data and time for the analysis of Class V wells. The $240 per ton is for the post-regulatory treatment technology, and is equivalent to many technologies which might be chosen, such as: chemical precipitation, carbon absorption or biological treatment. As the Agency has not been able to focus on the exact volume affected by today's rule, nor does the Agency have knowledge on the possible treatments used in the post-regulatory scenario, this estimate is a high-bound estimate for the Class V wells.

f. Estimation of Costs Incurred--Testing Costs. There could be analytic costs incurred under today's rule for residues from treating D002 wastes, and for D001 wastes not treated by combustion or reclamation technologies. While some managers of potentially affected D001 and D002 wastes and residues may ultimately use professional knowledge to determine whether they meet the treatment standards, testing will likely be necessary for a short period following promulgation of today's rule.

The Agency believes that the testing costs in the long-term will be negligible, as it is believed that facilities will shift to using professional knowledge following initial testing. In addition, the facilities not using a specified method, and thus require testing, may only require testing for the presence of metals. However, the Agency has estimated a high- bound cost for testing assuming that half of the affected facilities would perform testing, rather than using professional knowledge. With the cost of testing for all F039 constituents estimated to be $3000 per test, the Agency determined a total annual testing cost figure of approximately $1 million.

g. Estimation of Costs Incurred--Reporting Requirements. Permitted treatment facilities that have Waste Analysis Plans requiring a permit modification in order to be able to treat underlying hazardous constituents will be impacted by today's rule. As mentioned previously in this preamble, such modifications may be made through a Class 1 permit modification with prior approval. (Also, see amendment to 40 CFR 270.42 promulgated as part of today's rule.)

The Agency, employing standard assumptions of number of burden hours for a Class 1 permit modification with prior approval, estimates the costs incurred as a result of these reporting requirements to be $10,500. A more detailed discussion of the costing procedure for reporting requirements is included in the Economic Impact Analysis background document for today's rule.

h. Methodology for Economic Impact Analysis. As facility-specific cost data are not available for the affected volumes in today's rule, EPA is not able to conduct a quantitative economic impact analysis. However, given the time and data available, the Agency prepared an examination of the costs of today's rule, disaggregated by 2-digit SIC codes, in the Economic Impact Analysis background document prepared for this interim final rule and available in the RCRA docket.

B. Results

a. Results of Affected Volumes Estimation

EPA conservatively estimates an upper bound of 73,000 tons of liquids (not including those sent to Class V wells); 36,000 tons of residuals from treatment; and 15,000 tons of liquids going to Class V wells being affected by today's rule. The volume of liquids is low because most facilities have established systems that utilize exempt units (i.e., tanks) or centralized treatment whose discharge is ultimately regulated under the CWA and SDWA. The volumes attributed to Class V wells are low because the majority of Class V wells are small quantity generators, or do not have wastes which have hazardous constituents at levels above the F039 treatment levels. It should be noted that, the Agency analysis overestimates quantities affected in that it typically does not account for the volumes which would already meet treatment standards and thus not require additional treatment under today's rule (except in the case of Class V wells).

b. Results of Incremental Costs Incurred

In developing its method to assess the cost of today's rule, the Agency has relied on several conservative assumptions. The Agency estimates that the compliance cost of today's rule is between $8 and $13 million annually. Table VI-1 presents the estimates for each category of affected waste.

Table VI-1.--Upper-Bound Compliance Cost of the Rule by Waste Type

Waste type	Quantity affected (tons/yr)	Incremental compliance cost ($ million/yr)
Liquids	73,000	<0.5
Residuals	36,000	3.9 to 7.6
Class V Wells	15,000	3.5

Analytical costs	0 to 1.0
Total	7.9 to 12.6

d. Sensitivity Analysis of Cost Results

The Agency's sensitivity analysis covered only the potentially missing volume of IC waste currently being deactivated and managed as nonhazardous waste. The Agency's sensitivity analysis portrays possible quantities of deactivated IC waste, and the resultant cost ramifications in an order of magnitude approach. A more thorough examination of the limitations in the analysis of today's rule is included in the "Economic Impact Analysis for the Interim Final Rule in Response to the Third Third Court Case" background document, which has been placed in the docket for today's rule.

The Agency believes that all deactivated IC volumes managed as nonhazardous waste would be wastewaters (i.e.: liquids), as sludges and solids are not typically managed through exempt units. The Agency's estimate of quantities of affected liquids, as shown in Table VI-1, is 73,000 tons per year. The resulting incremental cost for this 73,000 tons per year of liquid waste is <$0.5 million per year.

Therefore, if the 73,000 tons per year is doubled as a result of these nonhazardous IC volumes which are not captured in today's analysis, the resulting incremental costs for liquids would be approximately $1.0 million per year. If the quantity was multiplied by 5, the resulting cost would be approximately $2.5 million per year. If the quantity was multiplied by 10 times, the cost would be roughly $5 million per year. And finally, if the volume was multiplied by 50, so that the volume was 3.65 million tons per year, the incremental cost would be approximately $25 million per year.

The Agency emphasizes that the volume and cost estimates presented in Table VI-1 are upper-bound estimates derived by applying a series of conservative assumptions that were useful given the absence of substantial detailed data.

It is acknowledged that some volume of IC waste may exist which is managed as nonhazardous waste currently, and therefore not accounted for in the EPA's estimate. The Agency's sensitivity analysis should be viewed as order-of- magnitude estimates, providing a screening level examination of potential costs for a series of hypothetical volumes.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 et seq., when an agency publishes a notice of rulemaking, for a rule that will have a significant effect on a substantial number of small entities, the agency must prepare and make available for public comment a regulatory flexibility analysis that considers the effect of the rule on small entities (i.e.: small businesses, small organizations, and small governmental jurisdictions). Under the Agency's Revised Guidelines for Implementing The Regulatory Flexibility Act, dated May 4, 1992, the Agency committed to considering regulatory alternatives in rulemakings when there were any economic impacts estimated on any small entities. Previous guidance required regulatory alternatives to be examined only when significant economic effects were estimated on a substantial number of small entities.

In assessing the regulatory approach for dealing with small entities in today's rule, the Agency considered three factors. First, due to the low

annual incremental cost of $7.9 million estimated for today's rule, the Agency anticipates minimal impacts on small entities. Second, data on potentially affected small entities are unavailable. And third, due to the statutory requirements of RCRA, no legal avenues exist for the Agency to provide relief from the LDR's for small entities. The only relief available for small entities are the existing small quantity generators and conditionally exempt small quantity generator exemptions found in 40 CFR 262.11-12, and 261.5, respectively. These exemptions basically prescribe 100 kilograms (kg) per calendar month generation of hazardous waste as the limit below which one is exempted from complying with the RCRA standards.

Given these three factors, the Agency was unable to frame a series of small entity options from which to select the lowest cost approach; rather, the Agency was legally bound to one approach. It can only be stated that minimal impacts are anticipated for small entities under the approach employed in dealing with the issues in today's rule.

C. Paperwork Reduction Act

With the exception of the requirement to include the underlying hazardous constituents on the notification, the information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and have been assigned control number 2050-0085.

The information collection requirements associated with the amended notification requirements, requiring generators and treaters of certain D001 and D002 wastes to include the underlying hazardous constituents on the notification, have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.
These requirements are not effective until OMB approves them and a technical amendment to that effect is published in the Federal Register. An Information Collection Request document has been prepared by EPA (ICR No. 1442.05) and a copy may be obtained from Sandy Farmer, Information Policy Branch, EPA, 401 M Street, SW. (PM-223Y), Washington, DC 20460 or by calling (202) 260-2740.

Public reporting burden for this collection of information is estimated to average about 3 to 6 hours per response for generators and 3 hours per response for treaters, including time for reviewing instructions, searching existing data sources, gathering and maintaining the required data, and completing and reviewing the collection of information.

Send comments regarding the burden estmate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223Y, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Jonathan Gledhill."

VII. Interim Final Rule Justification

EPA finds that there is good cause to issue this rule as an interim final rule, without having first proposed it. (The Agency notes, however that the Notice of Data Availability and the accompanying Supplemental Information

Report did provide substantial notice to affected parties of, and an opportunity to comment on, the types of action the Agency is taking here, and specifically put persons on notice that there might not be any further opportunity for public comment before the Agency took final action. Thus, it is not clear that EPA is required to invoke the good cause exception to the Administrative Procedure Act's notice and comment requirements. (5 U.S.C. 553 (b)(3)(B).) Because the treatment standards for certain ignitable and corrosive wastes were vacated, once the courts mandate issues, a situation will exist whereby those wastes cannot be land disposed (except in no- migration units) unless EPA repromulgates a treatment standard. This creates a bona fide emergency, because without a legal means to dispose of wastes, production would have to stop. It is impractical to follow notice and comment rulemaking procedures in time to avoid this result, and thus the good cause exemption is justified. 5 U.S.C. 553(b)(3)(B).

It has been argued that EPA could stay the prohibition to prevent this situation from arising. The Agency disagrees. In the first place, EPA believes that the prohibition that is operating is not merely regulatory but statutory as well, since it involves wastes that were covered (for this purpose) by RCRA section 3004(g)(5) and the absolute prohibition (generally termed the hard hammer) in RCRA 3004(g)(6)(C).5 See 976 F. 2d at 18-19 ("(Congress) has chosen to enforce (the statutory deadlines) by decreeing that any hazardous waste that is not covered by a valid regulation within the date specified will be denied land disposal" (emphasis added).) Second, even without invoking the hard hammer, EPA does not believe the statute allows a situation whereby a prohibition date has passed, and wastes covered by that prohibition can be land disposed without treatment (unless, of course, the wastes are subject to some type of capacity variance or are being disposed in a no-migration unit). Yet this is the necessary consequence of arguing that EPA may permissibly stay a prohibition once the prohibition date has passed.

Consequently, it is the Agency's view that unless it issues treatment standards to replace those vacated by the court, there would be an absolute prohibition of land disposal of the affected wastes, and that in light of this, there is good cause to issue the present interim final rule restoring treatment standards for those wastes.6

NOTE 5 For reasons discussed below in the preamble text, the Agency reads the hard hammer as applying to characteristic as well as listed wastes. This has been the Agency's position on the issue, see, e.g., 56 FR at 41165 (Aug. 19, 1991), and reflects Congressional intent. H. Rep. No. 1133, 98th Cong. 2d Sess. at 88 (Conference Report). The Agency is aware of arguments that the hard hammer provision need not apply here, either because the Agency has already met its obligations by issuing rules for characteristic wastes, or because the hard hammer can be read as not applying to characteristic wastes.

The Agency does not find these arguments persuasive. In the end, there is no reason that prohibitions should operate differently for characteristic and listed wastes. Furthermore, the necessary consequence of these arguments is that characteristic wastes could be disposed for a relatively indefinite period without having to be treated to satisfy the RCRA 3004(m) standard, even though the section 3004(g)(5) prohibition date has passed. The Agency does not believe that the statute can reasonably be interpreted to give this result.

NOTE 6 At the least, this is a permissible interpretation of the land disposal statutory provisions, which in essence command that prohibited wastes be pretreated before land disposal, and make this a paramount statutory objective (RCRA sections 1002(b)(7) and 1003(a)(6)).

List of Subjects

40 CFR Part 264

Hazardous waste, Packaging and containers, Reporting and recordkeeping requirements.

40 CFR Part 265

Hazardous waste, Packaging and containers.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 270

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: May 10, 1993.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I, of the Code of Federal Regulations is amended as follows:

PART 264--STANDARDS FOR OWNER AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

2. Section 264.1, paragraph (g)(6) is revised to read as follows:
Sec. 264.1 Purpose, scope and applicability.

* * * * * *

(g) * * *
(6) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in Sec. 260.10 of this chapter, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Sec. 268.42, Table 2, of this chapter), or corrosive (D002) waste, to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in Sec. 264.17(b) of this part.

* * * * *

PART 265-INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

4. Section 265.1, paragraph (c)(10) is revised to read as follows:

Sec. 265.1 Purpose, scope and applicability.

* * * * * *

(c) * * *
(10) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in Sec. 260.10 of this chapter, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Sec. 268.42, Table 2, of this chapter), or corrosive (D002) waste, in order to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in Sec. 265.17(b).

* * * * *

PART 268--LAND DISPOSAL RESTRICTIONS

5. The authority citation for part 268 continues to read as follows:
Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

6. In Sec. 268.1, paragraphs (e) (4) and (5) are added to read as follows:

Sec. 268.1 Purpose, scope /and applicability.

* * * * *

(e) * * *
(4) De minimis losses to wastewater treatment systems of commercial chemical product or chemical intermediates that are ignitable (D001), or corrosive (D002), and that contain underlying hazardous constituents as defined in Sec. 268.2 of this part, are not considered to be prohibited wastes. De minimis is defined as losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to

transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges.

(5) Land disposal prohibitions do not apply to laboratory wastes displaying the characteristic of ignitability (D001) or corrosivity (D002), that are commingled with other plant wastewaters under designated circumstances: ignitable and corrosive laboratory wastes containing underlying hazardous constituents from laboratory operations, that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to regulation under the CWA (including wastewaters at facilities which have eliminated the discharge of wastewater), provided that the annualized flow of laboratory wastewater into the facility's headwork does not exceed one percent, or provided that the laboratory wastes' combined annualized average concentration does not exceed one part per million in the facility's headwork.

7. In Sec. 268.2, paragraph (i) is added to read as follows:

Sec. 268.2 Definitions applicable in this part.

* * * * *

(i) Underlying hazardous constituent means any regulated constituent present at levels above the F039 constituent-specific treatment standard at the point of generation of the hazardous waste.

8. In Sec. 268.7, the introductory text of paragraph (a), and paragraphs (a)(1)(ii) and (b)(4)(ii) are revised to read as follows:

Sec. 268.7 Waste analysis and recordkeeping.

(a) Except as specified in Sec. 268.32 if a generator's waste is listed in 40 CFR part 261, subpart D, the generator must test his waste, or test an extract using the test method described in part 261, appendix II of this chapter, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this part. Except as specified in Sec. 268.32, if a generator's waste exhibits one or more of the characteristics set out at 40 CFR part 261, subpart C of this chapter, the generator must test an extract using the test method described in appendix IX of this part, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this part. If the generator determines that his waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by INCIN, FSUBS, or RORGS of Sec. 268.42, Table 1), or the characteristic of corrosivity (D002), and is prohibited under Sec. 268.37, the generator must determine what underlying hazardous constituents (as defined in Sec. 268.2 of this part), are reasonably expected to be present in the D001 or D002 waste.

(1) * * *

(ii) The corresponding treatment standards for wastes F001-F005, F039, wastes prohibited pursuant to Sec. 268.32 or RCRA section 3004(d), and for underlying hazardous constituents (as defined in Sec. 268.2 of this part), in D001 and D002 wastes if those wastes are prohibited under Sec. 268.37 of this part. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the

applicable wastewater (as defined in Sec. 268.2(f)) or nonwastewater (as defined in Sec. 268.2(d)) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the CFR section(s) and paragraph(s) where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in Sec. 268.42, the applicable five-letter treatment code found in Table 1 of Sec. 268.42 (e.g., INCIN, WETOX) also must be listed on the notification.

* * * * *

(b) * * *
(4) * * *
(ii) The corresponding treatment standards for wastes F001-F005, F039, wastes prohibited pursuant to Sec. 268.32 or RCRA section 3004(d), and for underlying hazardous constituents (as defined in Sec. 268.2 of this part), in D001 and D002 wastes if those wastes are prohibited under Sec. 268.37 of this part. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater (as defined in Sec. 268.2(f)) or nonwastewater (as defined in Sec.
268.2(d)) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the CFR section(s) and paragraph(s) where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in Sec. 268.42, the applicable five-letter treatment code found in Table 1 of Sec. 268.42 (e.g., INCIN, WETOX) also must be included on the notification.

* * * * *

9. In Sec. 268.9, paragraph (a) is revised to read as follows:

Sec. 268.9 Special rules regarding wastes that exhibit a characteristic.

(a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subpart D of this part.
For purposes of part 268, the waste will carry the waste code for any applicable listing under 40 CFR part 261, subpart D. In addition, the waste will carry one or more of the waste codes under 40 CFR part 261, subpart C, where the waste exhibits a characteristic, except in the case when the treatment standard for the waste code listed in 40 CFR part 261, subpart D operates in lieu of the standard for the waste code under 40 CFR part 261, subpart C, as specified in paragraph (b) of this section. If the generator determines that his waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by INCIN, FSUBS, or RORGS of Sec. 268.42, Table 1), or the characteristic of corrosivity (D002), and is prohibited under Sec. 268.37 of this Part, the generator must determine what underlying hazardous constituents (as defined in Sec. 268.2 of this Part), are reasonably expected to be present in the D001 or D002 waste.

* * * * *

10. Section 268.37 is added to read as follows:

Sec. 268.37 Waste specific prohibitions--ignitable and corrosive characteristic wastes whose treatment standards were vacated.

(a) Effective August 9, 1993, the wastes specified in 40 CFR 261.21 as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in Sec. 261.22 as D002, that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

(b) Effective February 10, 1994, the wastes specified in 40 CFR 261.21 as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in Sec. 261.22 as D002, that are managed in systems defined in 40 CFR 144.6(e) and 146.6(e) as Class V injection wells, that do not engage in CWA-equivalent treatment before injection, are prohibited from land disposal.

11. In Sec. 268.40, paragraph (b) is revised to read as follows:

Sec. 268.40 Applicability of treatment standards.

* * * * *

(b) A restricted waste for which a treatment technology is specified under Sec. 268.42(a), or hazardous debris for which a treatment technology is specified under Sec. 268.45, may be land disposed after it is treated using that specified technology or an equivalent treatment method approved by the Administrator under the procedures set forth in Sec. 268.42(b). For waste displaying the characteristic of ignitability (D001) and reactivity (D003), that are diluted to meet the deactivation treatment standard in Sec. 268.42(a) Tables 1 and 2 (DEACT), the treater must comply with the precautionary measures specified in 40 CFR 264.17(b) and 265.17(b) of this chapter.

* * * * *

12. In Sec. 268.41(a), Table CCWE, the entry for F039 is amended by revising the "Waste code" and the "See also" columns to read as follows:

Sec. 268.41 Treatment standards expressed as concentrations in waste extract.

(a) * * *

268.41 Table CCWE.--Constituent Concentrations in Waste Extract

Line No.	Waste code	Commercial chemical name	See also	CAS No. for regulated constituent	Regulated hazardous constituent

			* * * * * * *			
1.	F039 (and D001 and D002 wastes prohibited under Sec. 268.37)	* * *	Table 2 in 268.42, and Table CCW in 268.43	* * *	* * *	
			* * * * * * *			

(...Table continues...)

Line No.	Wastewaters Concentration (mg/l)	Notes	Nonwastewaters Concentration (mg/l)	Notes
	* * * * * * *			
1.	* * *	* * *	* * *	* * *
	* * * * * * *			

* * * * *

13. In Sec. 268.42(a) the entries for D001 and D002 in Table 2 are revised to read as follows:

Sec. 268.42 Treatment standards expressed as specified technologies.

(a) * * *

268.42 Table 2.--Technology-Based Standards by RCRA Waste Code

Waste code	See also	Waste descriptions and/or treatment subcategory	CAS No. for regulated hazardous constituent	Technology code Wastewaters	Nonwastewaters
D001	Table CCWE in 268.41 and Table CCW in 268.43	All descriptions meet F039; based on 40 CFR 261.21, except for the Sec. 261.21(a)(1) High TOC subcategory, managed in non-CWA/non-CWA-equivalent/ non-Class I SDWA systems	NA	DEACT, and meet F039; or FSUBS; RORGS; or INCIN	DEACT, and F039; or FSUBS; RORGS; or INCIN.
D001	NA	All descriptions based on 40 CFR 261.21, except for the Sec. 261.21(a)(1) High TOC subcategory, managed in	NA	DEACT	DEACT.

			CWA, CWA-equivalent, or Class I SDWA systems			
D001	NA	All	NA	NA	FSUBS; RORGS; descriptions based on 40 CFR 261.21(a)(1)--High TOC Ignitable Liquids Subcategory--Greater than or equal to 10% total organic carbon	or INCIN.
D002	Table CCWE in 268.41 and Table CCW in 268.43	Acid, alkaline, and other subcategory based on 261.22 managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems	NA	DEACT and meet F039	DEACT and meet F039.	
D002	NA	Acid, alkaline, and other subcategory based on 261.22 managed in CWA, CWA-equivalent, or Class I SDWA systems	NA	DEACT	DEACT.	

* * * * * * *

Note: NA means Not Applicable.

* * * * *

14. In Sec. 268.43(a), Table CCW, the entry for F039 is amended by revising the "Waste code" and the "See also" columns to read as follows:

Sec. 268.43 Treatment standards expressed as waste concentrations.

(a) * * *

268.43 Table CCW.--Constituent Concentrations in Wastes

Line No.	Waste code	Commercial chemical name	See also	Regulated hazardous constituent	CAS No. for Regulated hazardous constituent
			* * * * * * *		
1.	F039 (and	* * *	Table 2 in	* * *	* * *

D001 and D002 wastes prohibited under Sec. 268.37)		268.42, and Table CCWE in 268.41

* * * * * * *

(...Table continues...)

Line No.	Wastewaters Concentration (mg/l)	Notes	Nonwastewaters Concentration (mg/l)	Notes
	* * * * * * *			
1.	* * *		* * * * * * *	* * *
	* * * * * * *			

* * * * *

PART 270--EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

15. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

16. In Sec. 270.42, Appendix I is amended by redesignating item B(1)(c) as B(1)(d), removing the second item B(1)(b), and adding item B(1)(c) to read as follows:

Appendix I to Section 270.42--Classification of Permit Modifications

	Modifications Class
* * * * *	
B. General Facility Standards:	
1. * * *	
c. To incorporate changes associated with underlying hazardous constituents in ignitable or corrosive wastes 1	1
* * * * *	

1 Class 1 Modifications requiring prior Agency approval.

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

17. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A--Requirements for Final Authorization

18. Section 271.1(j) is amended by adding the following entries in chronological order to Table 1 and Table 2:

Sec. 271.1 Purpose and scope.

* * * * *

(j) * * *

Table 1.--Regulations Implementing the Hazardous and Solid Waste

Amendments of 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* * * * * * *			
May 24, 1993	Land disposal restrictions for characteristic wastes whose treatment standards were vacated	(Insert Federal Register page numbers)	August 9, 1993.
* * * * * * *			

Table 2.--Self-Implementing Provisions of the Hazardous and Solid Waste Amendments of 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
* * * * * * *			
August 9, 1993	Prohibition on land disposal of characteristic wastes whose treatment standards were vacated	3004(g)(6)(c)	May 24, 1993 (insert FR page numbers).
* * * * * * *			

(FR Doc. 93-11877 Filed 5-21-93; 8:45 am)

BILLING CODE 6560-50-P

LEGAL PUBLICATIONS:
Pub. Law 84-159 SEC. 304 -- Air Pollution Control Act (Act of 7/14/55)
Pub. Law 89-272 SEC. 3004 1006 3005 3006 3008 3013 7003 1002 1003 2002 3007 7004 3018 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-482 SEC. 17 -- Solid Waste Disposal Act Amendments of 1980
Pub. Law 92-500 SEC. 2 -- Federal Water Pollution Control Act Amendments of 1972
Pub. Law 93-523 -- Safe Drinking Water Act (Act of 12/16/74)
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 91-604 SEC. 12 -- Noise Pollution and Abatement Act of 1970; Clean Air Act Amendments of 1970
Pub. Law 98-616 SEC. 246 -- Hazardous and Solid Waste Amendments of 1984
Pub. Law 80-845 SEC. 307 402 -- Federal Water Pollution Control Act (Act of 6/30/48)

DIALOG(R)File 180:Federal Register

Hazardous Waste Management System; Testing and Monitoring Activities

Volume: 58 Issue: 167 Page: 46040
CITATION NUMBER: 58 FR 46040
Date: TUESDAY, AUGUST 31, 1993

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR 260, 261, 264, 265, 268, 270
NUMBERS: FRL-3981-7; RIN 2050-AC32
DATES: Effective: 19930831
CONTACT INFORMATION: RCRA Hotline, 800-424-9346,, 703-920-9810,, 800-553-7672 (TDD),, 703-486-3323 (TDD),; or; Kim Kirkland, 202-260-4761
ACTION: Final rule
INTERNAL DATA: (FR Doc. 93-21114 Filed 8-26-93; 8:45 am)
Word Count: 10317

SUMMARY: The Environmental Protection Agency (EPA or Agency) is amending its hazardous waste regulations under subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, for testing and monitoring activities. These amendments replace the current Second Edition, including Updates I and II, of the EPA approved test methods manual "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, by incorporating by reference the Third Edition (and its first update) into the RCRA regulations. These amendments also revise Appendices II--Method 1311 Toxicity Characteristic Leaching Procedure (TCLP) and III--Chemical Analysis Test Methods to 40 CFR part 261, delete Appendix X--Method of Analysis for Chlorinated Dibenzo-p-dioxins and Dibenzofurans, Method 8280, to 40 CFR part 261, and revise Appendices I--Toxicity Characteristic Leaching Procedure (TCLP) and IX--Extraction Procedure (EP) Toxicity Test, to 40 CFR part 268. This action is necessary to provide better and more complete analytical test methods for RCRA-related testing. The intent of this amendment is to provide up-to-date technologies in order to promote cost effectiveness and flexibility in choosing analytical test methods.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260, 261, 264, 265, 268, and 270
(FRL-3981-7)

RIN 2050-AC32

Hazardous Waste Management System; Testing and Monitoring Activities

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA or Agency) is amending its hazardous waste regulations under subtitle C of the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, for testing and monitoring activities. These amendments replace the current Second Edition, including Updates I and II, of the EPA approved test methods manual "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, by incorporating by reference the Third Edition (and its first update) into the RCRA regulations. These amendments also revise Appendices II--Method 1311 Toxicity Characteristic Leaching Procedure (TCLP) and III--Chemical Analysis Test Methods to 40 CFR part 261, delete Appendix X--Method of Analysis for Chlorinated Dibenzo-p-dioxins and Dibenzofurans, Method 8280, to 40 CFR part 261, and revise Appendices I--Toxicity Characteristic Leaching Procedure (TCLP) and IX--Extraction Procedure (EP) Toxicity Test, to 40 CFR part 268.

This action is necessary to provide better and more complete analytical test methods for RCRA-related testing. The intent of this amendment is to provide up-to-date technologies in order to promote cost effectiveness and flexibility in choosing analytical test methods.

EFFECTIVE DATE: August 31, 1993. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of August 31, 1993.

ADDRESSES: The official record for this rulemaking (Docket No. F-93-WTMF-FFFFF) is located at the U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460 (room M-2427), and is available for viewing from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. The public must make an appointment to review docket materials by calling (202) 260- 9327. The public may copy a maximum of 100 pages of material from any one regulatory docket at no cost; additional copies cost $0.15 per page.

Copies of the Third Edition of SW-846 and of Update I to the Third Edition are part of the official docket for this rulemaking, and also are available from the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402, (202) 783-3238. The GPO document number is 955-001-00000-1. New subscriptions to SW-846 may be ordered from GPO at a cost of $319.00. Those persons who have copies of the Third Edition of SW-846 that were purchased from GPO and wish to receive the final version of Update I and future revisions can do so by renewing their subscriptions with GPO for $221.00. There is a 25% surcharge for foreign subscriptions and renewals.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424-9346 (toll free) or call (703) 920-9810; or, for hearing impaired, call TDD (800) 553-7672 or (703) 486-3323. For technical information, contact Kim Kirkland, Office of Solid Waste (OS-331), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 260-4761.

SUPPLEMENTARY INFORMATION:

Preamble Outline

I. Authority

These regulations are being promulgated under the authority of sections 1006, 2002, 3001, 3002, 3004, 3005, 3006, 3010, and 3014 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (commonly known as RCRA), as amended (42 U.S.C. 6905, 6912, 6921, 6922, 6924, 6925, 6926, 6930, and 6935).

II. Background Summary and Regulatory Framework

EPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods," contains the analytical and test methods that EPA has evaluated and found to be among those acceptable for testing under Subtitle C of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. Use of some of these methods is required by specific regulations, as discussed below. All of these methods are intended to promote accuracy, sensitivity, specificity, precision, and comparability of analyses and test results.

Several of the hazardous waste regulations under Subtitle C of RCRA require that specific testing methods described in SW-846 be employed for certain applications. Any reliable analytical method may be used to meet other requirements in 40 CFR Parts 260 through 270. For the convenience of the reader, the Agency lists below a number of sections found in 40 CFR parts 260 through 270 that require the use of a specific method for a particular application, or the use of appropriate SW-846 methods in general:

(1) Section 260.22(d)(1)(i)--Submission of data in support of petitions to exclude a waste produced at a particular facility (i.e., delisting petitions);

(2) Section 261.22(a)(1) and (2)--Evaluation of waste against the corrosivity characteristic;

(3) Section 261.24(a)--Leaching procedure for evaluation of a waste against the toxicity characteristic;

(4) Sections 264.190(a), 264.314(c), 265.190(a), and 265.314(d)--Evaluation of a waste to determine if free liquid is a component of the waste;

(5) Section 266.112(b)(1)--Certain analysis in support of exclusion from the definition of a hazardous waste of a residue which was derived from burning hazardous waste in boilers and industrial furnaces;

(6) Section 268.32(i)--Evaluation of a waste to determine if it is a liquid for purposes of certain land disposal prohibitions;

(7) Sections 268.40(a), 268.41(a), and 268.43(a)--Leaching procedure for evaluation of waste extract to determine compliance with Land Disposal treatment standards;

(8) Sections 270.19(c)(1) (iii) and (iv), and 270.62(b)(2)(i) (C) and (D)-- Analysis and approximate quantification of the hazardous constituents identified in the waste prior to conducting a trial burn in support of an application for a hazardous waste incineration permit; and

(9) Sections 270.22(a)(2)(ii)(B) and 270.66(c)(2) (i) and (ii)--Analysis conducted in support of a destruction and removal efficiency (DRE) trial burn waiver for boilers and industrial furnaces burning low risk wastes, and analysis and approximate quantitation conducted for a trial burn in support of an application for a permit to burn hazardous waste in a boiler and industrial furnace.

In other situations, this EPA publication functions as a guidance document setting forth acceptable, although not required, methods to be implemented by the user, as appropriate, in responding to RCRA-related sampling and analysis requirements.

SW-846 is a document that will change over time as new information and data are developed. Advances in analytical instrumentation and techniques are continually reviewed by the Agency's Office of Solid Waste (OSW) and periodically incorporated into SW-846 to support changes in the regulatory program and to improve method performance. Therefore, EPA solicits any available data and information that may affect the usefulness of SW-846.

III. Response to Comments From the January 23, 1989 NPRM

A. Overview of Proposed Rule

On January 23, 1989 (54 FR 3212-3229), the Agency proposed to amend its hazardous waste testing and monitoring regulations under subtitle C of RCRA

by: (1) Adding new methods to SW-846; (2) revising existing methods in SW-846; (3) requiring the use of the Third Edition, as amended by Update I, for all testing for which SW-846 methods are specifically mandated in current Subtitle C regulations; and (4) requiring the use of minimum Quality Control procedures found in Chapter One of SW-846 for all testing pursuant to Subtitle C of RCRA. The proposal discussed in detail the advantages of the Third Edition over the Second Edition, including the Third Edition's use of a standard method format and the inclusion of a number of new and revised methods in the Third Edition.

The Agency solicited comments on each of these proposed changes. Items B through D of this section summarize the comments that were received and the actions taken by the Agency in response to those comments.**1

**1 Other comments, together with the Agency's response thereto, have been placed in the official record for this rulemaking. (Docket No. F-93-WTMF-FFFFF)

B. Substitution of the Third Edition for the Second Edition Including Addition of New Methods and Revision of Existing Methods

The Agency proposed to replace the Second Edition of SW-846, including Updates I and II of the Second Edition, with methods contained in the Third Edition, as amended by Update I of the Third Edition. The Agency proposed this substitution because the methods contained in the Third Edition as amended by Update I expand the scope of the Second Edition or are improved versions of the methods in the Second Edition.

Except as discussed below and in the background document in the official record for this rulemaking, the Agency did not receive any significant negative comments on the proposal to replace the Second Edition of SW-846 methods with the versions contained in the Third Edition as amended by Update I. Therefore, the Agency has made this replacement by revising 40 CFR 260.11 to incorporate the Third Edition as amended by Update I by reference.

Consistent with that change, a footnote in 40 CFR 260.11 discussing a distinction between the Second and Third Edition has been deleted. A listing of all parts found in the Third Edition of SW-846 as amended by Update I is provided below: **2

**2 A suffix of "A" in the method number indicates revision one (the method has been revised once).

SW-846 Third Edition, Update I
Disclaimer Abstract
Table of Contents
Method Index and Conversion Table
Preface
Acknowledgements
Chapter One--Quality Control
1.0 Introduction
2.0 QA Project Plan
3.0 Field Operations
4.0 Laboratory Operations
5.0 Definitions
6.0 References
Chapter Two--Choosing the Correct Procedure
2.1 Purpose

13.3 Waste Characterization Strategy
13.4 Stack-Gas Effluent Characterization Strategy
13.5 Additional Effluent Characterization Strategy
13.6 Selection of Specific Sampling and Analysis Methods
13.7 References
Appendix--Company References

In compiling the Third Edition of SW-846, the Agency revised many methods in the Second Edition, reprinted some methods from the Second Edition unaltered (except for format), and added many new methods. The Agency requested comments specifically on the new and revised methods in its January 23, 1989 proposal.

The comments received by the Agency on the addition of new methods and revision of existing methods were technical in nature. Specific details on these comments and the Agency's response to significant comments may be found in the background document to this rulemaking. The Agency has incorporated the majority of the suggested changes into the final Update I package, as described in detail in the background document. Some of the comments raised issues that resulted in additional proposed technical clarifications set forth in the February 8, 1990, Notice of Data Availability and Reopening of Comment Period. A discussion of the comments received on the February 8 notice is provided in section IV of this preamble.

C. Methods Format

In response to earlier comments, the Agency proposed to adopt a standardized ten-part format for all of its methods. This format was developed by technical experts from within EPA to clarify the methods and ensure uniform application and consideration of technical details in its methods.

The Agency did not receive any substantial comments on this issue and has therefore revised the SW-846 methods according to the proposed format.

D. Mandatory Use of Revised Chapter One

The Agency proposed to replace the existing Chapter One of the Third Edition with a revised version, and to make selected Quality Assurance and Quality Control procedures in the revised Chapter One mandatory for all RCRA testing. This proposal was made to ensure that any data used to make decisions regarding RCRA compliance would be of known and documented quality.

The Agency's proposal to replace Chapter One of SW-846 with a revised Chapter One and to require use of selected sections of Chapter One for all testing pursuant to Subtitle C of RCRA was commented on extensively. In evaluating these comments, the Agency further revised the proposed Chapter One and solicited comments on the revisions on February 8, 1990 (55 FR 4440- 4445). At that time, the Agency declared its intention to make all of Chapter One mandatory for RCRA testing and requested comment on this change. Comments received in response to the February 8, 1990 notice are discussed below in section IV. As stated in section IV, the Agency has decided not to finalize the mandatory use of Chapter One at this time.

IV. Response to Comments From the February 8, 1990 Notice

A. Overview of Notice

On February 8, 1990, a Notice of Data Availability and Reopening of Comment Period was published in the Federal Register (55 FR 4440-4445). Issued with this notice was a revised Chapter One of SW-846 entitled "Report on Minimum Criteria to Assure Data Quality" (document number EPA/530-SW-90-021). The revisions were, to a large extent, based on comments received on the January 23, 1989 proposal. The Agency requested comments on eleven topics generally related to quality control definitions and parameters, which included the deletion of appendices III and X to 40 CFR part 261.

The notice stated that the Agency was considering making the revised Chapter One mandatory for all RCRA testing, with the exclusion of certain reasonable and legitimate exceptions noted within the notice. Items B through K of this section summarize the major comments that were received and the action taken by the Agency as a result of those comments. A complete description of all significant comments and the Agency's responses may be found in the background document to this rulemaking.

B. Revised Chapter One

The Agency received many comments regarding the proposed revisions to Chapter One and the proposal to make all of Chapter One mandatory for RCRA testing. Comments were received regarding two major issues, which included: (1) The mandatory use of Chapter One for all RCRA analyses, and (2) the apparent discrepancy between Agency and regulated community requirements.

Several commenters, primarily analytical laboratories, objected to the mandatory use of Chapter One because they felt it could not be implemented in practical terms. They pointed out that, under Chapter One, each project would require individual Quality Assurance Project Plans (QAPjPs) and that a laboratory taking samples from many clients could not, in any practical way, attempt to meet the different QAPjPs for each client. Furthermore, one commenter argued that the laboratory performing the analyses should not be required to write different QAPjPs for each project.

The Agency has noted some confusion regarding whether it intended that the responsibility for producing the QAPjP lies with the laboratory or the member of the regulated community that provides the samples. The Agency believes that the member of the regulated community should be responsible for ensuring that a QAPjP is prepared because the burden of complying with the analytical requirements in the Agency's hazardous waste regulations is placed upon generators, transporters, and owners and operators of hazardous waste management facilities, not laboratories or consultants they may employ. In addition, the member of the regulated community is the only one in a position to know such things as how the data will be used, what decisions the data will support, and the required precision and accuracy of the measurements.

The laboratory performing the measurements may not be in a position to know these details. Therefore, the Agency believes that the member of the regulated community should be responsible for the preparation of the QAPjP (i.e., selection of the required methods, accuracy, precision, and

sensitivity of the analysis). This is no different from the current situation that prevails in the laboratory services sector. The laboratory is responsible for meeting the requirements established by the client. This might require lower detection limits or better precision for some projects than for others. The Agency recognizes that, in a laboratory production environment, different samples with different analytical requests can present a management problem. The Agency believes, however, that laboratories already face such problems when meeting client needs, and are able to develop appropriate solutions.

Other commenters objected to the mandatory use of the Chapter One QA/QC procedures for all RCRA testing, since the Agency does not require the use of the methods contained in SW-846 for all RCRA testing. They argued that Chapter One of SW-846 should not apply when the methods in SW-846 are not being used.

In addressing this comment, the Agency notes the difference between the mandatory use of an analytical method and the proposed imposition of mandatory QC. These two items are distinct and different. The proposed QC requirements were designed to ensure that, no matter what method was used, the resulting data would be of known and documented quality. The Agency believes that the regulated community should be given as much flexibility as possible in selecting the most cost effective method for data gathering. However, no matter what method is used, the Agency believes that data must be of a quality sufficient to meet the requirements of the application. The proposed QC requirements were designed to achieve that end.

Based upon the above comments, as well as others received concerning whether Chapter One should be mandatory for all testing, the Agency has determined that requiring minimum quality control procedures for all RCRA testing requires further study. Thus, the Agency has decided to finalize the revised Chapter One only as guidance.

In addition, Chapter One provides guidance as to how data generated using QA/QC procedures can be assured through one document, the QAPjP. However, the Agency believes that existing documents (Standard Operating Procedures (SOPs), procedure manuals or other comparable plans) which fulfill the Agency's QA/QC recommendations may be appropriate and more cost-effective to members of the regulated community. Therefore, the Agency does not believe it is necessary for a separate QAPjP to be prepared for routine sampling analyses or activities if comparable documents are available and referenced.

C. Trace Analysis vs. Macroanalysis

The comments on the Agency's proposal to include language in SW-846 allowing the analyst latitude regarding sample size, dilution, concentration and choice of analytical methodology when macroanalysis (i.e., analysis of high concentration samples) is performed were supportive of the Agency's position.

Therefore, the Agency has provided latitude for the sample size and/or sample dilution when macroanalysis is performed, as discussed in the notice.

Macroanalysis refers to the analysis of samples in which the amount of the constituent being tested for exceeds the normal range covered by the analysis method. The methods contained in SW-846 may be used for

macroanalysis if the sample size and/or dilution is adjusted such that the concentration of the final sample is in the range covered by the method. When a smaller sample is used or when a sample is diluted, the detection limit for the method will increase by a corresponding factor. If an instrumental detection limit for a particular compound is 10 nanograms (ng) (i.e., the instrument making the measurement can measure 10 ng of material) and the amount of sample used for the measurement is 1 milliliter (mL), then the corresponding detection limit, for that sample, is 10 ng/mL or 0.01 parts per million (ppm). If the sample is diluted to 100 mL and 1 mL of the diluted material is used for the measurement, the detection limit will correspond to 100 times the original detection limit or 1 ppm. Dilution, therefore, affects detection limits.

Likewise, if a larger amount of sample is used for the analysis, the detection limit is lowered by that factor. However, the instrumental detection limit remains at 10 ng regardless of the sample size used. In the case of macroanalysis, however, this increase in detection limit is of no consequence as long as the concentration of the sample is adjusted to the concentration range covered by the method. Thus, the following paragraphs have been added to Chapter Two, "Choosing the Correct Procedure," to provide guidance in this area and explain the limits to which the analyst must adhere when exercising this latitude:

The methods presented in SW-846 were designed through sample sizing and concentration procedures to address the problem of "trace" analyses (<1000 ppm), and have been developed for an optimized working range. These methods are also applicable to "minor" (1000 ppm--10,000 ppm) and "major" (>10,000 ppm) analyses, as well as to "trace" analyses, through use of appropriate sample preparation techniques that result in analyte concentration within that optimized range. Such sample preparation techniques include:

(1) Adjustment of size of sample prepared for analysis,
(2) Adjustment of injection volumes,
(3) Dilution or concentration of sample,
(4) Elimination of concentration steps prescribed for "trace" analyses,
(5) Direct injection (of samples to be analyzed for volatile constituents).

The performance data presented in each of these methods were generated from "trace" analyses, and may not be applicable to "minor" and "major" analyses.

Generally, extraction efficiency improves as concentration increases.

Caution: Care should be taken when analyzing samples for trace analyses subsequent to analysis of concentrated samples due to the possibility of cross-contamination.

D. Equipment, Standards and Reagent Preparation

The comments on the Agency's proposal to include language in SW-846 explicitly permitting the analyst latitude regarding the choice of glassware, equipment, and preparation of standards and reagents for use in SW-846 test methods were supportive of the Agency's position. Therefore, the Agency has added the following statement to the Disclaimer, at the beginning of SW-846, and to Chapter Two allowing this latitude:

Since many types and sizes of glassware and supplies are commercially available, and since it is possible to prepare reagents and standards in many different ways, those specified in these methods may be replaced by any similar types as long as this substitution does not affect the overall

quality of the analyses.

E. Holding Times

The Agency proposed making changes to SW-846 that will also permit the analyst latitude in the implementation of holding times and to consider the results of samples not analyzed within the specified holding times to be minimum values.

Although most comments indicated agreement with the proposal to allow flexibility for the holding times given in SW-846, several commenters believed that applying the proposed change to the varied matrices and levels of contaminants encountered in environmental samples is inappropriate. Two primary concerns raised by these commenters regarded: (1) Accurately answering the question of whether the threshold was exceeded if the "minimum value" is applied in situations where the measured concentration was just below the regulatory threshold, and (2) abuse of the program if the implementation of holding times was left to the discretion of the analyst.

The Agency agrees with the first comment that one cannot conclude a waste concentration is below a specified level when the holding time for a sample of that waste is exceeded, and the data show the sample concentration is below the regulatory threshold. The data can be viewed as providing a minimum concentration only. If these data show, however, that the minimum concentration is above the regulatory threshold, then one can conclude that the waste is hazardous. Data generated after holding times are exceeded may only be used to prove a waste is hazardous, not that the waste is non-hazardous.

The Agency disagrees with the second comment that, by adopting this approach, the analyst is given too much discretion regarding implementing holding times, since the data can only be used as discussed above.

Based on these comments, the Agency has included in Chapter Two of SW-846 a provision for the use of data from samples after their holding time has been exceeded for the purpose of showing a waste has exceeded a regulatory limit.

The Agency emphasizes that analyses performed after holding times expire will represent minimum values and will not be appropriate for demonstrating that a waste is below a regulatory limit. Holding times must be met whenever one is demonstrating that the concentration is less than a regulatory limit.

Specifically, the following paragraph has been added to Chapter Two:

Samples must be extracted/analyzed within the specified holding times for the results to be considered reflective of total concentrations. Analytical data generated outside of the specified holding times must be considered to be minimum values only. Such data may be used to demonstrate that a waste is hazardous where it shows the concentration of a constituent to be above the regulatory threshold but cannot be used to demonstrate that a waste is not hazardous.

F. Representative Sampling

The Agency received several comments regarding representative sampling.

Specifically, commenters expressed concern that the Agency was redefining representative sampling, that the Agency approach does not take special sampling problems (i.e., mixed radioactive and hazardous waste) into account, and that more guidance is needed concerning sampling of high-volume wastes.

The comments raised by the public are still under consideration by the Agency. In order to address these comments the Agency will need to issue additional guidance. The Agency intends to issue extensive guidance covering all aspects of sampling, including representative sampling. This guidance will replace Chapter Nine of SW-846 and will be proposed and available for public comment in the future.

This effort includes consideration of sampling strategies that can minimize costs without sacrificing acceptable data quality for making RCRA decisions.

The on-going work includes identifying approaches and valid statistical tools for data evaluation and interpretation. Until this guidance is available, appropriate sampling strategies should be decided on a case-by-case basis utilizing as guidance Chapter Nine of SW-846 and the comment responses found in the background document for this rulemaking.

G. Analysis of Nonaqueous Liquids for Elemental Species

Two commenters urged EPA not to adopt Method C--Bomb, Acid Digestion, as found in American Society for Testing and Materials (ASTM) Method E926-88, "Methods of Preparing Refuse-Derived Fuel (RDF) Samples for Analyses of Metals," until data are available on its applicability. A request has been made that, before being proposed or recommended, the method should be tested for all of the matrix types. One commenter, on the other hand, indicated that he or she had evaluated this method for its ability to digest oils for metals and found that "(t)his work demonstrated that the method was appropriate for metals of environmental concern, even though it is not a complete digestion."

In recommending this method the Agency relies, to some extent, on the acceptance procedures used by ASTM. Before ASTM recommends a method for a particular use, it is evaluated by a committee composed of experts in that testing area. If the committee accepts the method, it is adopted and published by ASTM. This review process is scientifically rigorous and ensures the method is suitable for its intended use. While ASTM method recommendations are not binding on the Agency, the Agency may recognize an ASTM method as satisfactory.

Since this method is generally accepted for hydrocarbon materials, the Agency believes that recommending it without a reevaluation or soliciting information on its applicability is proper, given Agency concurrence regarding the respective ASTM recommendation and review procedures. In response to public comment, however, the Agency evaluated this method, and others, for determining metals in a limited number of waste oils. The results of this study indicate that the method is adequate for this purpose. A copy of this study is contained in a background document accompanying this rule.

This study supports the conclusion of the third commenter regarding the applicability of the method for metals in oil analysis.

Furthermore, since waste oil is generally considered one of the most

difficult matrices, the Agency believes this method will be applicable to a very wide range of matrices. No substantive data was submitted showing that the method does not work for its intended application. As a result, the Agency has chosen to promulgate the method. As more information becomes available, the Agency will update the method to include performance data for additional, or more specific, matrices.

The Agency maintains that methods used for RCRA-related testing should be applicable to the specific matrix and analytes of concern. The Agency disagrees with the commenters, however, that testing of the method for additional nonaqueous matrices is necessary before the method is recommended.

It is not possible to validate any method for all matrices of potential interest. The method has been found to produce acceptable results for metals in oil. Users of this method may wish to validate its use for other matrices using the QC guidance set forth in Chapter One of SW-846. (See SW-846, Chapter One, section 4.4.3 "Laboratory Control Procedures.")

Therefore, the Agency is incorporating by reference "ASTM Standard Test Methods for Preparing Refuse-Derived Fuel (RDF) Samples for Analyses of Metals," ASTM Standard E926-88, Test Method C--Bomb, Acid Digestion Method in Sec. 260.11(a) of the RCRA regulations.

H. Method of Standard Additions and Matrix Spikes

The Agency received comments supportive of the Agency's position that the method of standard additions (MSA) be applied when matrix interferences are suspected. The Agency has and continues to require MSA for certain determinations of elemental species in EP Toxicity and TCLP leachates, for certain data provided in support of delisting petitions, for analysis of new matrices, and for analysis when matrix interferences are present. Directions for applying MSA are found in Method 7000, and have been retained in the Third Edition of SW-846 and Update I.

The Agency believes that matrix spikes can be useful in detecting bias and therefore has retained guidance related to matrix spikes in Chapter One and in some methods contained in SW-846.

I. Spike Recovery Correction

In the February 8, 1990 notice, the Agency set out its intent to require that reported values be adjusted for analytical bias using matrix spike recovery as one of the minimum Quality Control procedures required for all RCRA testing. The purpose of this requirement was to provide more accurate data in those situations where there was a significant analytical bias in the data due to low recoveries of the analytes of interest. Many of the commenters to the February 8, 1990 notice indicated that the requirement for spike recovery correction should not be mandatory. In particular, a number of commenters raised questions relative to the practical aspects of implementation of the requirement (e.g., how to add the spike, how many compounds must be spiked, how many samples must be spiked) as well as the burdensome nature of implementation for wastes with matrix interference problems. Wastes with matrix interferences often require dilution in an attempt to reduce or eliminate the interferences. As a result, detection limits could be elevated and one might not be able to determine if a compound of interest is present below the regulatory threshold. In

addition, interferences may not equally affect the sample and the spike. Commenters also expressed concern about bias correction when applied to a constituent that is poorly recovered from a sample matrix. In the case of zero percent recovery, one may not be sure that the laboratory could have detected the presence of the analyte if it were present.

The Agency already has recognized that spike recovery correction is a complex issue and that there is a need for further evaluation and more detailed guidance on the specific implementation procedures. Therefore, in response to public comment received on the February 8, 1990, Federal Register notice, in a Federal Register notice published on November 24, 1992 (57 FR 55114), the Agency has already announced its decision not to proceed with the proposed spike recovery correction requirement in its Subtitle C analytical procedures, and has withdrawn the requirement for bias correction of analytical spiked samples from the TCLP. The November 24, 1992 rule withdrew the spike recovery correction requirement from the TCLP and, except for technical and format changes made in a June 29, 1990, final rule revising the TCLP (55 FR 26986), returned the QA provisions of the TCLP to those promulgated on March 29, 1990 (55 FR 11796). As a result, matrix spike recoveries must be calculated (as set forth in revised section 8.2 of the TCLP) and the method of standard additions must be employed as the quantitation method for metallic contaminants when appropriate as specified in the method (as set forth in revised section 8.4 of the TCLP). In addition, the Agency made a technical correction to the regulatory language in section 8.4 to specify the use of initial calibration quantitation methods for metallic contaminants. The Agency felt this technical correction was appropriate because, at present, the method of standard additions is inapplicable to organic contaminants. Wastes identified as hazardous through TCLP testing utilizing matrix spike recovery correction must be managed as hazardous wastes, unless and until such wastes are reevaluated using recalculations of existing data or the TCLP test procedure as described in November 24, 1992 rule or otherwise reevaluated and found to be non- hazardous.

J. Reagent Grade Water

Several commenters asked that the Agency's definition of Reagent Grade Water be clarified. Specifically, they requested that the Agency adopt objective limits for defining "reagent grade water." In response to these comments the Agency has added definitions of reagent water and organic-free reagent water to Chapter One. Specific details on these definitions may be found in the revised Chapter One which provided that for a method blank to be acceptable, the concentration in the blank of any analyte of concern should be no higher than the highest of the following:

(1) The method detection limit,
(2) Five percent of the regulatory limit for that analyte, or
(3) Five percent of the measured concentration in the sample.

Reagent water and organic-free reagent water will generally provide acceptable method blanks.

K. Appendices III and X to 40 CFR Part 261

The Agency received few comments on the proposal to delete Appendices III and X of 40 CFR part 261. All were in favor of deleting Appendix X, but

several found Appendix III useful as a reference.

The Agency has chosen to proceed with removal of Appendix X of Part 261 as proposed in the Notice. The Agency has also decided to proceed with revising Appendix III of part 261 whereby Tables 1 through 3 are removed and a note is added referencing the reader to SW-846. The information contained in the tables of Appendix III, "Chemical Analysis Test Methods", is provided in SW- 846 Third Edition, Chapter Two, "Choosing the Correct Procedure." This chapter can be used in place of the tables of Appendix III. Removal of the appendix tables does not change the methods that are to be used in a given situation.

Since Appendix III of part 261 is being revised to refer to SW-846 and since Secs. 260.22(d)(1)(i) and 270.19(c)(1)(iii) reference that appendix, those sections are also being revised to instead reference SW-846.

V. Technical Changes

The Agency is taking this opportunity to make several technical changes resulting from adoption of the Third Edition of SW-846 and correcting minor technical errors. These changes include:

** Revising appendix II of part 261 by deleting the Toxicity Characteristic Leaching Procedure (TCLP), and adding a note referencing the TCLP, Method 1311 found in SW-846; and revising Sec. 261.24 by removing the reference to the TCLP found in appendix II, and adding in its place a reference to SW-846 Method 1311.

** Revising appendices I and IX of part 268 by deleting the reference to the TCLP found in appendix II, part 261 from appendix I of part 268 and deleting the EP Toxicity Test, Method 1310 from appendix IX of part 268 and adding notes respectively referencing the TCLP, Method 1311 and the EP, Method 1310 found in SW-846; and revising references to appendix II of part 261 and appendix IX of part 268 in Secs. 268.7(a), 268.40(a) and 268.41(a) to instead reference SW-486 Methods 1311 and 1310.

** Deleting the Liquid Release Test, Method 9096 from SW-846 Third Edition and First Update.

** Removing the 47 analytical test methods incorporated by reference in Sec. 260.11(a).

** Deleting references to equivalent methods in Secs. 261.22(a) (1) and (2) and 261.24(a).

** Deleting the reference to Method 5.2 in Sec. 261.22(a)(1) and adding in its place the reference to Method 9040.

** Adding clarification that references to SW-846 in Secs. 264.190(a), 264.314(c), 265.190(a), 265.314(d), 270.19(c)(1)(iii) and (iv), 270.62(b)(2)(i)(C) and (D), and 270.66(c)(2)(i) and (ii) are to SW-846 as incorporated by reference in Sec. 260.11

** Revising Sec. 270.6 to cross reference Sec. 260.11

Since these are technical changes that do not affect the implementation of the regulations, the Agency is simply providing notice of the changes without opportunity for comment. These changes are discussed in detail below.

A. Revising Appendix II of Part 261 by Deleting the Toxicity Characteristic Leaching Procedure (TCLP), and Adding Reference to the TCLP, SW-846 Method 1311 to Appendix II and Sec. 261.24.

The TCLP is being removed from appendix II of part 261 and replaced with a note referencing SW-846 because this method is contained in the Third Edition of SW-846 (i.e., Method 1311) and there is no need to maintain multiple copies of this method (one in appendix II of part 261 and one incorporated by reference) in the regulations. This technical change is being undertaken to eliminate redundancy and to remove the possibility that a discrepancy might exist between two versions of the method. This revision only changes where the method is found. It does not change the content or intended use of the method. Since this is clearly a technical change, the Agency is making this change without notice and comment.

Since the TCLP is being removed from appendix II and replaced with a note referencing SW-846, and Sec. 261.24 refers to appendix II, Sec. 261.24 is being revised to also refer to Method 1311 in SW-846.

B. Revising Appendices I and IX of Part 268 by Deleting the Reference to the TCLP Found in Appendix II, Part 261, From Appendix I of Part 268 and Deleting the EP Toxicity Test From Appendix IX of Part 268; and Adding References to the TCLP, SW-846 Method 1311 and the EP, SW-846 Method 1310 in the Respective Appendices and in Secs. 268.7(a), 268.40(a) and 268.41(a).

Since the TCLP is being removed from appendix II, part 261 and replaced with a note referencing SW-846 Method 1311, and since appendix I of part 268 and Secs. 268.7(a), 268.40(a) and 268.41(a) refer to appendix II of part 261, appendix I, part 268 and Secs. 268.7(a), 268.40(a) and 268.41(a) are being revised to also refer to Method 1311 in SW-846.

The Extraction Procedure (EP) Toxicity Test is also being removed from appendix IX of part 268 and replaced with a note referencing SW-846 because the method is contained in the Third Edition of SW-846 (i.e., Method 1310), and there is no need to maintain multiple copies of this method (one in appendix IX of part 268 and one incorporated by Reference) in the regulations. This revision only changes where the method is found. It does not change the content or intended use of the method.

Since the EP is being removed from appendix IX of part 268 and replaced with a note referencing SW-846 Method 1310, and since Secs. 268.7(a) and 268.40(a) refer to this appendix, Secs. 268.7(a) and 268.40(a) are also being revised to refer to Method 1310 in SW-846.

C. Deleting the Liquid Release Test, Method 9096 From SW-846 Third Edition and Update I

The Liquid Release Test, SW-846 Method 9096, was included in SW-846 Third Edition and Update I inadvertently. It was not EPA's intention to include the Liquid Release Test in that publication, since Method 9096 has not yet been proposed. EPA is, therefore, deleting Method 9096 from SW-846 Third

Edition and Update I. It is the Agency's intention to propose Method 9096 as part of Update II to SW-846.

D. Removing the 47 Analytical Test Methods Incorporated by Reference in Sec. 260.11(a)

The Agency is today removing the 47 methods incorporated by reference in Sec. 260.11(a). This action is being taken since the 47 methods are contained in the Third Edition of SW-846, which is being incorporated by reference today in its entirety. Therefore, specific reference to the 47 methods is redundant and is being removed.

E. Deleting References to Equivalent Methods in Secs. 261.22(a)(1) and (2) and 261.24(a)

The Agency notes that anyone may petition to add an equivalent testing or analytical method to SW-846 for use in the RCRA program under provisions of Secs. 260.20 and 260.21 of these regulations. Because these provisions have always been available to the public, in today's rule the Agency is removing references to equivalent methods in Secs. 261.24(a).

F. Deleting the Reference to Method 5.2 in Sec. 261.22(a)(1) and Adding in its Place the Reference to Method 9040

The EPA method number for pH is incorrectly referenced in Sec. 261.22(a)(1) as Method 5.2. Therefore, the Agency is deleting the reference to Method 5.2 in that section and replacing it with the correct reference to Method 9040.

G. Adding Clarification that References to SW-846 in Secs. 264.190(a), 264.314(c), 265.190(a), 265.314(d), 270.19(c)(1) (iii) and (iv), 270.62(b)(2)(i) (C) and (D), and 270.66(c)(2) (i) and (ii) are to SW-846 as Incorporated by Reference in Sec. 260.11

Finally, the Agency is today clarifying for the reader references to SW-846 and its methods in Secs. 264.190(a), 264.314(c), 265.190(a), 265.314(d), 270.19(c)(1) (iii) and (iv), 270.62(b)(2)(i) (C) and (D), and 270.66(c)(2) (i) and (ii) by adding the phrase "as incorporated by reference in Sec. 260.11" after "SW-846" in those sections.

H. Revising Sec. 270.6 to cross reference Sec. 260.11

The Agency is modifying Sec. 270.6 to refer to Sec. 260.11. Since Sec. 260.11 applies to 40 CFR parts 260 through 270, revising Sec. 270.6 References is repetitious and unnecessary.

VI. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. (See 40 CFR part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under sections 3008, 7003 and 3013 of RCRA, although authorized States have primary enforcement responsibility.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program entirely in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities in the State that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under section 3006(g) of RCRA, 42 U.S.C. 6926(g), new requirements and prohibitions imposed by the HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out those requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, the HSWA applies in authorized States in the interim.

B. Effect on State Authorizations

Today's rule promulgates standards that are not effective in authorized States since the requirements are being imposed pursuant to pre-HSWA authority. Therefore, the rule is not immediately effective in authorized States. The requirements will be applicable only in those States that do not have interim or final authorization. In authorized States, the requirements will not be applicable until the State revises its program to adopt equivalent requirements under State law.

As required by 40 CFR 271.21(e)(2), States that have final authorization must modify their programs to reflect Federal program changes and subsequently must submit the modifications to EPA for approval. The deadline by which the State must modify its program to adopt today's rule is determined based on the date of final rule promulgation in accordance with 40 CFR 271.21(e). These deadlines can be extended in certain cases (40 CFR 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State requirements have not been assessed against the Federal regulations being promulgated today to determine whether they meet the tests for authorization. Thus, a State is not authorized to carry out these requirements in fulfillment of the Federal regulations promulgated today until the State program modification is submitted to EPA and approved. Of course, States with existing standards may continue to administer and enforce their standards as a matter of State law.

States that submit their official applications for final authorization

within 12 months after the effective date of today's rule are not required to include in their applications requirements equivalent to the requirements in today's rule. However, the State must modify its program by the deadlines set forth in 40 CFR 271.21(e). States that submit official applications for final authorization 12 months or more after the effective dates of today's rule must include requirements at least as stringent as the requirements in the final rule in their applications. 40 CFR 271.3 sets forth the requirements a State must meet when submitting its final authorization application.

VII. Effective Date

Section 3010 of RCRA provides that regulations promulgated pursuant to Subtitle C of RCRA shall take effect six months after the date of promulgation. However, HSWA amended section 3010 of RCRA to allow rules to become effective in less than six months when the regulated community does not need six months to come into compliance. Since today's rule provides greater flexibility to the regulated community in testing and monitoring solid waste, the Agency believes the regulated community does not need six months to come into compliance. For that same reason, the Agency believes that good cause exists under the Administrative Procedures Act, 5 U.S.C. section 553(d), for not delaying the effective date of this rule under 30 days after its publication in the Federal Register. Therefore, this rule is effective August 31, 1993.

VIII. Regulatory Analyses

A. Regulatory Impact Analysis

Under Executive Order 12291, EPA must determine whether a regulation is "major" and, therefore, subject to the requirement of a Regulatory Impact Analysis. This rule does not increase the number of situations in which SW-846 test methods are required, but rather provides greater flexibility to the regulated community in testing and monitoring solid waste. The rule entails no additional testing or recordkeeping burden. The effects on the economy for incorporating technical corrections and adding new test methods are essentially zero.

For the same reasons, EPA has also determined that this final rule will not cause a major increase in prices and will not have a significant adverse effect on competition or the ability of U.S. enterprises to compete with foreign enterprises. There is no additional economic impact, therefore, due to today's rule. The Agency has determined that today's rule is not a major regulation; thus, no Regulatory Impact Analysis is required.

B. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. sections 601-612, Pub. L. 96-354, September 19, 1980), whenever an agency publishes a General Notice of Rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis (RFA) that describes the impact of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required, however, if the head of the Agency certifies that the rule will not have a significant impact on a

substantial number of small entities.

This rule will not require the purchase of new instruments or equipment. The regulation requires no new reports beyond those now required. This rule will not have an adverse economic impact on small entities since its effect will be to provide greater flexibility to all of the regulated community, including small entities. Therefore, in accordance with 5 U.S.C. section 605(b), I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities (as defined by the Regulatory Flexibility Act). Thus, the regulation does not require an RFA.

C. Paperwork Reduction Act

There are no additional reporting, notification, or recordkeeping provisions in this rule. Such provisions, were they included, would be submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.

List of Subjects in 40 CFR Parts 260, 261, 264, 265, 268, and 270.

Administrative practice and procedure, Hazardous waste, Incorporation by reference, Reporting and recordkeeping requirements.

Dated: August 24, 1993.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as set forth below:

PART 260--HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

Subpart B--Definitions

2. Section 260.11(a) is amended by revising the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" reference; by adding ASTM Method E926-88 to the end of the list of incorporation by reference publications; by removing the undesignated paragraph following the list of incorporation by reference publications, which refers to the 47 analytical testing methods and its footnote 1, to read as follows:

Sec. 260.11 References.

(a) * * *
"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (Third Edition (September, 1986), as amended by Update I (July 1992)). The Third Edition of SW-846 and Update I (document number 955- 001-00000-1) are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 783-3238. Copies may be inspected at the Library and RCRA Docket No. F-93-WTMF-FFFFF, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

* * * * *

"ASTM Standard Test Methods for Preparing Refuse-Derived Fuel (RDF) Samples for Analyses of Metals," ASTM Standard E926-88, Test Method C--Bomb, Acid Digestion Method, available from American Society for Testing Materials, 1916 Race Street, Philadelphia, PA 19103.

* * * * *

Subpart C--Rulemaking Petitions

3. Section 260.22(d)(1)(i) is revised to read as follows:
Sec. 260.22 Petitions to amend part 261 to exclude a waste produced at a particular facility.

* * * * *

(d) * * *
(1) * * *
(i) Does not contain the constituent or constituents (as defined in Appendix VII of part 261 of this chapter) that caused the Administrator to list the waste, using the appropriate test methods prescribed in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11; or
* * * * *

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

4. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

Subpart C--Characteristics of Hazardous Waste

5. Section 261.22 is amended by revising paragraphs (a)(1) and paragraph (a)(2) to read as follows:

Sec. 261.22 Characteristic of corrosivity.

(a) * * *
(1) It is aqueous and has a pH less than or equal to 2 or greater than or equal to 12.5, as determined by a pH meter using Method 9040 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW- 846, as incorporated by reference in Sec. 260.11 of this chapter.

(2) It is a liquid and corrodes steel (SAE 1020) at a rate greater than 6.35 mm (0.250 inch) per year at a test temperature of 55 deg.C (130 deg.F) as determined by the test method specified in NACE (National Association of Corrosion Engineers) Standard TM-01-69 as standardized in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

* * * * *

6. Section 261.24(a) is revised to read as follows:

Sec. 261.24 Toxicity characteristic.

(a) A solid waste exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW- 846, as incorporated by reference in Sec. 260.11 of this chapter, the extract from a representative sample of the waste contains any of the contaminants listed in table 1 at the concentration equal to or greater than the respective value given in that table. Where the waste contains less than 0.5 percent filterable solids, the waste itself, after filtering using the methodology outlined in Method 1311, is considered to be the extract for the purpose of this section.

* * * * *

7. Appendix II to part 261 is revised to read as follows:

Appendix II to Part 261--Method 1311 Toxicity Characteristic Leaching Procedure (TCLP)

Note: The TCLP (Method 1311) is published in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

8. Appendix III to part 261 is revised to read as follows:

Appendix III to Part 261--Chemical Analysis Test Methods

Note: Appropriate analytical procedures to determine whether a sample contains a given toxic constituent are specified in Chapter Two, "Choosing the Correct Procedure" found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter. Prior to final sampling and analysis method selection, the individual should consult the specific section or method described in SW-846 for additional guidance on which of the approved methods should be employed for a specific sample analysis situation.

9. Appendix X to part 261 is removed.

PART 264--STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

10. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

Subpart J--Tank Systems

11. Section 264.190 is amended by revising the last sentence of paragraph (a) to read as follows:

Sec. 264.190 Applicability.

* * * * *

(a) * * * To demonstrate the absence or presence of free liquids in the stored/treated waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

* * * * *

Subpart N--Landfills

12. Section 264.314 is amended by revising paragraph (c) to read as follows:

Sec. 264.314 Special requirements for bulk and containerized liquids.

* * * * *

(c) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

* * * * *

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

13. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, 6935, and 6936.

Subpart J--Tank Systems

14. Section 265.190 is amended by revising the last sentence of paragraph (a) to read as follows:

Sec. 265.190 Applicability.

* * * * *

(a) * * * To demonstrate the absence or presence of free liquids in the

stored/treated waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

* * * * *

Subpart N--Landfills

15. Section 265.314 is amended by revising paragraph (d) to read as follows:

Sec. 265.314 Special requirements for bulk and containerized liquids.

* * * * *

(d) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095 (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

* * * * *

PART 268--LAND DISPOSAL RESTRICTIONS

16. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A--General

17. Section 268.7 is amended by revising paragraph (a) to read as follows:

Sec. 268.7 Waste analysis and recordkeeping.

(a) Except as specified in Sec. 268.32, if a generator's waste is listed in 40 CFR part 261, subpart D, the generator must test his waste, or test an extract using the Toxicity Characteristic Leaching Procedure, Method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this part. Except as specified in Sec.
268.32, if a generator's waste exhibits one or more of the characteristics set out at 40 CFR part 261, subpart C, the generator must test an extract using the Extraction Procedure Toxicity Test, Method 1310 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter, or use knowledge of the waste, to determine if the waste is restricted from land disposal under this part. If the generator determines that this waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by INCIN, FSUBS, or RORGS of Sec. 268.42, Table 1), or the characteristic of corrosivity (D002), and is prohibited under Sec. 268.37, the generator must determine

what underlying hazardous constituents (as defined in Sec. 268.2) are reasonably expected to be present in the D001 or D002 waste.

* * * * *

Subpart D--Treatment Standards

18. Section 268.40 is amended by revising paragraph (a) to read as follows:

Sec. 268.40 Applicability of treatment standards.

(a) A restricted waste identified in Sec. 268.41 may be land disposed only if an extract of the waste or of the treatment residue of the waste developed using Method 1311, the Toxicity Characteristic Leaching Procedure does not exceed the value shown in Table CCWE of Sec. 268.41 for any hazardous constituent listed in Table CCWE for that waste, with the following exceptions: D004, D008, K031, K084, K101, K102, P010, P011, P012, P036, P038, and U136. These wastes may be land disposed only if an extract of the waste or of the treatment residue of the waste developed using either Method 1310, the Extraction Procedure Toxicity Test, or Method 1311, the Toxicity Characteristic Leaching Procedure, does not exceed the concentrations shown in Table CCWE of Sec. 268.41 for any hazardous constituent listed in Table CCWE for that waste. Methods 1310 and 1311 are both found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW- 846, as incorporated by reference in Sec. 260.11 of this chapter.

* * * * *

19. Section 268.41 is amended by revising paragraph (a) introductory text to read as follows:
Sec. 268.41 Treatment standards expressed as concentrations in waste extract.

(a) Table CCWE identifies the restricted wastes and the concentrations of their associated constituents which may not be exceeded in the extract of a waste or waste treatment residual extracted using Method 1311, the Toxicity Characteristic Leaching Procedure, for the allowable land disposal of such wastes. Compliance with these concentrations is required based upon grab samples. Method 1311 is found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

* * * * *

20. Appendix I to part 268 is revised to read as follows:

Appendix I to Part 268--Toxicity Characteristic Leaching Procedure (TCLP)

Note: The TCLP (Method 1311) is published in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

21. Appendix IX to part 268 is revised to read as follows:

Appendix IX to Part 268--Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test (Method 1310)

Note: The EP (Method 1310) is published in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter.

PART 270--EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

22. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

Subpart A--General Information

23. Section 270.6(a) is revised to read as follows:

Sec. 270.6 References.

(a) When used in part 270 of this chapter, the following publications are incorporated by reference: (See 40 CFR 260.11 References)

* * * * *

Subpart B--Permit Application

24. Section 270.19 is amended by revising the last sentence of paragraph (c)(1)(iii), and by revising paragraph (c)(1)(iv) to read as follows:

Sec. 270.19 Specific part B information requirements for incinerators.

* * * * *

(c) * * *

(1) * * *

(iii) * * * The waste analysis must rely on analytical techniques specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter and Sec. 270.6, or their equivalent.

(iv) An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter and Sec. 270.6.

* * * * *

Subpart F--Special Forms of Permits

25. Section 270.62 is amended by revising the last sentence of paragraph (b)(2)(i)(C), and by revising paragraph (b)(2)(i)(D) to read as follows:

Sec. 270.62 Hazardous waste incinerator permits.

* * * * *

(b) * * *
(2) * * *
(i) * * *
(C) * * * The waste analysis must rely on analytical techniques specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter and Sec. 270.6, or other equivalent.

(D) An approximate quantification of the hazardous constituents identified in the waste, within the precision produced by the analytical methods specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter and Sec. 270.6, or their equivalent.

* * * * *

26. Section 270.66 is amended by revising the last sentence of paragraph (c)(2)(i), and by revising paragraph (c)(2)(ii) to read as follows:

Sec. 270.66 Permits for boilers and industrial furnaces burning hazardous waste.

* * * * *
(c) * * *
(2) * * *
(i) * * * The waste analysis must be conducted in accordance with analytical techniques specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter and Sec. 270.6, or their equivalent.

(ii) An approximate quantification of the hazardous constituents identified in the hazardous waste, within the precision produced by the analytical methods specified in "Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods," EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter and Sec. 270.6, or other equivalent.

* * * * *

(FR Doc. 93-21114 Filed 8-26-93; 8:45 am)

BILLING CODE 6560-50-P

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 1006 2002 3001 3002 3004 3005 3006 3010 3014 7003 3013 3003 3007 3016 3017 3018 7004 3015 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-463 SEC. 7 -- Used Oil Recycling Act of 1980
Pub. Law 96-482 SEC. 7 -- Solid Waste Disposal Act Amendments of 1980
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-616 SEC. 244 245 246 243 -- Hazardous and Solid Waste Amendments of 1984

[Federal Register: September 19, 1994]

Part II

Environmental Protection Agency

---

40 CFR Part 268

Hazardous Waste Management System; Testing and Monitoring Activities, **Land Disposal Restrictions Correction**; Final Rule

40 CFR Parts 148, et al.

Land Disposal Restrictions Phase II--Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes; Final Rule
ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[FRL-5070-2]

Hazardous Waste Management System; Testing and Monitoring Activities, **Land Disposal Restrictions Correction**

AGENCY: Environmental Protection Agency.

ACTION: Final rule; **correction**.

SUMMARY: This action corrects the final regulations which were published Tuesday, August 31, 1993 (``Hazardous Waste Management System; Testing and Monitoring Activities; Final Rule'', 58 FR 46040). This action corrects the unintended removal of text from 40 CFR 268.7(a), which sets out the generator waste analysis and recordkeeping requirements of the **land disposal restrictions** under Subtitle C of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended.

EFFECTIVE DATE: This action is effective as of August 31, 1993.

FOR FURTHER INFORMATION CONTACT: For further information about this **correction** contact Kim Kirkland at (202) 260-4761, Office of Solid Waste (Mailcode 5304), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. For information about 40 CFR 268.7(a) requirements, contact the RCRA Hotline on (800) 424-9346 (toll-free) or, in the Washington, DC metropolitan area, (703) 412-9810.

SUPPLEMENTARY INFORMATION:

Background

The final regulations that are the subject of this **correction** (August 31, 1993, 58 FR 46040) amended the hazardous waste regulations for testing and monitoring activities by replacing the Second Edition, Updates I and II, of the EPA approved test methods manual ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, by incorporating by reference the Third Edition of SW-846 and its Update I into Sec. 260.11(a) of the RCRA regulations. In addition, the final rule also made a technical amendment to Sec. 268.7(a) (concerning waste analysis and recordkeeping requirements) whereby the reference to the appendix IX of Part 268 was revised to reference SW-846 Methods 1311 and 1310. The Agency intended to revise only the introductory text of Sec. 268.7(a) and to retain without change all of the subparagraphs following the introductory text. However, due to an inadvertent administrative error in incorporating the August 31, 1993 rule into the 1994 edition of the Code of Federal Regulations (CFR), the subparagraphs following the introductory text were unintentionally removed. This action clarifies that subparagraphs 40 CFR 268.7(a)(1)-268.7(a)(10), as set forth in this action, remain in effect, and are regarded by EPA to have been in effect continuously in the form published in the Code of Federal Regulations revised as of July 1, 1993.

It should be noted that 40 CFR 268.7(a) as published in this action, as well as other regulations implementing the **land disposal** restriction (LDR) program, have been amended in a final rule that is published elsewhere in today's Federal Register. The regulatory text set forth in this action does not include the amendments to Sec. 268.7(a) made by that LDR final rule. The purpose of this action is to make clear that the August 31, 1993 rule was intended only to modify the introductory text of Sec. 268.7(a), and was not intended to delete paragraphs (a)(1)-(a)(10). Therefore, the complete version of Sec. 268.7(a) as it should have appeared since the August 31, 1994 Federal Register is set forth in this action. Readers are urged to refer to the LDR final rule, published elsewhere in today's Federal Register, for the full and current text of Sec. 268.7(a).

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

Dated: August 30, 1994.
Peter Robertson,
Acting Assistant Administrator, Office of Solid Waste and Emergency Response.

Therefore, for the reasons set forth in the preamble, 40 CFR part 268 is corrected by making the following correcting amendments:

PART 268--**LAND DISPOSAL RESTRICTIONS**

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. Section 268.7(a) is revised to read as follows:

Sec. 268.7 Waste analysis and recordkeeping.

(a) Except as specified in Sec. 268.32, if a generator's waste is listed in 40 CFR part 261, subpart D, the generator must test his waste, or test an extract using the Toxicity Characteristic Leaching Procedure, Method 1311 in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter, or use knowledge of the waste, to determine if the waste is restricted from **land disposal** under this part. Except as specified in Sec. 268.32 of this part, if a generator's waste exhibits one or more of the characteristics set out at 40 CFR part 261, subpart C, the generator must test an extract using the Extraction Procedure Toxicity Test, Method 1310 in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, as incorporated by reference in Sec. 260.11 of this chapter, or use knowledge of the waste, to determine if the waste is restricted from **land disposal** under this Part. If the generator determines that his waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by INCIN, FSUBS, or RORGS of Sec. 268.42, Table 1), or the characteristic of corrosivity (D002), and is prohibited under Sec. 268.37 of this Part, the generator must determine what underlying hazardous constituents (as defined in Sec. 268.2), are reasonably expected to be present in the D001 or D002 waste.

(1) If a generator determines that he is managing a restricted waste under this part and the waste does not meet the applicable treatment standards set forth in Subpart D of this part or exceeds the applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d), with each shipment of waste the generator must notify the treatment or storage facility in writing of the appropriate treatment standards set forth in Subpart D of this part and any applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d). The notice must include the following information:

(i) EPA Hazardous Waste Number;

(ii) The corresponding treatment standards for wastes F001-F005, F039, wastes prohibited pursuant to Sec. 268.32 or RCRA section 3004(d), and for underlying hazardous constituents (as defined in Sec. 268.2), in D001 and D002 wastes if those wastes are prohibited under Sec. 268.37. Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater (as defined in Sec. 268.2(f)) or nonwastewater (as defined in Sec. 268.2(d)) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the CFR section(s) and paragraph(s) where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in Sec. 268.42, the applicable five-letter treatment code found in Table 1 of Sec. 268.42 (e.g., INCIN, WETOX) also must be listed on the notification;

(iii) The manifest number associated with the shipment of waste;

(iv) For hazardous debris, the contaminants subject to treatment as provided by Sec. 268.45(b) and the following statement: ``This

hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45''; and

(v) Waste analysis data, where available.

(2) If a generator determines that he is managing a restricted waste under this Part, and determines that the waste can be **land** disposed without further treatment, with each shipment of waste he must submit, to the treatment, storage, or **land disposal** facility, a notice and a certification stating that the waste meets the applicable treatment standards set forth in subpart D of this part and the applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d). Generators of hazardous debris that is excluded from the definition of hazardous waste under Sec. 261.3(e)(2) of this chapter (i.e., debris that the Director has determined does not contain hazardous waste), however, are not subject to these notification and certification requirements.

(i) The notice must include the following information:

(A) EPA Hazardous Waste Number;

(B) The corresponding treatment standards for wastes F001-F005, F039, and wastes prohibited pursuant to Sec. 268.32 or RCRA section 3004(d). Treatment standards for all other restricted wastes must either be included, or be referenced by including on the notification the applicable wastewater (as defined in Sec. 268.2(f)) or nonwastewater (as defined in Sec. 268.2(d)) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the CFR section(s) and paragraph(s) where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in Sec. 268.42, the applicable five-letter treatment code found in Table 1 of Sec. 268.42 (e.g., INCIN, WETOX) also must be listed on the notification.

(C) The manifest number associated with the shipment of waste;

(D) Waste analysis data, where available.

(ii) The certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

(3) If a generator's waste is subject to an exemption from a prohibition on the type of **land disposal** method utilized for the waste (such as, but not limited to, a case-by-case extension under Sec. 268.5, an exemption under Sec. 268.6, or a nationwide capacity variance under subpart C of this part), with each shipment of waste he must submit a notice to the facility receiving his waste stating that the waste is not prohibited from **land disposal**. The notice must include the following information:

(i) EPA Hazardous Waste Number;

(ii) The corresponding treatment standards for wastes F001-F005, F039, and wastes prohibited pursuant to Sec. 268.32 or RCRA section 3004(d). Treatment standards for all other restricted wastes must

either be included, or be referenced by including on the notification the applicable wastewater (as defined in Sec. 268.2(f)) or nonwastewater (as defined in Sec. 268.2(d)) category, the applicable subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanides), and the CFR section(s) and paragraph(s) where the applicable treatment standard appears. Where the applicable treatment standards are expressed as specified technologies in Sec. 268.42, the applicable five-letter treatment code found in Table 1 of Sec. 268.42 (e.g., INCIN, WETOX) also must be listed on the notification;

(iii) The manifest number associated with the shipment of waste;

(iv) Waste analysis data, where available;

(v) For hazardous debris, the contaminants subject to treatment as provided by Sec. 268.45(b) and the following statement: ``This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45''; and

(vi) The date the waste is subject to the prohibitions.

(4) If a generator is managing prohibited waste in tanks, containers, or containment buildings regulated under 40 CFR 262.34, and is treating such waste in such tanks, containers, or containment buildings to meet applicable treatment standards under subpart D of this part, the generator must develop and follow a written waste analysis plan which describes the procedures the generator will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1, Sec. 268.45, however, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

(i) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain all information necessary to treat the waste(s) in accordance with the requirements of this Part, including the selected testing frequency.

(ii) Such plan must be filed with the EPA Regional Administrator (or his designated representative) or State authorized to implement Part 268 requirements a minimum of 30 days prior to the treatment activity, with delivery verified.

(iii) Wastes shipped off-site pursuant to this paragraph must comply with the notification requirements of Sec. 268.7(a)(2).

(5) If a generator determines whether the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. If a generator determines whether the waste is restricted based on testing this waste or an extract developed using the test method described in Appendix I of this part, all waste analysis data must be retained on-site in the generator's files.

(6) If a generator determines that he is managing a restricted waste that is excluded from the definition of hazardous or solid waste or exempt from Subtitle C regulation, under 40 CFR 261.2 through 261.6 subsequent to the point of generation, he must place a one-time notice stating such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from RCRA, Subtitle C regulation, and the disposition of the waste, in the facility's file.

(7) Generators must retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to this section for at least five years from the date that the waste that is the subject of such documentation

was last sent to on-site or off-site treatment, storage, or **disposal**. The five year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator. The requirements of this paragraph apply to solid wastes even when the hazardous characteristic is removed prior to **disposal**, or when the waste is excluded from the definition of hazardous or solid waste under 40 CFR 261.2-261.6, or exempted from Subtitle C regulation, subsequent to the point of generation.

(8) If a generator is managing a lab pack that contains wastes identified in Appendix IV of this part and wishes to use the alternative treatment standard under Sec. 268.42, with each shipment of waste the generator must submit a notice to the treatment facility in accordance with paragraph (a)(1) of this section. The generator must also comply with the requirements in paragraphs (a)(5) and (a)(6) of this section, and must submit the following certification, which must be signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only the wastes specified in appendix IV to part 268 or solid wastes not subject to regulation under 40 CFR part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

(9) If a generator is managing a lab pack that contains organic wastes specified in Appendix V of this Part and wishes to use the alternate treatment standards under Sec. 268.42, with each shipment of waste the generator must submit a notice to the treatment facility in accordance with paragraph (a)(1) of this section. The generator also must comply with the requirements in paragraphs (a)(5) and (a)(6) of this section, and must submit the following certification which must be signed by an authorized representative: I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste and that the lab pack contains only organic waste specified in Appendix V to Part 268 or solid wastes not subject to regulation under 40 CFR Part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

(10) Small quantity generators with tolling agreements pursuant to 40 CFR 262.20(e) must comply with the applicable notification and certification requirements of paragraph (a) of this section for the initial shipment of the waste subject to the agreement. Such generators must retain on-site a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

* * * * *

[FR Doc. 94-22492 Filed 9-16-94; 8:45 am]
BILLING CODE 6560-50-P

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Wastes From Wood Surface Protection
Volume: 59 Issue: 2 Page: 458
CITATION NUMBER: 59 FR 458
Date: TUESDAY, JANUARY 4, 1994

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 260, 261
NUMBERS: FRL-4804-9
DATES: Effective: 19940104
CONTACT INFORMATION: RCRA-Superfund Hotline, 800-424-9346,, 703-920-9810,, 800-553-7672 (TDD),, 703-486-3323 (TDD),; David J. Carver, 202-260-6775,; or; Gail Hansen, 202-260-4761
ACTION: Final rule
INTERNAL DATA: (FR Doc. 93-32032 Filed 12-30-93; 8:45 am)
Word Count: 9994

SUMMARY: The U.S. Environmental Protection Agency (EPA) is issuing a final hazardous waste listing determination for wastes generated from the use of chlorophenolic formulations in wood surface protection processes. Upon reviewing the public comments received on its proposal of April 27, 1993, the Agency has decided not to list wastes from the use of chlorophenolic formulations in wood surface protection processes. As a result of this determination, EPA is not mandating in this rule any specific operating or information collection requirements for owners/operators of wood surface protection plants. If, however, use of chlorophenolic formulations resumes in the future, the Agency would very likely re-evaluate this decision not to list. This rule also finalizes the proposed amendment of SW-846 ("Test Methods for Evaluating Solid Waste, Physical/Chemical Methods") to include Method 4010 (Immunoassay Test for the Presence of Pentachlorophenol). In addition, the Agency is adding the following four chemicals to 40 CFR part 261, Appendix VIII: Sodium and potassium salts of pentachlorophenol and tetrachlorophenol.

TEXT:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 260 and 261
(FRL-4804-9)

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Wastes From Wood Surface Protection

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is issuing a final hazardous waste listing determination for wastes generated from the use of chlorophenolic formulations in wood surface protection processes. Upon reviewing the public comments received on its proposal of April 27, 1993, the Agency has decided not to list wastes from the use of chlorophenolic

formulations in wood surface protection processes. As a result of this determination, EPA is not mandating in this rule any specific operating or information collection requirements for owners/operators of wood surface protection plants. If, however, use of chlorophenolic formulations resumes in the future, the Agency would very likely re-evaluate this decision not to list. This rule also finalizes the proposed amendment of SW-846 ("Test Methods for Evaluating Solid Waste, Physical/Chemical Methods") to include Method 4010 (Immunoassay Test for the Presence of Pentachlorophenol). In addition, the Agency is adding the following four chemicals to 40 CFR part 261, Appendix VIII: Sodium and potassium salts of pentachlorophenol and tetrachlorophenol.

EFFECTIVE DATE: January 4, 1994.

ADDRESSES: The official record for this rulemaking is identified as Docket Number F-93-F33F-FFFFF and is located in the EPA RCRA Docket, room M2616, 401 M Street, SW., Washington, DC 20460. The public must make an appointment to review docket materials by calling (202) 260-9327. The docket is open from 9 a.m. to 4 p.m., Monday through Friday, excluding holidays. The public may copy up to 100 pages from the docket at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA/ Superfund Hotline at (800) 424-9346 (toll-free) or (703) 920-9810 in the Washington, DC metropolitan area. The TDD hotline number is (800) 553-7672 or (703) 486-3323. For technical information on specific aspects of this rulemaking, contact Mr. David J. Carver at (202) 260-6775, Office of Solid Waste (Mailcode 5304), U.S. EPA, 401 M Street, SW., Washington, DC 20460. For technical information relating to the amendment of SW-846, contact Ms. Gail Hansen at (202) 260-4761, Office of Solid Waste (Mailcode 5304), at the same address provided above.

SUPPLEMENTARY INFORMATION: The contents of today's preamble are listed in the following outline:

I. Legal Authority

These regulations are being promulgated under the authority of sections 2002(a) and 3001(b) and (e)(1) of the Solid Waste Disposal Act, as amended, 42 U.S.C. 6912(a), 6921(b) and (e)(1), and 6922 (commonly referred to as RCRA).

II. Background & Summary

A. Background

Under section 3001(e) of RCRA, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), EPA is required to make a hazardous waste listing determination for wastes containing chlorinated dioxins and dibenzofurans. As part of this mandate, the Agency began an investigation in 1988 of dioxin- containing wastes from wood preserving and wood surface protection processes.

Three categories of wastes from wood preserving processes were listed as hazardous wastes in 1990, (F032, F034, and F035, see 55 FR 50450). A final listing determination for wood surface protection process wastes were deferred due to lack of data (53 FR 53282). In 1991, the Agency began a separate study of the surface protection industry in an effort to obtain sufficient information upon which to base a hazardous waste listing determination. The Agency, upon obtaining and evaluating information, published a proposed rule on April 27, 1993 which proposed a concentration-based hazardous waste listing option and requested comment on an alternative option not to list these wastes as hazardous (58 FR 25707). Details of the options can be found in the following section to this preamble. A detailed summary of all Agency actions related to wood surface protection wastes was provided in the April 27, 1993 proposal (58 FR 25707). The reader is encouraged to consult that document for more information on the wood surface protection rulemaking history.

In accordance with a proposed consent decree signed by EPA and the Environmental Defense Fund (EDF) in EDF v. Browner (U.S. District Court for the District of Columbia, case no. 89-0591), the Agency has agreed to make a final listing determination for chlorophenolic wastes from wood surface protection processes by December 31, 1993.

B. Summary of the Wood Surface Protection Regulation

After considerable review and study of the rulemaking docket for this action, including comments received on the proposal, the Agency has determined that listing as hazardous wastes from surface protection operations is unnecessary and will not yield the benefits intended by a hazardous waste listing under the RCRA program. This section summarizes elements of the proposed rule of April 27, 1993 (58 FR 25707), and details the conclusions reached in developing this final rule. The reader is cautioned that although some of the highlights brought up in the proposed rule are described below, the majority of information on the industry itself as well as the detailed risk assessment on which the initial proposed rule was based is found in the preamble and background documents to the proposed rule. The information contained in this final rule is primarily concerned with developments subsequent to the proposed rule. This rule describes, in detail, the Agency's justification for not listing wastes from surface protection processes that use chlorophenolic formulations. In addition, it summarizes the Agency's response to comments received on the proposal.

III. Overview of the Proposed Rule

The April 27, 1993 proposal discussed and requested comment on each of the following:

(1) Proposing a concentration-based hazardous waste listing for certain wood surface protection wastes,

(2) Proposing various testing, analysis, recordkeeping requirements and management standards for wood surface protection plants,

(3) Adding six hazardous constituents to appendix VIII of 40 CFR part 261,

(4) Amending of appendix VII of 40 CFR part 261 by adding F033 and the hazardous constituents found in the wastes,

(5) Modifying the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) list of hazardous substances to reflect the newly proposed listing,

(6) Amending SW-846 ("Test Methods for Evaluating Solid Waste, Physical/Chemical Methods") to include Method 4010 (Immunoassay Test for the Presence of Pentachlorophenol), and

(7) An alternative option not listing chlorophenolic wastes as hazardous.

The Agency proposed to list as hazardous at 40 CFR 261.31 only those wastes from wood surface protection processes using a formulation with a pentachlorophenate concentration greater than 0.1 ppm. Under this proposed option, surface protection operations using formulations with pentachlorophenate concentrations equal to or less than 0.1 ppm would not generate F033 listed wastes. The Agency proposed this concentration-based listing because it had information which suggested that many surface protectors who previously used chlorophenolics did not sufficiently clean out equipment prior to abandoning the use of chlorophenolics. Because of this, many formulations from past users of chlorophenolics exhibit "cross-contamination," the contamination of current formulations by dioxins and chlorophenolic compounds from old formulations. The rule proposed the following hazardous waste listing description for the F033 waste code and included the following specific waste streams from process operations:

F033:Process residuals, wastewaters that come into contact with protectant, discarded spent formulation, and protectant drippage from wood surface protection processes at plants that use surface protection chemicals having an in-process formulation concentration of pentachlorophenate (expressed as pentachlorophenol during analysis) exceeding 0.1 ppm. (T)

Along with this option, various testing and recordkeeping requirements were proposed. For an owner/operator to demonstrate that he/she is not generating F033 wastes, EPA proposed formulation testing requirements for all surface protection plants. All owner/operators of wood surface protection plants would be required to test their formulation to determine the concentration of pentachlorophenate if the owner/operators wanted to avoid generating F033 wastes. If the analysis showed a concentration at or below 0.1 ppm, the owner/operator would be required to sign a certification to that effect and maintain records on site related to the testing procedure. This testing proposed an analysis using a method listed within the EPA's Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846). The Agency proposed to add Method 4010 to SW-846. Method 4010 is an immunoassay test for the presence of pentachlorophenol, which determines whether a sample is above or below a set limit (such as the 0.1 ppm concentration level proposed).

Under the proposal, if analysis showed that a facility's formulation contains pentachlorophenate at levels exceeding 0.1 ppm, then the wastes generated from surface protection at that facility would be F033 wastes and the owner/operator would be subject to additional operating requirements proposed as subpart T of parts 264 and 265. For details on the specific operating requirements, the reader should refer to the proposed notice (58 FR 25706).

A number of the constituents of concern that are present in wastes generated from wood surface protection processes which use chlorophenolic formulations do not appear on the list of hazardous constituents at 40 CFR part 261, appendix VIII. The Agency proposed to add six hazardous constituents to appendix VIII: sodium pentachlorophenate, potassium pentachlorophenate, the sodium salt of 2,3,4,6-tetrachlorophenol, the potassium salt of 2,3,4,6-tetrachlorophenol, octachlorodibenzo-p-dioxin (OCDD) and octachlorodibenzofuran (OCDF).

Sodium and potassium pentachlorophenate are the sodium and potassium salts of pentachlorophenol. These salts were proposed for addition to appendix VIII of 40 CFR part 261 since, as a result of gastric secretions following ingestion, the sodium and potassium salts of pentachlorophenol and 2,3,4,6-tetrachlorophenol are readily converted to the corresponding phenols by acidification. Therefore, the sodium and potassium salts are reasonably expected to elicit the same health effects as the corresponding phenols. For this reason, the Agency proposed to add these four compounds to the list of hazardous constituents in appendix VIII of 40 CFR part 261.

The Agency also requested comment on an option not to list as hazardous wastes generated from surface protection processes. The Agency included the so-called "no-list" option in the proposal because the future generation of chlorophenolic wastes is expected to diminish rapidly to zero and because the results of risk analyses show that the risks from the dominant exposure pathways are relatively modest, assuming the widespread use of chlorophenolic formulations does not resume. The Agency believed at the time of the proposal that reintroduction of chlorophenolic formulations into the market place in the future was not likely to occur. EPA also noted that the Agency would always have the option of reconsidering the listing determination should chlorophenolic surface protection formulations be reintroduced in the future.

IV. Summary of Public Comments and Responses

Comments received on the proposed rule are placed under two separate headings for purposes of this summary. The first addresses the more general comments associated with the proposal, including those relating to: (1) General implementation issues of a listing for wastes generated by the wood surface protection industry; (2) technical approaches discussed in the proposal relating to data sampling methodologies; and (3) various engineering assumptions on which the proposed listing was based. The second part of this section describes the Agency's response to comments dealing with the risk assessment methodology used to support the listing determination for these wastes.

A. General Comments

Several comments were submitted on the proposed listing of F033 wastes. Four commenters supported the listing in general and two commenters supported the concentration-based approach in particular. Three commenters opposed the proposed listing and urged EPA to rely on its authority under FIFRA to control the risks posed by chlorophenolic formulations. One commenter supported an outright ban on the use of chlorophenolics for wood surface treatment.

Two commenters warned that listing F033 wastes would hinder remediation efforts at contaminated wood surface protection sites. The Agency agrees with the commenters' point that a hazardous waste listing may provide a disincentive for owner/operators of surface protection plants to initiate voluntary remediation efforts. The regulation of potentially large amounts of contaminated soil as listed hazardous waste could delay the start of cleanup due to the administrative and economic realities of regulatory compliance.

Three commenters expressed concern over the possibly perceived interchangeability of the proposed 0.1 ppm concentration level and the Toxicity Characteristic (TC) regulatory level for pentachlorophenol. Although the Agency is not finalizing the F033 hazardous waste listing, EPA nevertheless wants to make clear that the concentration level proposed in the F033 listing description was not intended as a regulatory level for any purpose other than defining a waste as F033. The current regulatory level for pentachlorophenol that defines a waste as hazardous under the TC (100 mg/L) would not have been affected by this rulemaking in any way had the F033 listing been promulgated today. Levels set for the TC are obtained by running models which simulate acidic landfill conditions. For the proposed listing, the proposed 0.1 ppm level was calculated using a Maximum Contaminant Level (MCL) of 0.001 ppm and a risk analysis using the Agency's Multi-med model.

Multi-med simulates groundwater contamination from specific sources, and for this proposal, it incorporated variables which are specific to sawmill conditions. The Agency's analysis approximated the dilution of pentachlorophenate from the time the waste contacts the ground to when it reaches a ground water well. The Agency did not arrive at the 0.1 ppm level by applying a dilution attenuation factor (DAF) of 100 (as the Agency has done in other circumstances) to the MCL. Indeed, the Agency did not take a position in the proposal about the use of DAFs in calculating acceptable risk levels for any constituents. A detailed discussion of the Agency's modeling assumptions and actual parameters used to generate risk approximations can be found in the docket for the proposed rule.

One commenter expressed reservations regarding the decontamination procedures promulgated previously for wood preserving equipment (55 FR 50482- 50483, December 6, 1990). The Agency is aware that equipment cleaning will not always prevent cross-contamination. However, it will certainly reduce the amount of contamination that would occur if no equipment cleaning took place.

Although the Agency is not finalizing the proposed F033 hazardous waste listing, EPA encourages owner/operators of surface protection plants to clean or replace any surface-treating equipment that was used previously with chlorophenolic formulations upon a switch to non-chlorophenolic chemicals and properly dispose of the wastes in an environmentally sound manner.

Furthermore, the Agency has obtained information which shows that some new substitute products are more effective if residual chlorophenolic contamination is removed. Hence, removing sludge and cleaning equipment from previous chlorophenolic use will not only be more environmentally sound, but may also enhance the new products effectiveness. Methodology on recommended cleaning and operating practices for surface protectors will be published in the near future by the Agency in a pollution prevention and waste minimization guidance document.

One commenter suggested that the proposed operating standards for surface protection plants be codified in part 262 as opposed to parts 264/265. The commenter reasoned that most surface protection plants are only generators and do not function as treatment, storage, and disposal facilities (TSDFs). However, since the F033 hazardous waste listing is not being promulgated, this issue is moot and there is no need for special generator requirements.

Several commenters had specific concerns about the applicability of the proposed F033 listing. Since the Agency is not finalizing the proposed F033 listing, these concerns are also moot. However, where appropriate, answers specific to each of these comments have been addressed in the background document of this final rule.

One commenter questioned the representativeness of the Agency's data on cross-contamination. The commenter stated that because sites were not randomly selected, there is no true sample representation of the surface protector population. EPA did not choose sampling sites based on their statistical representativeness. Rather, the sites were selected as appropriate from what the Agency considered to be typical operating plants. The Agency visited more than 15 surface protection sites in the Nation (both large and small plants). From the information obtained from these plant tours and interviews, the Agency developed a view of what it considered typical from an engineering standpoint (e.g. size of equipment, production scale, presence of containment systems, size of storage yards, amount of drippage, etc). The sites sampled need not represent the entire surface protection industry in terms of the process used and the degree of cross-contamination present to allow the Agency to demonstrate that wastes from current and previous use of chlorophenolics at surface protection sites were contaminated with the constituents of concern. These sites were chosen from information obtained by a questionnaire sent out under the Agency's 3007 RCRA authority.

B. Comments Regarding Risk Assessment

Five commenters responded to the risk assessment presented in the proposed rule. One commenter stated that the EPA incorrectly converted units of measurement in the record sampling data used for the risk assessment causing the overestimation of incremental risk for the fish/shellfish consumption and soil ingestion pathways by a 1,000-fold. The EPA agrees with the commenter.

The dioxin concentrations in the formulation at one of the affected facilities (Aquasco, MD) were reported in the wrong units, causing a 1,000-fold error to be incorporated into the risk estimates for the fish and shellfish ingestion and soil ingestion scenarios. When this error is corrected, the TCDD-TEQ dioxin levels used as the source concentration (the concentration of formulation dripping onto the ground) for affected facilities (cross-contamination from past use of chlorophenolic

formulations) and used in the lifetime individual risk estimates for the soil ingestion scenario and fish and shellfish ingestion scenario were reduced by a 1,000- fold. The lifetime individual risk values using the corrected data are presented in Table 1.

Table 1.--Individual Risk From Cross-Contamination From Past Usage of Chlorophenolic Formulations From Fish and Shellfish Ingestion

	Recreational fishers		General population	
Population	Central tendency	High end	Central tendency	High end
Constituent:				
2,3,4,7,8-TCDD TEQ /1/	2E-12	3E-11	8E-13	1E-11

/1/ Excess lifetime cancer risk.

The estimated risk to any one individual using the corrected values are 1,000-fold lower than the risk estimated in the proposed rule from cross-contamination due to past use. In this case for the typically exposed individual in the general population, the incremental risk of developing cancer is a chance of 0.8 in a trillion (8E-13); in the recreational fisher person, the risk of developing cancer is increased by only 2E-12. The estimated incremental population risk is also reduced, after correction, approximately by a 1,000-fold, to 0.0002 cases/70 years for the anticipated increase in the development of cancer as a result of exposure to ingestion of fish/shellfish contaminated with wastes from the use of chlorophenolic formulations for wood surface protection. Chart 1 in Section V Part A of this final rule shows the original values reported in the April 27, 1993 proposed notice.

The soil ingestion scenarios also were based on the storage yard soil concentrations. The soil ingestion scenario assumed that children ages 1 to 6 could come into contact with the contaminated soil at the sawmill sites because sawmill sites could be converted to rural residential land use and the child's play area could be located on the area previously used as a storage yard area. The lifetime individual risks, using the corrected formulation concentration values for dioxin, associated with the soil ingestion scenario for cross-contamination from past users of chlorophenolic formulations are presented in Table 2.

Table 2.--Individual Risk From Cross-Contamination From Past Usage of Chlorophenolic Formulations From Direct Soil Ingestion

	Storage yard	
Source	Central tendency	High end
Constituent:		
2,3,7,8-TCDD TEQ /1/	7E-10	2E-9

/1/ Upper bound excess lifetime cancer risk.

The estimates presented in Table 2 show that the incremental risks from direct soil ingestion by children are below what the Agency considers a level of concern. A child exposed to storage yard soils cross-contaminated by past users of chlorophenolics under typical conditions (consumption of 0.1 gram of soil/day for 160 days/year for six years) would be subject to an increased cancer risk of 7E-10 over a lifetime, or a chance of 0.7 in a billion. The estimated incremental population risk is also reduced

approximately 1,000- fold (to 4E-7 cases per year over a 70-year period) for the anticipated increase in the development of cancer as a result of exposure to direct ingestion of soil contaminated with wastes from the use of cross-contaminated formulations for wood surface protection.

One commenter remarked that the EPA failed to specifically address the incremental risks to subsistence fisher persons from consumption of fish/ shellfish contaminated from the use of chlorophenolic formulations for wood surface protection. EPA agrees that the risks to highly exposed sub-populations should be considered. The fish ingestion scenarios developed for the proposed rule considered exposure to a general population and recreational fisher at the outflow of a drainage area containing surface protection facilities.

EPA used the analysis for the high end recreational fisher to approximate the risk to the subsistence fisher. Recent data show that the high end ingestion rate for a subsistence fisher is greater than for a recreational fisher by a factor of approximately 2. Therefore, the incremental risk for a subsistence fisher would not exceed a level of concern, since the projected risk to recreational fishers is much less than 10-6.

The analysis of risks from fish consumption assumes that all fish in the drainage basin are contaminated. The estimates of PCDDs and PCDFs in fish tissue are based on sediment concentrations of these constituents. The sediment concentrations are estimated based on the erosion of contaminated soils from sawmill sites in a river or stream basin and subsequent dilution of contaminant levels by the erosion of uncontaminated soils from the corresponding drainage basin.

The projected risk levels increase as the size of the drainage area decreases, due to the relatively lower amounts of uncontaminated soil in smaller drainage basins. EPA performed an analysis which shows that, even with all exposure parameters set at values which would maximize the overall estimate of exposure, in order to reach a risk level of 10-6, the drainage area would need to be 8,000 hectares or less, which is smaller than the smallest drainage area in the country. The average drainage area is 440,000 hectares, and the lower fifth percentile of the size distribution is 109,000 hectares.

With regard to the fish/shellfish ingestion scenario, one commenter maintained that the fish/shellfish ingestion scenario should have been performed on a site-specific basis (i.e. EPA should have used parameters seen at individual sites), because not all sawmills are located on streams with commercial fisheries. The EPA chose the fish/shellfish ingestion scenario to be protective of the recreational fisher persons and the general population.

The risk analysis was structured so that the hydrologic cataloguing unit (or watershed) was the basic unit of analysis to ensure that the contaminated sediment would be associated with a body of water large enough to support fish hatcheries and recreational fisher persons. When these assumptions were used in the fish/shellfish ingestion scenario using corrected values for dioxin found in formulation for PCDDs and PCDFs, the incremental risk to individuals with high-end exposures remains well below 1x10-6.

With regard to the Universal Soil Loss Equation (USLE), one commenter asserted that the equation is overly conservative for estimating soil

erosion from surface protection sites. This equation models the amount of soil which is dumped into a drainage area containing fish. For a more detailed description of the model, the reader is referred to background document of the proposed rule. The EPA believes that, although this may be a conservative approach, it is the best method currently available. It has been used to support other EPA rulemakings and guidance documents. The most notable example being the Assessment of Risks from Exposure of Humans, Terrestrial and Avian Wildlife, and Aquatic Life to Dioxins and Furans, from Disposal and Use of Sludge from Bleached Kraft and Sulfite Pulp and Paper Mills./1/ Even using these conservative assumptions, the incremental risks from cross- contamination at these sites are not at a level of concern.

Note /1/ Environmental Protection Agency, 1990. Assessment of Risks from Exposure of Humans, Terrestrial and Avian Wildlife to Dioxins and Furans, from Disposal and Use of Sludge from Bleached Kraft and Sulfite Pulp and Paper Mills. Prepared for the Office of Toxic Substances. Washington, DC by Abt Association, Inc. under contract nos. 68-02-4283, Task 3-02, and 68-D9-0169, Task 1-15. EPA 560/5-90-13. July, 1990.

One commenter suggested that the population risks attributable to the contaminated fish/shellfish ingestion scenario were too high because the entire U.S. population was considered to be exposed. EPA disagrees and believes it is appropriate to consider the consumption rate of the entire population in estimating risk to the general population from this exposure pathway. However, an adjustment of 0.4 was made to the diet fraction to account for the fact that not all fish are contaminated. Thus, only some percentage of the population would be affected by the contaminated fish. As discussed in the Risk Assessment Background Document for the proposed rule, the 0.4 diet fraction was derived by estimating the percentage of rivers and streams (i.e., cataloguing units) that have at least one sawmill. A second adjustment was made in the calculation of population risk to account for the percentage of sawmills that operate surface protection processes (about 30% of the entire number of sawmills nationally). Population risk for the fish/ shellfish ingestion scenario has been recalculated for the final rule using the corrected incremental storage yard soil TCDD-TEQ concentrations. The corrected estimate of incremental population risk from cross-contamination is three orders of magnitude lower than the risk originally stated in the proposed rule. The corrected number of cancer cases expected in 70 years is now 0.0002.

One commenter asserted that the soil ingestion scenario was overly conservative because all of the soil consumption was attributed to contaminated storage yard soil and no consumption of "indoor dust" was considered. EPA considered only the consumption of storage yard soil in order to be protective of human health. The range of soil ingestion rates for average children aged 1 through 6 is presented in the EPA's Exposure Factors Handbook (1990) as 0.2 to 0.8 grams per day. These estimated values were determined from the clay content of fecal samples taken from children in this age group and thus represent consumption of soil. However, the percent of this consumption that is attributed to house dust is unknown, as is the contaminant concentration in the house dust. The EPA has recalculated the soil ingestion scenario using the corrected incremental TCDD-TEQ concentrations obtained from the formulation sample. The incremental risk estimated is below 1E-6, using the conservative assumptions. The Agency's risk levels are particularly protective with the

use of these conservative assumptions, thereby further lending support to the Agency's decision not to list these wastes.

One commenter stated that children are unlikely to consume sediment at the same rate that they consume soil. The Agency agrees, but notes that sediment consumption by children was not considered as an exposure pathway in the proposed rule. The Agency does not feel that this exposure pathway is a significant one in making a determination whether or not to list chlorophenolic wastes since the exposure areas of concern are relatively small and any land conversion which could take place would most likely require soil testing prior to land development.

One commenter stated that the assumptions used to estimate the exposed population in the soil ingestion population risk scenario greatly overestimate the number of exposed children. EPA believes that the scenario may be conservative, but not implausible. The scenario assumes that all sawmill sites are converted to rural residential land use, that the children's play areas are located on the site of the former storage yards, and that the homes are resold to new families with young children every 25 years. These assumptions include a low population density in these areas. It would take only a limited number of sites to be converted to suburban housing or to daycare or school facilities to cause a substantial increase in the exposed population. The incremental population risk estimated using the corrected incremental value for the storage yard soil TCDD-TEQ concentration is 4E-7 cases in 70 years, three orders of magnitude lower than that in the proposed rule.

One commenter maintained that the soil ingestion scenario was questionable because Superfund liabilities, state laws, and lender requirements make land use changes unlikely without site cleanup activities. The EPA agrees that, in some states, land transfers and subsequent land use changes would be unlikely to occur without cleanup. However, not all states are equally diligent in requiring site investigations at the time of property transfer, making the types of land use changes described in the soil ingestion scenario plausible.
Because of this, EPA believes it is entirely appropriate to assess risk via the soil ingestion pathway, notwithstanding any risk management decisions that may be made at some future time to address the risk.

Two commenters believed that some of the values used as input parameters to the ground-water model (i.e. recharge rate, regional conductivity, and average depth to water) were too conservative and that more appropriate input parameters should be used in this MULTIMED model. One commenter believed that the Agency had used DRASTIC (a name given to a modelling program used to evaluate the potential which may exist resulting from groundwater pollution) to perform its groundwater modeling. First, the EPA did not use the DRASTIC model in this rulemaking effort; it used the MULTIMED model developed by the Agency to perform groundwater models. The Agency did, however, use some soil and hydrogeologic information (on hydrogeologic regions and subregions collected by Aller et al. (1988)) which is used when applying the DRASTIC model. With regard to the parameters felt by the commenter to be too conservative, the EPA supports the values used in the proposed rule (58 FR at 25706 of April 27, 1993). This hydrogeologic information includes many of the input parameters required to run the MULTIMED model, and includes such parameters as depth to water, soil type and hydraulic conductivity, net recharge, aquifer hydraulic conductivity. The EPA selected hydrogeologic subregions in the

northwest and southeast United States, excluding subregions where sawmills were not likely to be sited (e.g., mountain slopes or flanks).

Since the parameter value ranges presented in Aller et al. (1988) are based on compilations of literature values and expert opinion, the values should be viewed as bounding ranges, and are not sufficiently statistically rigorous to estimate true means or parameter distributions. For the average case, "typical" parameter values were obtained by examining the ranges of values in Aller et al. (1988) for the selected subregions only and selecting values representing the central tendency of the reported ranges. Similarly, high-end values were selected to represent the high end of the exposure distribution, using the higher end of the range of parameter values deemed likely to occur by Aller et al. (1988). EPA recognizes that there are limitations to this approach, largely associated with the non-statistical nature of the data. The Agency believes, however, that this data source is the best available at this time for regional and subregional estimates of the hydrogeologic properties necessary to estimate exposures through the ground-water pathway.

Two commenters felt that the Agency's use of input parameter values used for well location and well intake point were too conservative. EPA derived the horizontal distance to wells from the responses reported in the RCRA's 3007 Industry Questionnaires. Because information was not obtained on the well type or construction, all wells described in the questionnaire were assumed to be possible sources of drinking water and were assumed to be screened to the top of the aquifer, that is, well water was assumed to be drawn off the top of the aquifer where organics are assumed to exist in greater concentrations than when water is drawn from the middle of the aquifer. These assumptions are consistent with similar conservative assumptions used to develop other RCRA regulations, such as the Toxicity Characteristic (55 FR 11798, March 29, 1990).

Two commenters contended that neither biodegradation or chemical degradation rates were considered in the ground-water modeling of pentachlorophenol contamination. These commenters submitted studies showing that biological and chemical degradation of PCP can occur and that adequate biological and chemical degradation rates are available or can be estimated from these studies. EPA has reviewed these studies and agrees that they do indicate that biological and chemical degradation of PCP can occur. The information submitted by the commenters are results from laboratory studies, reporting the results from controlled experiments. However, EPA does not agree that there is sufficient information on unassisted field degradation rates, the geochemical factors that affect degradation, or their spatial variability from site-to-site or region-to-region to model degradation in the field at generic or prototypical sites for regulatory purposes. Moreover, the existence of metabolites that would confirm the occurrence of biodegradation in the field has not been firmly established. Therefore, EPA does not believe the data warrant an assumption that biodegradation does occur at significant rates at most sites. In addition, the toxicities of potential degradation products have not been characterized. Therefore, the EPA does not believe it is appropriate to consider these mechanisms in this rulemaking.

One commenter suggested that it would be more appropriate to calculate the average peak concentration of pentachlorophenate in groundwater used to reflect a 9-year exposure duration by producing a breakthrough curve of annual concentrations at a well using the MULTIMED model and calculate a series of 9-year or 10-year moving averages. The moving averages would be sorted in descending order and a paper plot prepared. A preferred

percentile value could then be selected as the concentration of concern. EPA believes the current method of calculating 10-year time-weighted averages by averaging two 5-year concentrations (including the maximum concentration and the highest adjacent 5-year value calculated from each model run) is an appropriate approach for estimating lifetime individual risk and the Agency selected this approach to be conservative and protective of human health. The 30-year exposure duration scenario uses a time-weighted 30-year average concentration that includes the maximum concentration. Population risk estimates aggregated over 70 years were based on a time-weighted 70-year average concentration that includes the maximum concentration.

One commenter believed that the source concentration used by EPA for PCP in the ground-water ingestion scenario was too high because PCP is no longer in use and, thus, the infiltration to ground water would be reduced. The commenter suggested that source reduction also would occur from erosion of surface soil containing PCP, before it is leached and enters the ground water. EPA addressed the fact that PCP is no longer in use at most facilities in its baseline risk estimates in the proposed rule, which have been revised in the final rule based on comments received to reflect source concentrations and pulse durations (estimated time in which pentachlorophenate is expected to be present in substitute wood surface protection product from time of changeover) more representative of the cross-contamination scenario. While surface runoff and erosion may reduce the amount of PCP available for leaching to ground water, EPA has assumed, for the purpose of its analysis, that any reductions are negligible. The EPA adopted this conservative assumption mainly because of lack of data necessary to quantify such a loss and its effects on ground-water concentrations. Furthermore, EPA does not believe that surface water and erosion will significantly reduce source leachate concentrations. As formulation drips onto the soil it will rapidly penetrate the soil until the soil is saturated. Subsequent rain events may wash off contaminated surface soil, but will not erode deeper soil horizons where most of the contaminant mass resides. Thus, EPA does not consider this assumption to be overly conservative.

One commenter noted that the results of the ground-water analysis were not supported by actual resource damage data. The Agency does not expect, nor does it feel that it is needed, that ground water PCP concentrations predicted by MULTIMED would agree precisely with the resource damage data.
The resource damage incidents presented in the background document are intended to illustrate that ground-water contamination from PCP does occur at sawmill facilities, and are not intended as validation points for exposure modeling. Resource damage data were obtained from monitoring and other wells that happened to be in place at a facility when the sampling was conducted.
There are a number of possible reasons why sampling data from the resource damage incidents may not reflect well-water concentrations predicted by the model, in particular the location of the wells with regard to plume centerline and ground-water flow direction, and the timing of peak plume concentrations at the wells.

The latter point is especially important because, depending on patterns of past PCP use and the well location, the peak concentration in the plume may not have reached or may have passed the well(s) sampled. In these resource damage cases, sufficient information was not available to determine the placement and design of these wells with respect to the site's hydrogeology

or possible plume locations and travel time. Thus, it is not possible to use these data points for validation of model results. However, it should be noted that the model-estimated ground-water PCP concentrations in the final rule are similar to those reported from resource damage incidents. When the revised average source concentration was used in the ground-water model, the estimated concentrations for PCP in ground water (average = 0 .005 mg/L; high-end = 288 mg/L) are in a reasonable agreement with the values reported in the resource damage accounts (<0.001 to 45 mg/L).

One commenter disagreed with the use of MULTIMED in that it was not as "robust" or well-tested as the Monte Carlo-based EPACML model used for the TC rule. Another commenter recommends the use of the Monte Carlo approach for all input parameters in the modeling effort. First, it is important to note that the MULTIMED ground-water model is the same model as used in EPACML except for the manner in which input parameters are specified. EPACML can only be run in a probabilistic, Monte Carlo mode, while MULTIMED allows Monte Carlo runs as well as for individual input parameters to be specified and fixed. The ground-water flow and transport model components are the same for MULTIMED and EPACML. Second, the Agency did not pursue a probabilistic, Monte Carlo-based approach when developing input parameters for this modeling effort due to the fact that using this sophisticated technique requires knowledge and proper specification of input parameter distributions, and variable independence or proper specification of joint probability parameter distributions. When these requirements cannot be met, the Monte Carlo approach will not provide better estimates than a scenario-based approach.

EPA has adopted a scenario-based regional modeling approach that uses input parameters developed for regions of the U.S. where sawmills are more prevalent. In this approach, EPA uses average and high-end values for estimating model input parameters on a regional basis because information does not exist on the actual means and distributions of these parameters for the regions modeled. The Agency believes that this approach is an appropriate one and, furthermore, that the resulting model estimates bracket or bound the uncertainty associated with the model input parameters.

Two commenters questioned the use of cancer as the endpoint of concern for 2,3,7,8-TCDD. EPA disagrees. The cancer endpoint for TCDD was selected because it is the most sensitive endpoint for which qualitative dose response data are available. 2,3,7,8-TCDD has been demonstrated to be a potent carcinogen in animals and has been classified as a B2 (potential human) carcinogen. Recently published epidemiological studies of occupationally exposed individuals report significant increases in cancer mortality.

2,3,7,8-TCDD also has potent reproductive and teratogenic endpoints and enough data exist to estimate a reference dose (RfD) based on these alternative short-term effects. (For a detailed discussion of this information, and for references to studies supporting these conclusions, the reader is referred to the background document of the proposed rule.) However, if health-based levels (HBLs) are calculated using the reproductive effect RfD, the exposure level is an order of magnitude higher than the level calculated using the carcinogen slope factor (CSF). Thus, if the cancer end- point is used as the basis for calculating a permissible exposure level, it also will be protective against short-term exposures such as those associated with reproductive effects.

The issue of 2,3,7,8-TCDD toxicity is being reassessed by EPA (outside the framework of this rulemaking) and all endpoints are being considered. TCDD has been observed to express a wide variety of effects including teratogenesis, reproductive effects, and suppression of the immune system function in many species. Mechanistic approaches to understanding and identifying toxic effects levels are also being considered. Until the reassessment process has been completed, the EPA will continue to use the current carcinogenicity endpoint CSF value that has been accepted as the basis for the MCL.

Two commenters noted limitations associated with the use of the Toxicity Equivalence Factors (TEF's) methodology. They argued that the TEF methodology should not be used to justify the addition of appendix VIII in the absence of valid toxicological studies that demonstrate actual health effects associated with exposure to these compounds. One commenter questioned the proposal to add Octachlorodibenzo-p-dioxin (OCDD) and Octachlorodibenzofuran (OCDF) to 40 CFR part 261, appendix VIII. The commenters stated that neither compound has been shown to produce toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms. The Agency has decided not to add, at this time, OCDD and OCDF to appendix VIII of 40 CFR part 261. Although the original basis for including these congeners on appendix VIII remains valid (details of which can be found in the background document supporting this final rulemaking), the Agency is investigating further the information submitted by the commenters regarding the effects of OCDD and OCDF reported in the Couture, Elwell, and Birnbaum study used to support the decisions made in the "Interim Procedures for Estimating Risks Associated with Exposures of Mixtures of Chlorinated Dibenzo-p-dioxins and Dibenzofurans and the 1989 Update". OCDD and OCDF are the most prevalent of the PCDD and PCDF congeners accounting for approximately 85 percent of the total CDD and CDF present in five of the six storage yard soil samples. OCDD has been shown to exhibit "dioxin-like" toxicity in male rats when administered in small doses in a sub-chronic toxicity study./2/ These findings have been confirmed by a second sub-chronic study conducted in female rats./3/ OCDD and OCDF have not exhibited toxicity in short term studies; however, acute exposure is not the only concern of EPA. The Agency is currently re-evaluating its original assessment of risks from dioxin. At this point, the Agency wishes to conclude its on-going reassessment before adding OCDD and OCDF to appendix VIII of 40 CFR part 261.

Note 2 Couture, L.A., M. R. Elwell, and L. S. Birnbaum. Dioxin-like effects observed in male rats following exposure to octachlorodibenzo-p-dioxin (OCDD) during a 13-week study. Toxicology and Applied Pharmacology, Vol. 93, pp 31- 46, 1988.

Note 3 Hermelinger, N., N. Poiger, and C. Schlatter. Results of a 9-month feeding study with OCDD and OCDF in rats, Organohalogen Compounds, Vol. 1, 1990, pp. 221-224.

One commenter questioned the conclusion that soil contamination presents no risk to wildlife. The EPA recognizes that concentrations that are protective of human health may not necessarily always be protective of wildlife.

However, in view of the relatively small areas occupied by sawmills and the low concentration of TCDD-TEQ in storage yard soil from cross contamination, the EPA believes the incremental risks to wildlife will be

below a level of concern.

V. Overview of the Final Rule

This final rule makes final the Agency's hazardous waste listing determination for chlorophenolic wastes generated at wood surface protection plants. EPA believes that listing as hazardous chlorophenolic wastes from surface protection operations is unnecessary for reasons described in Part A of this preamble.

This document also amends SW-846 (Test Methods For Evaluating Solid Waste, Physical/Chemical Methods) by adding Method 4010 (Immunoassay Test for the Presence of Pentachlorophenol). This action is discussed in Section VI of this preamble.

This final rule also adds four chemicals to the list of hazardous constituents at 40 CFR part 261, appendix VIII. These four chemicals are: (1) Sodium pentachlorophenate, (2) potassium pentachlorophenate, (3) sodium tetrachlorophenate, and (4) potassium tetrachlorophenate. A discussion of this action is found in part C of this section.

A. Basis for the Determination Not To List as Hazardous Wastes From Wood Surface Protection Operations

As discussed in the proposed rule, in making a hazardous waste listing determination, the Agency applies a "weight-of-evidence" approach. In doing this, the Agency examines the risks associated with all potential human health and environmental exposure pathways, analyzes trends in the current industry, researches past damage incidents, as well as other factors found in 40 CFR 261.11.

Upon reviewing and responding to comments received on the proposed rule, the Agency has decided not to list as hazardous wastes from the use of chlorophenolic formulations in the wood surface protection industry for several reasons.

First, chlorophenolic formulations are no longer being produced in the United States and the Agency believes it is very unlikely they will be produced in the future. The only remaining producer of chlorophenolics in the U.S., Chapman Chemicals, stopped production in January of 1992 and sometime later applied for voluntary cancellation of its FIFRA product registration. A notice describing this action was published in the Federal Register on June 3, 1992 (57 FR 23401), and a final cancellation order was sent to Chapman Chemicals with an effective date of September 14, 1992. This cancellation notice applies to the following products produced by Chapman Chemicals: Permatox 181, 10S, and 101, and Mitrol G-ST. Any manufacturer wishing to resume production of chlorophenolics would have to obtain a new FIFRA registration before these chemicals could be re-introduced and made available for use in wood surface protection. Currently, there remains only one known user of chlorophenolics in the U.S. out of an estimated 1000 previous users and the remaining plant's existing stock is believed to be very limited. A major element in the decision not to list as hazardous chlorophenolic wastes generated from the surface protection industry is the fact that use of chlorophenolic formulations has ceased. EPA believes it is highly unlikely that a manufacturer will seek

reregistration for this product for many reasons, including the availability of effective substitute products and the potentially high financial and administrative burdens imposed by the FIFRA registration process. Additional justification to support non-future production is the fact that European countries do not want to accept dioxin- containing wood products which have affected large export mills who will not use chlorophenolic formulations in the future in part for this reason. Use of chlorophenolics for surface protection has declined steadily (even without the influence of RCRA) from over 1,000 users to one user over the past decade. Should a new registration of this product be sought, EPA will consider this surface protection risk analysis for full strength application when determining whether a new listing determination under RCRA should be initiated. Currently, the Agency is aware of nine available substitute products currently being used by surface protectors in place of chlorophenolics. The substitute products are for a large part satisfactory to their users (as mentioned on various site trips), and the Agency does not feel as though a switch back to chlorophenolics is likely.

A second reason why the Agency has decided not to list these wastes is because the risk to human health and the environment from on-going operations which previously used chlorophenolics is shown to tail off quickly because chlorophenolic concentrations diminish to a near zero concentration within a short period of time following switchover to an alternate product. The Agency has determined that the use of full-strength chlorophenolic formulations generates wastes that result in unacceptable risk to human health and the environment. As before mentioned, should the use of chlorophenolics for surface protection applications resume, for any reason, the Agency will most likely re-evaluate its current position. However, dealing with the current situation, there remains only one known user of chlorophenolics with a limited supply remaining.

Although the Agency believes the use of full-strength chlorophenolics will be phased out in the very near future, there was concern at the time of proposal that there may be unacceptable risks posed by the use of substitute products that become cross-contaminated from previous chlorophenolic use.

Particularly, the proposal cited possible ground water risks of 2x10-4 for individuals and a broad but very low potential exposure risk due to surface run-off contributing to dioxin levels in fish. The Agency received several comments addressing these potential impacts. In response to these comments, the Agency conducted additional ground-water modeling using new pulse assumptions developed from commenter-submitted information. The Agency developed what it believed to be better pulse assumptions in an effort to determine how long pentachlorophenate will be present in on-going operations which have switched over from its past use. This new data was obtained from performing mass balance iterations using typical tank volumes found at both large and small facilities. These mathematical calculations showed that cross-contamination from previous use of chlorophenolics will be present in a substitute products for only two to six years from the time a plant stops using chlorophenolics. The Agency found that the highest estimated risk to an individual from drinking ground water for nine years at peak concentrations in the two- or six-year pulse resulting from cross contamination, is significantly diminished and the broad effect on dioxin levels in fish is reduced by several orders of magnitude. This new analysis shows that the risks associated with cross-contamination do not justify a hazardous waste listing to capture cross-contaminated wastes. In the proposed rule, EPA addressed the fact that PCP is no longer in use at most

facilities in its baseline risk estimates, which have been revised in the final rule to reflect source concentrations and pulse durations more representative of the cross- contamination, incremental-risk scenario. Chart 1 below compares the incremental risks from cross-contaminated wastes as calculated for the proposed rule to the values obtained using the new approach.

Chart 1.--Incremental Risks /1/ Due to Cross Contaminated Wastes

Line No.	Constituent pathway	Significant threat	Population	Central tendency	High end	risk
1.	Proposed in NPRM Pentachlorophenate (assumed 30 year Ground water pulse)			5x10 -7	2x10 -4	.005
2.	Dioxin fish and shellfish consumption (general population and recreational fisher)	Soil		18x10 -10 (general population)	4x10 -7, rec fisher	0.2
3.	Dioxin soil ingestion	Soil		7x10 -7	2x10 -5	.0004
4.	Revised Pentachlorophenate (2 year pulse, Ground water for large facilities)			6x10 -7	2x10 -5	.007
5.	Pentachlorophenate (6 year pulse, Ground water for small facilities)			2x10 -6	6x10 -5	0.02
6.	Dioxin fish & shellfish consumption (recreational fisher)	Soil		2x10 -12	3x10 -11	NR
7.	Dioxin fish & shellfish consumption (general pop.)	Soil		8x10 -13	1x10 -11	.0002
8.	Dioxin soil ingestion	Soil		7x10 -10	2x10 -9	4x10 -7

(...Table continues...)

/1/ Excess lifetime cancer risk.

As shown in Chart 1, population risk is lower than that presented in the proposal for both fish/shellfish consumption and the soil ingestion pathway, due to a unit conversion error in expressing dioxin concentration. The dioxin concentrations in the formulation at one of the affected facilities (Aquasco, MD) were reported using incorrect units, causing a 1,000-fold error to be incorporated into the risk estimates for the fish and shellfish ingestion and soil ingestion scenarios. When this error was corrected, the TCDD-TEQ levels used as the source concentration for affected facilities (cross-contamination from past use of chlorophenolic formulations) and used in the lifetime individual risk estimates for the soil/fish and shellfish ingestion scenarios also were reduced 1,000-fold.

The incremental population risk was revised for the ground-water scenario from an original 0.005 value to between 0.007 and 0.02 cancer cases. This range of 0.007 to 0.02 cancer cases was obtained because two different modelling scenarios were run to generate the extremes of this range. One

model run used input parameters which would simulate decay for a small production plant. The input information was obtained from a mass balance iteration which showed that it would take a small plant approximately 6 years to decrease cross-contamination levels to near zero; likewise, the second model used input parameters for large facilities which predicted a two year decline to near zero levels of cross-contamination. The details of the mass balance approach and the resulting change in population risk can be found in the background document for this final rule. The Agency believes that these revised risk levels do not warrant a hazardous waste listing.

Based on the above two main factors (i.e. (1) chlorophenolic production stoppage and subsequent chlorophenolic use decline and (2) revised risk due to cross contamination), the Agency looked closely at any potential environmental benefits that may accrue from a hazardous waste listing. Given the market trend, the Agency cannot identify any tangible benefits to be gained from listing wastes generated from the use of chlorophenolic formulations for wood surface protection. Environmental damages caused by previous use of chlorophenolics have already occurred. A listing of these wastes cannot mitigate past damages nor can it force the clean-up of these damages. Such potential jurisdiction exists under current programs. Authority under CERCLA and RCRA 3007 exists even if a decision is made not to list as is the case for this final rule.

Damage to the environment of this magnitude from previous use of chlorophenolic formulations within this industry are not expected to occur in the future unless use of full-strength chlorophenolics resumes. Furthermore, sampling data collected at surface protection sites indicate that dioxin concentrations in storage yards (the largest area of a plant) are below 1 ppb. The heavier contamination that occurs in the process area is confined to a small area and likely will not migrate off-site to environmental receptors.

Therefore, the Agency finds that the risks posed by this residual contamination are limited and that a hazardous waste listing would likely simply result in these limited areas of contamination being left in place and not produce an environmental benefit. Thus the effect on past contamination does not justify a hazardous waste listing.

B. Operating Requirements for Surface Protection Plants

Because the Agency is not listing F033 wastes, the operating standards for surface protection plants proposed in the April 27, 1993 notice are not applicable and, thus, are not being finalized. Furthermore, surface protection plants are not required to follow any specific waste management requirements regarding previous use of chlorophenolics as a result of this rule.

C. Addition of Chemicals to Appendix VIII of 40 CFR Part 261

Although this final rule does not list any wastes from wood surface protection processes as hazardous, the Agency believes that certain constituents contained in these wastes warrant inclusion in appendix VIII of part 261. 40 CFR 261.11 provides that "(s)ubstances will be listed on appendix VIII only if they have been shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms." In the April 27 notice, EPA proposed to add six hazardous

constituents of concern found in surface protection wastes to appendix VIII of 40 CFR part 261. Based on the information gathered during this listing investigation, the following four are being added to the list: sodium pentachlorophenate, potassium pentachlorophenate, the sodium salt of 2,3,4,6- tetrachlorophenol, and the potassium salt of 2,3,4,6-tetrachlorophenol. The Agency presented information in the proposed rule and supporting background documents on the adverse effects of these compounds. For those reasons, EPA is finalizing the addition of four of these constituents to appendix VIII of part 261. The Agency is not at this time finalizing the addition of OCDD and OCDF to Appendix VIII. As mentioned before, the Agency is investigating further the information submitted by the commenters regarding the effects of OCDD and OCDF reported in the Couture, Elwell, and Birnbaum study used to support the decisions made in the "Interim Procedures for Estimating Risks Associated with Exposures of Mixtures of Chlorinated Dibenzo-p-dioxins and Dibenzofurans and the 1989 Update".

VI. Amendment of SW-846 (Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods)

In the notice of proposed rulemaking, the Agency proposed to add Method 4010 (Immunoassay Test for the Presence of Pentachlorophenate) to the Second and Third Editions of SW-846. The purpose behind this proposal was to aid owners/operators of wood surface protection plants with the proposed formulation testing requirement.

With respect to requiring the use of SW-846 methods for testing for the presence of pentachlorophenate in wood surface protection "in-process" formulation, the issue is moot since EPA is not listing any wood surface protection wastes as hazardous. Nonetheless, EPA believes that although no comments were received on Method 4010, Method 4010 is an appropriate method, in general, for testing for the presence of pentachlorophenate or pentachlorophenol and can, therefore, be used in other applications other than for wood surface protection formulation testing. The Agency is, therefore, adding Method 4010 to the Third Edition of SW-846 as Update IIA. We are not adding Method 4010 to the Second Edition of SW-846 since the Third Edition has replaced the Second Edition on August 31, 1993 for use in mandatory applications (58 FR 46040). Method 4010, including its protocol and documentation supporting this action can be found in the docket for this rulemaking. See the "For Further Information" Section in front of this preamble for the EPA contact person for further information or with questions on Method 4010.

VII. Pollution Prevention and Waste Minimization

The Agency is preparing a separate guidance manual recommending voluntary pollution prevention and waste minimization techniques for the lumber industry. Since it has studied the surface protection industry in making a listing determination for wastes generated from the use of chlorophenolic formulations, EPA has gained a broad perspective on the best ways to reduce wastes generated by this wood surface protection industry. The ideas gained from the study are presented in this manual. Some recommended strategies for pollution prevention in the surface protection industry are described in this section. Further information can be found in the manual.

The ultimate goal of pollution prevention is to reduce present and future threats to human health and the environment. Pollution prevention (also referred to as source reduction) is the use of materials, processes, or practices that reduce or eliminate the quantity and/or toxicity of wastes at the source of generation. Pollution prevention is the first step in a hierarchy of options for reducing the generation of waste. The first recommended pollution prevention option is to replace chemical treatment with another type of treatment to achieve surface protection. One alternate is to dry the wood to reduce water content (high water content leads to sapstain).

The Agency is aware that this option may not be economically viable for a smaller mill. If such a system cannot be feasibly employed, it would be preferable for a user of chlorophenolic-containing formulations to switch to an alternate formulation.

Other pollution prevention strategies for use within the surface protection industry include: (1) Providing local and general ventilation within the cutting process area to reduce dust that can accumulate on wood; (2) blowing wood with air to reduce the amount of sawdust on wood prior to surface protection; and (3) using drainage collection devices like gutters on rooftops to keep precipitation away from process wastes. The pollution prevention practices described here can be critical to reduce the amount of waste generated. Although the Agency is not listing these chlorophenolic wood surface protection wastes, the pollution prevention practices described in the guidance manual are applicable to any waste generating process. For wastes that cannot be reduced at the source, generators may consider recycling as the next best option.

VIII. Analysis of Potential Costs and Benefits

A. Executive Order Requirements

Executive Order 12866

Under Executive Order 12866, (58 FR 51735 (October 4, 1993)) the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

It has been determined that this rule is not a "significant regulatory action" under the terms of Executive Order 12866 and is therefore not subject to OMB review. Nevertheless, the Agency prepared an abbreviated RIA or "Economic Assessment" (EA) in order to examine costs and benefits likely to occur as a result of that action.

B. Description of Costs and Benefits of This Rule

Because the Agency has decided not to list wastes generated from the use of chlorophenolic formulations in surface protection operations, no specific action is required under this Rule. Facilities, however, may choose to take some remedial action as a result of publicity surrounding this action. A detailed analysis of work performed is described in the background document for this final rule.

IX. State Authority

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. (See 40 CFR part 271 for the standards and requirements for authorization.) Following authorization, EPA retains enforcement authority under sections 3007, 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility.

Before the Hazardous and Solid Waste Amendments of 1984 (HSWA) amended RCRA, a State with final authorization administered its hazardous waste program entirely in lieu of the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any plants located in the State with permitting authorization. When new, more stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

By contrast, under section 3006(g) of RCRA, 42 U.S.C. 6926(g), new requirements and prohibitions imposed by the HSWA take effect in authorized States at the same time that they take effect in non-authorized States. EPA is directed to implement those requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, the Federal HSWA requirements apply in authorized States in the interim.

Although this final rule does not list, as hazardous, chlorophenolic wastes from the wood surface protection industry, it does add four constituents to appendix VIII of 40 CFR part 261. These additions will not be effective in authorized States since the requirements are not being imposed pursuant to HSWA. These requirements will be effective only in those States that do not have final authorization. In authorized States, these requirements will not be applicable until the States revise their programs to adopt equivalent requirements under State law.

Section 271.21(e)(2) of EPA's state authorization regulations (40 CFR part 271) requires that States with final authorization must modify their programs to reflect Federal program changes and submit the modifications to EPA for approval. The deadline by which the States must modify their programs to adopt this proposed regulation, if it is adopted as a final rule, will be determined by the date of promulgation of a final rule in accordance with Sec. 271.21(e)(2). If the proposal is adopted as a final

rule, Table 1 at 40 CFR 271.1 will be amended accordingly. Once EPA approves the modification, the State requirements become RCRA Subtitle C requirements.

States with authorized RCRA programs already may have regulations similar to what is being finalized in this rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State would not be authorized to implement these regulations as RCRA requirements until State program modifications are submitted to EPA and approved, pursuant to 40 CFR 271.21. Of course, States with existing regulations that are not less stringent than current Federal regulations may continue to administer and enforce their regulations as a matter of State law.

It should be noted that authorized States are required to modify their programs only when EPA promulgates Federal standards that are more stringent or broader in scope than existing Federal standards. Section 3009 of RCRA allows States to impose standards more stringent than those in the Federal program. For those Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. (See 40 CFR 271.1(i).) This proposed rule, if finalized, is neither less stringent than nor a reduction in the scope of the current Federal program and, therefore, states would be required to modify their programs to retain authorization to implement and enforce these regulations.

X. Regulatory Flexibility Analysis

This final rule amends the hazardous waste regulations by adding four chemicals to appendix VIII of 40 CFR part 261 and amending SW-846 by adding Method 4010. These are impacts with negligible effects to small entities. Therefore, there is no need to consider its impacts on small entities by preparing a Regulatory Flexibility Analysis.

XI. Paperwork Reduction Act

This rule does not contain any information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq.

List of Subjects

40 CFR Part 260

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous waste.

40 CFR Part 261

Hazardous materials, Waste treatment and disposal, Recycling.

Dated: December 23, 1993.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, chapter I of title 40 of the Code of Federal Regulations is amended as follows:

PART 260--HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

1. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

2. Section 260.11 is amended by revising the "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" reference in paragraph (a) to read as follows:

Sec. 260.11 References.

(a) * * *
"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (Third Edition (November, 1986), as amended by Updates I, II and IIA). The Third Edition of SW-846 and Updates I, II, and IIA (document number 955-001-00000-1) are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 783-3238.

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

3. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

4. Appendix VIII of part 261 is amended by adding the following hazardous constituents in alphabetical order by common name to read as follows:

Appendix VIII to Part 261--Hazardous Constituents

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * * * * * *			
Potassium pentachlorophenate	Pentachlorophenol, potassium salt	7778736	None
* * * * * * *			
Sodium pentachlorophenate	Pentachlorophenol, sodium salt	131522	None
* * * * * * *			
2,3,4,6-tetrachlorophenol, potassium salt	same	53535276	None

2,3,4,6-tetrachlorophenol, sodium salt	same	25567559	None

* * * * * * *

* * * * *

(FR Doc. 93-32032 Filed 12-30-93; 8:45 am)

BILLING CODE 6560-50-P

LEGAL PUBLICATIONS:
Pub. Law 80-104 -- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (Act of 6/25/47)
Pub. Law 89-272 SEC. 2002 1006 3010 3013 3014 3016 3017 3001 3018 7004 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 96-463 SEC. 7 -- Used Oil Recycling Act of 1980
Pub. Law 96-482 SEC. 17 17 -- Solid Waste Disposal Act Amendments of 1980
Pub. Law 96-510 -- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); Hazardous Substance Response Revenue Act of 1980
Pub. Law 92-516 -- Federal Environmental Pesticide Control Act of 1972; Federal Insecticide, Fungicide, and Rodenticide Act, Amendment (10/21/72)
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-616 SEC. 221 222 223 244 245 246 -- Hazardous and Solid Waste Amendments of 1984
?pause
?

DIALOG(R)File 180:Federal Register

Recordkeeping Instructions
Volume: 59 Issue: 57 Page: 13891
CITATION NUMBER: 59 FR 13891
Date: THURSDAY, MARCH 24, 1994

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 264 265
NUMBERS: FRL-4852-9
DATES: Effective: 19940324
CONTACT INFORMATION: Liza Hearns, 202-260-3393
ACTION: Technical amendment
INTERNAL DATA: (FR Doc. 94-6830 Filed 3-23-94; 8:45 am)
Word Count: 1550

TEXT:

40 CFR Parts 264 and 265

(FRL-4852-9)

Recordkeeping Instructions

Agency: Environmental Protection Agency.

Action: Technical amendment.

Summary: EPA is amending recordkeeping instructions in order to match those unit of measurement codes and handling codes used by hazardous waste treatment, storage and disposal facilities to report to EPA on the Part A Permit Application Form with the codes used to maintain records on-site by these facilities. This technical amendment also adds additional handling codes to allow for the proper recording of those processes relating to Boilers and Industrial Furnaces and Miscellaneous Units (subpart X) facilities. This amendment will encourage the consistent recordkeeping and reporting of information by hazardous waste treatment, storage and disposal facilities.

Effective Date: March 24, 1994.

Addresses: All comments concerning this technical amendment should be addressed to Jeffrey Gaines, Assistance Branch, Permits and State Program Division (5303W), Office of Solid Waste, U.S. EPA, 401 M Street, SW., Washington, DC 20460.

For Further Information Contact: Liza Hearns, (202) 260-3393.

Supplementary Information: For several years, the disposal process codes listed in Appendix I of 40 CFR parts 264 and 265 have been different from those listed on the Part A Permit Application form. In consultation with State, Regional and Headquarters personnel, it was determined that changing the CFR to match the forms was the appropriate step to take. Therefore, the Office of Solid Waste has prepared this technical amendment to appendix I of 40 CFR parts 264 and 265 to modify those process codes (also referred to as handling codes) listed in the CFR so that they match those codes used on the Part A Permit Application form.

List of Subjects in 40 CFR Parts 264 and 265

Hazardous waste, Reporting and recordkeeping requirements.

Dated: March 15, 1994.

Elliott P. Laws,
Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 264--STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

2. Appendix I is amended by revising Table 1 to paragraph (2) and Table 2 to paragraph (3) to read as follows:

Appendix I to Part 264--Recordkeeping Instructions
* * * * *

(2) * * *

Table 1

Unit of measure	Code /1/
Gallons	G
Gallons per Hour	E
Gallons per Day	U
Liters	L
Liters per Hour	H
Liters per Day	V
Short Tons per Hour	D
Metric Tons per Hour	W
Short Tons per Day	N
Metric Tons per Day	S
Pounds per Hour	J
Kilograms per Hour	R
Cubic Yards	Y
Cubic Meters	C

Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's per Hour	I

/1/ Single digit symbols are used here for data processing purposes.

(3) * * *

Table 2.--Handling Codes for Treatment, Storage and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store or dispose of each quantity of hazardous waste received.

1. Storage

S01 Container (barrel, drum, etc.) S02 Tank S03 Waste Pile S04 Surface Impoundment S05 Drip Pad S06 Containment Building (Storage) S99 Other Storage (specify)

2. Treatment

(a) Thermal Treatment--

T06 Liquid injection incinerator T07 Rotary kiln incinerator T08 Fluidized bed incinerator T09 Multiple hearth incinerator T10 Infrared furnace incinerator T11 Molten salt destructor T12 Pyrolysis T13 Wet air oxidation T14 Calcination T15 Microwave discharge T18 Other (specify)

(b) Chemical Treatment--

T19 Absorption mound T20 Absorption field T21 Chemical fixation T22 Chemical oxidation T23 Chemical precipitation T24 Chemical reduction T25 Chlorination T26 Chlorinolysis T27 Cyanide destruction T28 Degradation T29 Detoxification T30 Ion exchange T31 Neutralization T32 Ozonation T33 Photolysis T34 Other (specify)

(c) Physical Treatment--

(1) Separation of components:

T35 Centrifugation T36 Clarification T37 Coagulation T38 Decanting T39 Encapsulation T40 Filtration T41 Flocculation T42 Flotation T43 Foaming T44 Sedimentation T45 Thickening T46 Ultrafiltration T47 Other (specify)

(2) Removal of Specific Components:

T48 Absorption-molecular sieve T49 Activated carbon T50 Blending T51 Catalysis T52 Crystallization T53 Dialysis T54 Distillation T55 Electrodialysis T56 Electrolysis T57 Evaporation T58 High gradient magnetic separation T59 Leaching T60 Liquid ion exchange T61 Liquid-liquid extraction T62 Reverse osmosis T63 Solvent recovery T64 Stripping T65 Sand filter T66 Other (specify)

(d) Biological Treatment

T67 Activated sludge T68 Aerobic lagoon T69 Aerobic tank T70 Anaerobic tank T71 Composting T72 Septic tank T73 Spray irrigation T74 Thickening filter T75 Tricking filter T76 Waste stabilization pond T77 Other (specify) T78 (Reserved) T79 (Reserved)

(e) Boilers and Industrial Furnaces

T80 Boiler T81 Cement Kiln T82 Lime Kiln T83 Aggregate Kiln T84 Phosphate Kiln T85 Coke Oven T86 Blast Furnace T87 Smelting, Melting, or Refining Furnace T88 Titanium Dioxide Chloride Process Oxidation Reactor T89 Methane Reforming Furnace T90 Pulping Liquor Recovery Furnace T91 Combustion Device

Used in the Recovery of Sulfur Values from Spent Sulfuric Acid T92 Halogen Acid Furnaces T93 Other Industrial Furnaces Listed in 40 CFR 260.10 (specify)
(f) Other Treatment
T94 Containment Building (Treatment)

3. Disposal
D79 Underground Injection D80 Landfill D81 Land Treatment D82 Ocean Disposal D83 Surface Impoundment (to be closed as a landfill) D99 Other Disposal (specify)

4. Miscellaneous (Subpart X)
X01 Open Burning/Open Detonation X02 Mechanical Processing X03 Thermal Unit X04 Geologic Repository X99 Other Subpart X (specify)

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES

1. The authority citation for part 265 continues to read as follows:

Authority: 42 USC 6905, 6912(a), 6924 and 6925.

2. Appendix I is amended by revising Table 1 to paragraph (2) and revising Table 2 to paragraph (3) to read as follows:

Appendix I to Part 265--Recordkeeping Instructions

* * * * *

(2) * * *

Table 1

Unit of measure	Code /1/
Gallons	G
Gallons per Hour	E
Gallons per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Cubic Yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's per Hour	I

/1/ Single digit symbols are used here for data processing purposes.

(3) * * *

Table 2.--Handling Codes for Treatment, Storage and Disposal Methods

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store or dispose of each quantity of hazardous waste received.

1. Storage

S01 Container (barrel, drum, etc.) S02 Tank S03 Waste Pile S04 Surface Impoundment S05 Drip Pad S06 Containment Building (Storage) S99 Other Storage (specify)

2. Treatment

(a) Thermal Treatment--

T06 Liquid injection incinerator T07 Rotary kiln incinerator T08 Fluidized bed incinerator T09 Multiple hearth incinerator T10 Infrared furnace incinerator T11 Molten salt destructor T12 Pyrolysis T13 Wet Air oxidation T14 Calcination T15 Microwave discharge T18 Other (specify)

(b) Chemical Treatment--

T19 Absorption mound T20 Absorption field T21 Chemical fixation T22 Chemical oxidation T23 Chemical precipitation T24 Chemical reduction T25 Chlorination T26 Chlorinolysis T27 Cyanide destruction T28 Degradation T29 Detoxification T30 Ion exchange T31 Neutralization T32 Ozonation T33 Photolysis T34 Other (specify)

(c) Physical Treatment--

(1) Separation of components

T35 Centrifugation T36 Clarification T37 Coagulation T38 Decanting T39 Encapsulation T40 Filtration T41 Flocculation T42 Flotation T43 Foaming T44 Sedimentation T45 Thickening T46 Ultrafiltration T47 Other (specify)

(2) Removal of Specific Components

T48 Absorption-molecular sieve T49 Activated carbon T50 Blending T51 Catalysis T52 Crystallization T53 Dialysis T54 Distillation T55 Electrodialysis T56 Electrolysis T57 Evaporation T58 High gradient magnetic separation T59 Leaching T60 Liquid ion exchange T61 Liquid-liquid extraction T62 Reverse osmosis T63 Solvent recovery T64 Stripping T65 Sand filter T66 Other (specify)

(d) Biological Treatment

T67 Activated sludge T68 Aerobic lagoon T69 Aerobic tank T70 Anaerobic tank T71 Composting T72 Septic tank T73 Spray irrigation T74 Thickening filter T75 Tricking filter T76 Waste stabilization pond T77 Other (specify) T78 (Reserved) T79 (Reserved)

(e) Boilers and Industrial Furnaces

T80 Boiler T81 Cement Kiln T82 Lime Kiln T83 Aggregate Kiln T84 Phosphate Kiln T85 Coke Oven T86 Blast Furnace T87 Smelting, Melting, or Refining Furnace T88 Titanium Dioxide Chloride Process Oxidation Reactor T89 Methane Reforming Furnace T90 Pulping Liquor Recovery Furnace T91 Combustion Device Used in the Recovery of Sulfur Values From Spent Sulfuric Acid T92 Halogen Acid Furnaces T93 Other Industrial Furnaces Listed in 40 CFR 260.10 (specify)

(f) Other Treatment

T94 Containment Building (Treatment)

3. Disposal

D79 Underground Injection D80 Landfill D81 Land Treatment D82 Ocean Disposal D83 Surface Impoundment (to be closed as a landfill) D99 Other Disposal (specify)

4. Miscellaneous (Subpart X)
X01 Open Burning/Open Detonation X02 Mechanical Processing X03 Thermal Unit X04 Geologic Repository X99 Other Subpart X (specify)

(FR Doc. 94-6830 Filed 3-23-94; 8:45 am)

BILLING CODE 6560-50-P

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 1006 2002 3004 3005 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)

DIALOG(R)File 180:Federal Register

Hazardous Waste Management System; Identification and Listing of Hazardous Wastes; Wastes From Wood Surface Protection; Correction
Volume: 59 Issue: 105 Page: 28484
CITATION NUMBER: 59 FR 28484
Date: THURSDAY, JUNE 2, 1994

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 260
NUMBERS: FRL-4889-7
DATES: Effective: 19940602
CONTACT INFORMATION: Kim Kirkland, 202-260-4761
ACTION: Final rule; correction
INTERNAL DATA: (FR Doc. 94-13190 Filed 6-1-94; 8:45 am)
Word Count: 598

SUMMARY: This notice contains corrections to the final regulation (FRL-4804- 9) which was published Tuesday, January 4, 1994 ("Hazardous Waste Management System; Identification and Listing of Hazardous Wastes; Wastes from Wood Surface Protection; Final Rule", 59 FR 458). This notice corrects inaccurate references in that Final Rule to the EPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods".

TEXT:

40 CFR Part 260

(FRL-4889-7)

Hazardous Waste Management System; Identification and Listing of Hazardous Wastes; Wastes From Wood Surface Protection; Correction

AGENCY: Environmental Protection Agency.

ACTION: Final rule; correction.

SUMMARY: This notice contains corrections to the final regulation (FRL-4804- 9) which was published Tuesday, January 4, 1994 ("Hazardous Waste Management System; Identification and Listing of Hazardous Wastes; Wastes from Wood Surface Protection; Final Rule", 59 FR 458). This notice corrects inaccurate references in that Final Rule to the EPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods".

EFFECTIVE DATE: June 2, 1994.

FOR FURTHER INFORMATION CONTACT: Kim Kirkland at (202) 260-4761, Office of Solid Waste (Mailcode 5304), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

SUPPLEMENTARY INFORMATION:

Background

The final regulation that is the subject of this correction (January 4, 1994, 59 FR 458) amended the hazardous waste regulations by adding the sodium and potassium salts of pentachlorophenol and tetrachlorophenol to appendix VIII of 40 CFR part 261. The final regulations also amended EPA Publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," by adding Method 4010 to the Third Edition of SW-846 as Update IIA. SW-846 contains the analytical and test methods that EPA has evaluated and found to be among those acceptable for testing under Subtitle C of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Agency added Method 4010 to SW-846 as an appropriate method, in general, for testing for the presence of the sodium and potassium salts of pentachlorophenol and tetrachlorophenol which, as noted above, were added by the final rule to appendix VIII of 40 CFR part 261.

In the final regulation of January 4, 1994 (59 FR 458), the Agency amended 40 CFR 260.11(a) to incorporate by reference both Update IIA (Method 4010) and Update II of SW-846; and to indicate that these updates are available from the U.S. Government Printing Office (GPO). These amendments to 40 CFR 260.11 contain two technical errors: (1) Update II of SW-846 is still being developed by EPA and was not promulgated by the final regulations of January 4, 1994, or by any other regulation to date, and is not available from GPO; and (2) Update IIA (Method 4010), although promulgated by the January 4, 1994 rule, is also not available from the GPO.

Need for Correction

As published, the final regulations of January 4, 1994 were in advertent error with respect to the incorporation by reference of Update II of SW-846, Third Edition, into the hazardous waste regulations at 40 CFR 260.11(a). The regulations were also in inadvertent error with respect to the availability of Updates II and IIA from the U.S. Government Printing Office. These errors, therefore, need correction. Because this action is a technical correction, prior notice and opportunity for comment is unnecessary, and good cause exists for this change to take effect immediately (see 5 U.S.C. 553(6)).
Accordingly, the Agency is not seeking any comments based on today's notice.

Correction of Publication

Accordingly, the publication on January 4, 1994 of the final regulation, 59 FR 458, "Hazardous Waste Management System; Identification and Listing of Hazardous Wastes; Wastes from Wood Surface Protection; Final Rule" (FRL-4804- 9), which was the subject of FR Doc. 93-32032, is corrected. Specifically, on page 468, in the third column, Sec. 260.11(a) is corrected to read as follows:

Sec. 260.11 References (corrected).

(a) * * *

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 (Third Edition (November, 1986), as amended by Updates I and IIA). The Third Edition of SW-846 and Update I (document number 955-001- 00000-1) are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, (202) 783-3238; and Update IIA is available from the Office of Solid Waste (Mailcode 5304), U.S. EPA, 401 M Street, SW., Washington, DC 20460 or by calling the Methods Information Communication Exchange (MICE) Service at (703) 821-4789. Copies may be inspected at the Library, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

* * * * *

Dated: May 17, 1994.

Elliott P. Laws,
Assistant Administrator.

(FR Doc. 94-13190 Filed 6-1-94; 8:45 am)

BILLING CODE 6560-50-P

LEGAL PUBLICATIONS:
Pub. Law 89-272 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 94-580 -- Resource Conservation and Recovery Act of 1976 (RCRA)

DIALOG(R)File 180:Federal Register

Hazardous Waste Management System; Correction of Listing of P015--Beryllium Powder
Volume: 59 Issue: 117 Page: 31551
CITATION NUMBER: 59 FR 31551
Date: MONDAY, JUNE 20, 1994

AGENCY: Environmental Protection Agency--(EPA)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 261, 268, 302
NUMBERS: FRL-4999-1
DATES: Effective: 19940620
CONTACT INFORMATION: RCRA-Superfund Hotline, 800-424-9346,; or; Wanda Levine, 202-260-7458
ACTION: Technical correction amendment
INTERNAL DATA: (FR Doc. 94-14535 Filed 6-17-94; 8:45 am)
Word Count: 840

SUMMARY: The Environmental Protection Agency today is correcting the listing for "beryllium" in the list of commercial chemical products that are hazardous wastes when discarded or intended to be discarded. The listing description is corrected to read "Beryllium powder." Conforming changes also are being made to the RCRA list of hazardous constituents, the RCRA land disposal restrictions technology-based treatment standards, and to the CERCLA list of hazardous substances.

TEXT:

40 CFR Parts 261, 268, and 302

(FRL-4999-1)

Hazardous Waste Management System; Correction of Listing of P015--Beryllium Powder

AGENCY: Environmental Protection Agency.

ACTION: Technical correction amendment.

SUMMARY: The Environmental Protection Agency today is correcting the listing for "beryllium" in the list of commercial chemical products that are hazardous wastes when discarded or intended to be discarded. The listing description is corrected to read "Beryllium powder." Conforming changes also are being made to the RCRA list of hazardous constituents, the RCRA land disposal restrictions technology-based treatment standards, and to the CERCLA list of hazardous substances.

EFFECTIVE DATE: The amendment is effective June 20, 1994.

ADDRESSES: The Office of Solid Waste (OSW) RCRA Docket is located at the following address: EPA RCRA Docket Clerk, room 2616 (5305), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

The docket is open from 9 a.m. to 4 p.m. Monday through Friday, excluding Federal holidays. The public must make an appointment to review docket materials by calling 202-260-9327. The public may copy 100 pages from the docket at no charge; additional copies are $0.15 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA/Superfund Hotline at 1-800-424 9346. For technical information contact Wanda L. Levine, Office of Solid Waste (5304), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, 202-260-7458.

SUPPLEMENTARY INFORMATION: On April 22, 1988, EPA published a technical corrections notice to make a number of corrections to 40 CFR 261.33(e) and (f) and to appendix VIII of 40 CFR part 261 (53 FR 13383). In that notice, the word "dust" was inadvertently omitted from the 40 CFR 261.33(e) listing, "P015--Beryllium dust," which was the original listing promulgated on May 19, 1980. There have been a number of inquiries since the April 22, 1988 correction notice as to the intent of this listing, and EPA has responded in each case by explaining that the word "dust" was mistakenly omitted, but the intent of the listing (i.e., to list as hazardous the commercial chemical product, beryllium dust, when discarded or intended to be discarded) has remained. In fact, the land disposal restrictions refer to P015 as "Beryllium dust."

In addition, the sole manufacturer of the commercial chemical product has indicated that "beryllium powder" is the actual term used to describe their product. The term dust is not used by industry to describe the commercial chemical product.

For the purpose of clarification, EPA is adding the word "powder" to the P015 listing description. Since this change is only a clarification, the scope of the P015 hazardous waste listing is neither increased, diminished or otherwise affected by this technical correction amendment.

In order to rectify this confusion in the regulated community, the Agency today is correcting the Code of Federal Regulations by adding the word "powder" to the P015 listing for beryllium. Conforming changes also are being made to the RCRA list of hazardous constituents, the RCRA land disposal restrictions technology-based treatment standards, and to the CERCLA list of hazardous substances.

Because this action is a technical correction, prior notice and opportunity for comment is unnecessary, and good cause exists for this change to take effect immediately (see 5 U.S.C. 553(b)). Accordingly, the Agency is not seeking any comments based on today's notice.

List of Subjects

40 CFR Part 261

Environmental protection, Hazardous wastes, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 302

Air pollution control, Chemicals, Emergency Planning and Community Right-to-Know Act, Extremely hazardous substances, Hazardous chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Natural resources, Pesticides and pests, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: June 8, 1994.

Elliott P. Laws,
Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set out in the preamble, Chapter I, of title 40 of the Code of Federal Regulations is amended as follows:

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:
Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6938.

Sec. 261.33 (Amended)

2. In Sec. 261.33 (e), the listing for P015 is revised to read as follows:

Hazardous waste No.	Chemical abstracts No.	Substance
* * * * *		
P015	7440-41-7	Beryllium powder
* * * * *		

Appendix VIII (Amended)

3. In appendix VIII, the listing for Beryllium is revised to read as follows:

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * * * *			
Beryllium powder	Same	7440-41-7	P015
* * * * *			

PART 268--LAND DISPOSAL RESTRICTIONS
1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6924.

Sec. 268.42 (Amended)

2. In Sec. 268.42 revise the "Wastes descriptions and/or treatment subcategory" entry for Waste Code P015 to read "Beryllium powder."

PART 302--DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

1. The authority citation for part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

Sec. 302.4 (Amended)

2. In Sec. 302.4, in the table in paragraph (b), the listing for "Beryllium" is removed and under the column heading "Hazardous substances", "Beryllium dust" is revised to read "Beryllium powder".

Appendix A (Amended)

3. In appendix A the listing for 7440417 is revised to read "Beryllium powder".

(FR Doc. 94-14535 Filed 6-17-94; 8:45 am)

BILLING CODE 6560-50-M

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 1006 2002 3001 3002 3017 3004 -- Solid Waste Disposal Act (Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)
Pub. Law 99-499 -- Superfund Amendments and Reauthorization Act of 1986 (SARA); Emergency Planning and Community Right-to-Know Act of 1986
Pub. Law 92-500 SEC. 2 -- Federal Water Pollution Control Act Amendments of 1972
Pub. Law 96-510 SEC. 102 103 104 -- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); Hazardous Substance Response Revenue Act of 1980
Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)
Pub. Law 98-616 SEC. 245 -- Hazardous and Solid Waste Amendments of 1984
Pub. Law 80-845 SEC. 311 501 -- Federal Water Pollution Control Act (Act of 6/30/48)

Standards for the Management of Specific Hazardous Wastes; Amendment to Subpart C--Recyclable Materials Used in a Manner Constituting Disposal; Final rule
Volume: 59 Issue: 163 Page: 43496
CITATION NUMBER: 59 FR 43496
Date: WEDNESDAY, AUGUST 24, 1994

AGENCY: Environmental Protection Agency--(EPA); Office of Solid Waste--(OSW); Office of Solid Waste and Emergency Response--(OSWER)
DOCUMENT TYPE: Rules and Regulations
CFR: 40 CFR Part 266 268
NUMBERS: SW-FRL-5057-8
DATES: Effective: 19950224
CONTACT INFORMATION: RCRA Hotline, 800-424-9346, 703-412-9810; Narendra Chaudhari; 202-260-4787
ACTION: Final rule
INTERNAL DATA: (FR Doc. 94-20808 Filed 8-23-94; 8:45 am)
Word Count: 2981

SUMMARY: The Environmental Protection Agency (EPA or Agency) is today amending Sec. 266.20, which contains provisions for conditionally exempting hazardous waste-derived products used in a manner constituting disposal (i.e., applied to or placed on land) from the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations. The proposed amendment to Sec. 266.20 was published on February 23, 1994 (59 FR 8583). As specified in the proposal, EPA is amending Sec. 266.20 so that certain

uses of slag residues produced from the high temperature metal recovery (HTMR) treatment of electric arc furnace dust (EPA Hazardous Waste No. K061), steel finishing pickle liquor (K062), and electroplating sludges (F006) are not exempt from RCRA Subtitle C regulations. EPA's proposal also contained a definition for "non-encapsulated" uses of HTMR slags. Following a review of the public comments, EPA is clarifying the definition of non-encapsulated uses of HTMR slags by specifying these uses to be the anti-skid/deicing uses.

This action partially implements a settlement agreement entered into by EPA on August 13, 1993 with the Natural Resources Defense Council (NRDC) and Hazardous Waste Treatment Council (HWTC). This action will effectively prohibit anti-skid/deicing uses of HTMR slags derived from K061, K062, and F006, as waste-derived products placed on the land, since such uses will be allowed only if there is compliance with all Subtitle C standards applicable to land disposal. This rule does not prohibit other uses of these slags that meet Sec. 266.20(b) requirements. The rule also does not prevent the disposal of HTMR slags in a Subtitle D unit if the residuals can meet the risk-based exclusion levels specified in Sec. 261.3(c)(2). EPA plans to propose a regulatory determination on the remaining uses of HTMR slags by December, 1994.

TEXT:

40 CFR Parts 266 and 268

(SW-FRL-5057-8)

Standards for the Management of Specific Hazardous Wastes; Amendment to Subpart C--Recyclable Materials Used in a Manner Constituting Disposal; Final Rule

AGENCY: Environmental Protection Agency.

ACTION: Final rule and response to comments.

SUMMARY: The Environmental Protection Agency (EPA or Agency) is today amending Sec. 266.20, which contains provisions for conditionally exempting hazardous waste-derived products used in a manner constituting disposal (i.e., applied to or placed on land) from the Resource Conservation and Recovery Act (RCRA) Subtitle C regulations. The proposed amendment to Sec. 266.20 was published on February 23, 1994 (59 FR 8583). As specified in the proposal, EPA is amending Sec. 266.20 so that certain uses of slag residues produced from the high temperature metal recovery (HTMR) treatment of electric arc furnace dust (EPA Hazardous Waste No. K061), steel finishing pickle liquor (K062), and electroplating sludges (F006) are not exempt from RCRA Subtitle C regulations. EPA's proposal also contained a definition for "non-encapsulated" uses of HTMR slags. Following a review of the public comments, EPA is clarifying the definition of non-encapsulated uses of HTMR slags by specifying these uses to be the anti-skid/deicing uses.

This action partially implements a settlement agreement entered into by EPA on August 13, 1993 with the Natural Resources Defense Council (NRDC) and Hazardous Waste Treatment Council (HWTC). This action will effectively prohibit anti-skid/deicing uses of HTMR slags derived from K061, K062, and F006, as waste-derived products placed on the land, since such uses will be allowed only if there is compliance with all Subtitle C standards applicable to land disposal. This rule does not prohibit other uses of these slags that meet Sec. 266.20(b) requirements. The rule also does not prevent the disposal of HTMR slags in a Subtitle D unit if the residuals can meet the risk-based exclusion levels specified in Sec. 261.3(c)(2). EPA plans to propose a regulatory determination on the remaining uses of HTMR slags by December, 1994.

EFFECTIVE DATE: This final rule is effective on February 24, 1995.

ADDRESSES: The official record for this rulemaking is identified as Docket Number F-94-SSHF-FFFFF, and is located in the EPA RCRA Docket, room 2616 (Mail Code 5305), 401 M Street, SW., Washington, DC 20460. The docket is open from 9:00 a.m. to 4:00 p.m., Monday through Friday, except on Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. A maximum of 100 pages may be copied at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION, CONTACT: For general information contact the RCRA

Hotline, toll free at (800) 424-9346, or at (703) 412-9810. For specific questions concerning this notice, contact Narendra Chaudhari, Office of Solid Waste (Mail Code 5304), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, (202) 260-4787.

SUPPLEMENTARY INFORMATION:

I. Background

The regulations under 40 CFR 266.20(b), promulgated in 1985, conditionally exempt hazardous waste-derived products used in a manner constituting disposal (i.e., applied to or placed on land) from the RCRA Subtitle C regulations. To be eligible for this exemption, the waste-derived products must meet treatment standards based on Best Demonstrated Available Technology (BDAT) developed under the Land Disposal Restrictions (LDR) program for the original hazardous wastes (see Sec. 266.20(b)). Residuals ("slags") generated from the high temperature metals recovery (HTMR) treatment of hazardous waste K061 (electric arc furnace dust) and, to a limited extent, hazardous wastes K062 (steel finishing pickle liquor) and F006 (electroplating sludges), are eligible for this conditional exemption (assuming that legitimate recycling is occurring). Section 266.20(b) is applicable because the slags are processed into products which are used in highway construction (e.g., as road-base) or applied directly to road surfaces (i.e., as anti-skid/deicing agents).

In August 1991, EPA finalized a generic exclusion for K061 HTMR slags (extended to K062 and F006 HTMR slags in August 1992). Under this exclusion, these slags are excluded from hazardous waste regulations provided they meet designated concentration levels for 13 metals, are disposed of in a Subtitle D unit, and exhibit no characteristics of hazardous waste (Sec. 261.3(c)(2)).

The Natural Resources Defense Council (NRDC) and Hazardous Waste Treatment Council (HWTC) filed a petition for review challenging EPA's decision not to apply "generic exclusion levels"-- levels at which K061 slags are deemed nonhazardous-- to K061 slags used as waste-derived "products" and applied to or placed on land. The generic exclusion levels established for some metals in the K061 HTMR slags are lower than the BDAT standards that apply to K061.

Therefore, while the generic exclusion requires nonhazardous K061 slags meeting exclusion levels to be disposed of in a Subtitle D unit, K061 slags that may exhibit metal levels above the exclusion levels (but below BDAT) may be used as products in a manner constituting disposal under the exemption in Sec. 266.20(b). The petitioners pointed out the anomaly of the slag used in an uncontrolled manner being effectively subject to lesser standards than slag disposed in a controlled landfill.

On August 13, 1993, EPA entered into a settlement agreement with the petitioners which would address their concerns through two separate notice-and-comment rulemakings. EPA agreed to propose the first rule within 6 months of the settlement date (and issue a final rule within 12 months) to either establish generic exclusion levels for "non-encapsulated" uses of K061 slags, or effectively prohibit such uses of K061 slags on the land. EPA also agreed to propose a second rule within 16 months of the settlement date (and issue a final rule within 28 months) to establish generic exclusion levels for "encapsulated" uses of K061 slags on the land. The

agreement specified that the generic exclusion levels will be based on an evaluation of the potential risks to human health and the environment from the use of K061 slags as waste-derived products, taking into account all relevant pathways of exposure.

II. Summary of Proposed Rule

On February 23, 1994, EPA published in the Federal Register a proposed rule to prohibit (by amending Sec. 266.20) non-encapsulated uses of slag residues derived from HTMR treatment of hazardous wastes K061, K062, and F006, as waste-derived products placed on land, unless there is compliance with all RCRA Subtitle C standards applicable to land disposal. EPA defined non- encapsulated uses to be uses in which the HTMR slag is not "contained, controlled, covered, or capped in a manner that eliminates or significantly reduces its mobility and potential for release into the environment (e.g., uses as anti-skid or deicing materials)."
EPA solicited comments on whether the necessary data are available to establish risk-based generic exclusion levels for HTMR slags used in non-encapsulated manners. EPA also solicited all available information on product uses of HTMR slags.

EPA did not seek to prohibit encapsulated uses of HTMR slags derived from K061, K062, and F006 that meet Sec. 266.20 requirements. EPA also did not seek to prevent the disposal of HTMR slags in a Subtitle D unit if the residuals can meet the risk-based exclusion levels specified in Sec. 261.3(c)(2).

III. Public Comments on the Proposed Rule

EPA received comments on the proposed rule from thirteen interested parties. Three commenters supported the Agency's proposal to effectively prohibit non-encapsulated uses of HTMR slags derived from K061, K062, and F006. One commenter, a citizen of a town where HTMR slag material is used as an anti-skid agent, strongly urged EPA to finalize the proposed prohibition on non-encapsulated uses of HTMR slags because of its lead content. Another commenter, the Department of Environmental Resources of a State with several HTMR facilities, stated that it agreed with the prohibition on non- encapsulated uses of HTMR slags because of the many potential pathways of exposure to this material and its unknown health risks. A third commenter, representing the Palmerton Citizens for Clean Environment, provided results of recent lead analysis for HTMR material supplied to a town as anti-skid material. The results, which were not accompanied by any quality assurance/ quality control information, showed total concentrations of lead in the anti- skid material to be in the range of 1,800 ppm to 2,200 ppm (which agrees with waste characterization data obtained by EPA).

Because the above commenters are in agreement with the content of the proposed rule, EPA does not believe any response is necessary. The remaining commenters disagreed and/or were concerned about the proposed rule. These commenters also wanted EPA to provide certain clarifications if it planned to finalize the proposed rule.

In this preamble, EPA is presenting a summary of comments received on the proposed definition of non-encapsulated uses because it was the most significant issue for many of the commenters. EPA's response to these comments, as discussed below, resulted in a modification of the proposed rule (i.e., clarification regarding non-encapsulated uses which are prohibited). A summary of all major comments received that criticized the proposal, and EPA's responses to these comments, are provided in a "Response to Comments Document," which is in the public docket for this rule.

Five commenters strongly urged the Agency to limit the definition of non-encapsulated uses of HTMR slags to its uses as anti-skid/deicing materials (the uses specifically enumerated in the proposed rule). The commenters believed that EPA's proposed definition for "non-encapsulated" uses of HTMR slags ("those uses in which the HTMR slag is not contained, controlled, covered, or capped in a manner that eliminates or significantly reduces its mobility and potential for release into the environment") was vague and required a significant degree of interpretation.

EPA agrees with the commenters that the proposed definition for non-encapsulated uses lacked clarity and should be modified. EPA indicated in the proposal that the non-encapsulated uses of HTMR slags that it is most concerned about are its uses as anti-skid/deicing materials (59 FR 8583; February 23, 1994). This is because anti-skid/deicing uses involve frequent spreading of the HTMR slag materials on road surfaces (an apparently uncontrolled use), which may lead to many potential pathways of exposure to these materials. EPA believes that, if necessary, the second rulemaking required under the settlement agreement (which is to focus on "encapsulated" uses and is due to be proposed in December 1994) will be the appropriate place to address any other uses of concern. As a result, EPA has decided in this final rule to limit the prohibition on non-encapsulated uses of HTMR slags to its uses as anti-skid/deicing materials.

EPA solicited comments in the proposed rule on possible generic exclusion levels for HTMR slags used in non-encapsulated manners, and on the basis for setting these exclusion levels. No comments were received on ways to establish generic exclusion levels that adequately account for multiple potential exposure pathways. EPA, however, notes that it is developing a risk assessment for all major HTMR slag uses to support the second rulemaking required in the settlement agreement. EPA will consider results from this risk assessment (and any other relevant data which become available) to propose possible generic exclusion levels for encapsulated uses of HTMR slags. In addition, if the results of this assessment warrant, EPA may reconsider the prohibition for certain uses of HTMR slags finalized in this rulemaking.

IV. Final Agency Decision

This rule prohibits anti-skid/deicing uses of HTMR slags derived from K061, K062, and F006, as waste-derived products placed on the land, unless there is compliance with all Subtitle C standards applicable to land disposal.

In the proposal (59 FR 8583, February 23, 1994), EPA stated that it would prohibit non-encapsulated uses of HTMR slags derived from K061, K062, and F006, as waste-derived products placed on the land, unless there is compliance with all Subtitle C standards applicable to land disposal. EPA proposed to define the term "non-encapsulated" uses rather broadly to be "those uses in which the HTMR slag is not contained, controlled, covered, or capped in a manner that eliminates or significantly reduces its mobility and potential for release into the environment (e.g., uses as anti-skid or deicing materials)". As discussed above, EPA agreed with commenters that this proposed definition was too vague, and instead has effectively prohibited uses of HTMR slags as anti-skid/deicing materials (which are believed to be the uses of greatest potential environmental concern).

Accordingly, EPA is amending the existing regulations under Sec. 266.20 that conditionally exempt hazardous waste-derived products used in a manner constituting disposal from RCRA Subtitle C regulations to reflect this change. EPA is also including a cross-reference in Sec. 268.41 (the Land Disposal Restriction treatment standards) which notes the restrictions placed on use of slags in Sec. 266.20. The language of Sec. 266.20 is revised to prohibit uses of HTMR slags as anti-skid/deicing materials, unless they comply with all of the applicable Subtitle C standards (i.e., permitting, minimum technology standards for land disposal units, financial responsibility, etc.). Since these requirements cannot realistically be met by entities that would use the HTMR slag in this fashion (i.e., entities are unlikely to seek land disposal permits for the placement of anti-skid/deicing materials on the roads), EPA is effectively prohibiting uses of HTMR slags as anti-skid/deicing materials. As noted earlier, EPA plans to propose a regulatory determination on the remaining uses of HTMR slags in the near future, and may also examine possible risk-based standards for these non- encapsulated uses.

V. Effective Date

This final rule is effective February 24, 1995. (See RCRA section 3010(a)). The Agency believes that this will provide sufficient time for affected parties to come into compliance.

VI. State Authority

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments (HSWA) of 1984, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State

until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in authorized States in the interim.

B. Effect on State Authorization

EPA views this final rule as a HSWA regulation. The rule can be viewed as part of the process of establishing land disposal prohibitions and treatment standards for K061, K062, and F006 hazardous wastes. (See 56 FR 41175; August 19, 1991.) The ultimate goal of the land disposal prohibition provisions is to establish standards, "if any", which minimize short-term and long-term threats to human health and the environment posed by hazardous waste land disposal. (See RCRA section 3004(m)(l).) In this case, the Agency is uncertain what level of treatment would assure that these threats are minimized when HTMR slag is used for anti-skid/deicing purposes, and consequently is effectively prohibiting this use. (See 57 FR at 37237, August 18, 1992, interpreting "if any" clause in section 3004(m)(l)). Thus, as noted above, EPA will implement this rule in authorized States until their programs are modified to adopt the new prohibition and the modification is approved by EPA.

This final rule will result in more stringent Federal standards. Section 271.21(e)(2) requires that States that have final authorization must modify their programs to reflect Federal program changes and must subsequently submit the modifications to EPA for approval.

States with authorized RCRA programs may already have requirements similar to those in this final rule. These State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, States with existing standards could continue to administer and enforce their standards as a matter of State law.

In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

VII. Regulatory Impact

A. Executive Order 12866

Under Executive Order 12866 (see 58 FR 51735, October 4, 1993), EPA must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy,

productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is not a "significant regulatory action" and is therefore not subject to OMB review.

B. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., whenever an Agency is required to issue a general notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the impact of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required, however, if the head of the Agency certifies that the rule will not have any impact on any small entities.

As noted in the proposal, this amendment will not have any significant impact on any small entities, since the regulated community will continue to have other readily available options for using and managing HTMR slags and small users will have readily available substitutes. This conclusion is supported by the economic analysis performed by the Agency in response to comments. The Agency estimated that the increase in annual cost for a small user as a result of this amendment would range between $8,325 to $15,300. (See the Response to Comments Document contained in the public docket for this rule for details of Agency's economic analysis.) Therefore, pursuant to section 605(b) of the Regulatory Flexibility Act, the Administrator certifies that this regulation will not have a significant economic impact on a substantial number of small entities. This regulation, therefore, does not require a formal regulatory flexibility analysis.

C. Paperwork Reduction Act

The Agency has determined that there are no additional reporting, notification, or recordkeeping provisions associated with this proposed rule. Such provisions, were they included, would be submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.

List of Subjects in 40 CFR Parts 266 and 268

Environmental protection, Energy, Hazardous waste, Petroleum, Recycling, Reporting and recordkeeping requirements.

Dated: August 9, 1994.

Carol M. Browner,
Administrator.

PART 266--STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

1. The authority citation for Part 266 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6934.

Subpart C--Recyclable Materials Used in a Manner Constituting Disposal

2. Section 266.20 is amended by adding a new paragraph (c) to read as follows:

Sec. 266.20 Applicability.

* * * * *

(c) Anti-skid/deicing uses of slags, which are generated from high temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, in a manner constituting disposal are not covered by the exemption in paragraph (b) of this section and remain subject to regulation.

PART 268--LAND DISPOSAL RESTRICTIONS

3. The authority citation for Part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

4. Table CCWE in Sec. 268.41(a) is amended by redesignating footnote 2 as footnote 3 at the end of the table and in the text at waste code FO2O-FO23, and by adding a new footnote 2 at the end of the table and in the last column in the table, "Nonwastewaters/Notes", for waste codes F006, K061, and K062 to read as follows:

Sec. 268.41 Treatment standards expressed as concentrations in waste extract.

(a) * * *

/2/ See also restrictions on use of slags for anti-skid/deicing purposes in Sec. 266.20(c).

(FR Doc. 94-20808 Filed 8-23-94; 8:45 am)

BILLING CODE 6560-50-P

LEGAL PUBLICATIONS:
Pub. Law 89-272 SEC. 3006 1006 2002 3004 3013 -- Solid Waste Disposal Act

(Act of 10/20/65); Motor Vehicle Air Pollution Control Act (Act of 10/20/65)

Pub. Law 96-482 SEC. 17 -- Solid Waste Disposal Act Amendments of 1980

Pub. Law 94-580 SEC. 2 -- Resource Conservation and Recovery Act of 1976 (RCRA)

Pub. Law 98-616 -- Hazardous and Solid Waste Amendments of 1984

[Federal Register: September 19, 1994]

ENVIRONMENTAL PROTECTION AGENCY
40 CFR Parts 148, 260, 261, 264, 265, 266, 268 and 271

[FRL-5028-9]
RIN 2050-AD89

Land Disposal Restrictions Phase II--Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes

AGENCY: **Environmental Protection Agency** (EPA).

ACTION: Final rule.

SUMMARY: As part of the **Agency**'s **Land Disposal** Restrictions (LDR) program, EPA is today promulgating treatment standards for the newly identified organic toxicity characteristic (TC) wastes (except those managed in Clean Water Act (CWA) systems, CWA- equivalent systems, or Class I Safe Drinking Water Act (SDWA) injection wells), and for all newly listed coke by-product and chlorotoluene production wastes. The required treatment standards for these wastes must be met before they are **land** disposed. EPA is also requiring ignitable characteristic wastes with a high total organic carbon (TOC) content and toxic characteristic pesticide wastes, that are being disposed in Class I nonhazardous waste injection wells, to either be injected into a well that is subject to a no-migration determination, or be treated by the designated LDR treatment method. Promulgation of these treatment standards for the newly identified and listed wastes and promulgation of the dilution prohibitions for high TOC ignitables and pesticides fulfills requirements of a proposed consent decree between EPA and the **Environmental** Defense Fund, and a settlement agreement between EPA, the Hazardous Waste Treatment Council, and a number of **environmental** groups including the Natural Resources Defense Council.

EPA is also making a major improvement in the **Land Disposal** Restrictions program in order to simplify and provide consistency in the requirements. EPA is establishing a single set of requirements, referred to as universal treatment standards, that apply to most hazardous wastes. EPA is also simplifying the **Land Disposal** Restrictions program by reducing paperwork for the regulated community, and improving guidance to make compliance easier. EPA is also publishing clarifying guidance regarding treatability variances, which largely restates previous **Agency** statements. Finally, EPA is modifying the hazardous waste recycling regulations which will allow streamlined regulatory decisions to be made regarding the regulation of certain types of recycling activities.

DATES: Effective date: The final rule is effective on December 19, 1994. Section 266.100 and Appendix VIII are effective September 19, 1994.

Applicability dates: For high TOC D001 (40 CFR 148.17) and halogenated pesticides wastes (40 CFR 148.17) disposed in Class I nonhazardous injection deep wells, the compliance date is September 19, 1995. For radioactive waste mixed with the newly listed or identified wastes, or soil and debris contaminated with such mixed wastes (40 CFR 268.38), the compliance date is September 19, 1996. Although the effective date of today's rule is December 19, 1994, facilities will be in compliance if they meet the universal treatment standards (UTS) before the 90-day period ends.

ADDRESSES: The official record for this rulemaking is identified as Docket Number F-94-CS2F-FFFFF, and is located in the EPA RCRA Docket, U.S. **Environmental Protection Agency**, Room 2616, 401 M Street, SW., Washington, DC 20460. The RCRA Docket is open from 9 am to 4 pm Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $.15 per **page**. The mailing address is EPA RCRA Docket (5305), U.S. **Environmental Protection Agency**, 401 M Street, SW., Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424-9346 (toll-free) or (703) 412-9810 locally. For technical information about mercury and radioactive mixed waste, contact Shaun McGarvey on (703) 308-8603; for technical information about lab packs and metal Universal Treatment Standards, contact Anita Cummings on (703) 308-8303; for technical information about organic Universal Treatment Standards, contact Lisa Jones on (703) 308-8451; for technical information about Toxicity Characteristic wastes, contact Mary Cunningham on (703) 308-8453; for technical information about petroleum refining wastes, contact Jose Labiosa on (703) 308-8464; for other information, contact Richard Kinch on (703) 308-8414; of the Waste Treatment Branch, Office of Solid Waste (5302W), U.S. **Environmental Protection Agency**, 401 M Street, SW., Washington, DC 20460, phone (703) 308-8434. For technical information on capacity analyses, contact Bengie Carroll of the Capacity Programs Branch, Office of Solid Waste (5302W), phone (703) 308-8440. For technical information on Hazardous Waste Recycling, contact Mitch Kidwell of the Regulation Development Branch, Office of Solid Waste (5304), phone (202) 260-8551.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Background

A. Summary of the Statutory Requirements of the 1984 Hazardous and Solid Waste Amendments, and Requirements of the 1993 Settlement Agreement With the **Environmental** Defense Fund

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, largely prohibit the **land disposal** of untreated hazardous wastes. Once a hazardous waste is prohibited from **land disposal**, the statute provides only two options for legal **land disposal**: meet the treatment standard for the waste prior to **land disposal**, or dispose of the waste in a **land disposal** unit that has been found to satisfy the statutory no-migration test. A no-migration unit is one from which there will be no migration of hazardous constituents for as long as the waste remains hazardous. RCRA sections 3004 (d), (e), (g)(5).

The treatment standards may be expressed as either constituent concentration levels or as specific methods of treatment. These

standards must substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized. RCRA section 3004(m)(1). For purposes of the restrictions, **land disposal** includes any placement of hazardous waste in a landfill, surface impoundment, waste pile, injection well, **land** treatment facility, salt dome formation, salt bed formation, or underground mine or cave. RCRA section 3004(k).

The **land disposal** restrictions are effective upon promulgation. RCRA section 3004(h)(1). However, the Administrator may grant a national capacity variance from the immediate effective date and establish a later effective date (not to exceed two years) based on the earliest date on which adequate alternative treatment, recovery, or **disposal** capacity which protects human health and the environment will be available. RCRA section 3004(h)(2). The Administrator may also grant a case-by-case extension of the effective date for up to one year, renewable once for up to one additional year, when an applicant successfully makes certain demonstrations. RCRA section 3004(h)(3). See 55 FR 22526 (June 1, 1990) for a more detailed discussion on national capacity variances and case-by-case extensions.

In addition, Congress prohibited the storage of any waste which is prohibited from **land disposal** unless such storage is to allow for the accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment or **disposal**. RCRA section 3004(j). For storage up to one year, EPA has taken the position that the **agency** bears the burden of proving that such storage was not solely for the purpose of accumulation of quantities necessary to facilitate proper recovery, treatment or **disposal**. 40 CFR 268.50(b). For storage beyond one year, however, the burden of proof shifts to the generator or owner/operator of a treatment, storage or **disposal** facility to demonstrate that such storage was solely for the purpose of accumulation of quantities necessary to facilitate proper recovery, treatment or **disposal**. 40 CFR 268.50(c). The provision applies, of course, only to storage which is not also defined in section 3004(k) as **land disposal**.

EPA was required to promulgate **land disposal** prohibitions and treatment standards by May 8, 1990 for all wastes that were either listed or identified as hazardous at the time of the 1984 amendments, RCRA sections 3004 (d), (e), and (g), a task EPA completed within the statutory timeframes. EPA was also required to promulgate prohibitions and treatment standards for wastes identified or listed as hazardous after the date of the 1984 amendments within six months after the listing or identification takes effect. RCRA section 3004(g)(4).

The **Agency** did not meet this latter statutory deadline for all of the wastes identified or listed after the 1984 amendments. As a result, a suit was filed by the **Environmental** Defense Fund (EDF). EPA and EDF signed a consent decree (lodged with but not entered by the District Court) that establishes a schedule for adopting prohibitions and treatment standards for newly identified and listed wastes. (EDF v. Reilly, Civ. No. 89-0598, D.D.C.) This proposed consent decree was recently modified as a result of the court decision on the Third Third final rule (Chemical Waste Management v. EPA, 976 F.2d 2 (D.C. Cir. 1992), cert. denied 113 S. Ct. 1961 (1993) (CWM v. EPA)). Today's rule fulfills several provisions of the proposed consent decree. The rule establishes treatment standards for newly listed coke by-product and chlorotoluene production wastes, and for the D018-D043 TC wastes (TC

wastes identified as hazardous because of the presence of organic hazardous constituents) when these wastes are managed in systems other than those wastewater treatment systems whose discharge is regulated under the Clean Water Act (CWA), by zero-dischargers that do not engage in CWA-equivalent treatment prior to **land disposal**, and by injection into other than underground injection control (UIC) Class I deep injection wells regulated under the Safe Drinking Water Act (SDWA). Soils contaminated with these newly identified and listed wastes are also covered by this rule.

Finally, this rule prohibits injection into deep wells of high Total Organic Carbon ignitable wastes (D001) and Toxic Characteristic organic pesticides (D012-D017) unless they are treated to meet applicable treatment standards, or the deep well has received a no-migration variance. This last prohibition is in partial fulfillment of the settlement agreement following the D.C. Circuit's decision in CWM v. EPA.

EPA is also modifying a number of the existing **land disposal** restrictions rules. Although not required by the settlements discussed above, these changes reflect EPA's updated technical knowledge, simplify implementation of the program, and provide greater programmatic consistency. In today's notice, EPA is establishing a set of treatment standards (called universal treatment standards) that apply to most hazardous wastes, changing requirements for **land disposal** of lab packs containing prohibited hazardous wastes, and simplifying paperwork requirements.

B. Pollution Prevention Benefits

EPA's progress over the years in improving **environmental** quality through its media-specific pollution control programs has been substantial. Over the past two decades, standards for pollution control concentrated to a large extent on ``end-of-pipe'' treatment or **land disposal** of hazardous and nonhazardous wastes. Although none of the treatment standards in today's rule require waste minimization or recovery, these are viable options for facilities to choose to use to comply with universal treatment standards. For example, facilities may choose to reduce the generation of wastes and/or treat certain metal-containing wastes by using high temperature metal recovery (HTMR), which has been shown to be effective for treating many metal bearing wastes.

C. Relationship of Best Demonstrated Available Technology (BDAT) Treatment Standards to Initiatives To Strengthen Federal Controls Governing Hazardous Waste Combustion Devices

On May 18, 1993, EPA Administrator Browner announced additional steps that would be pursued to protect public health and the environment by further encouraging reduction in the amount of hazardous wastes generated in this country and strengthening federal controls governing hazardous waste incinerators and other combustion devices. With the announcement, the Draft Hazardous Waste Minimization and Combustion Strategy (also referred to as the Draft Strategy) was released, upon which the **Agency** has sought broad national dialogue. Among other things, the Draft Strategy called for a national review of the relative roles of hazardous waste combustion and source reduction in hazardous waste management.

Since release of the Draft Strategy, the **Agency** has pursued a wide

variety of activities. For example, EPA released in May 1994 a draft technical report entitled ``Combustion Emissions Technical Resource Document''. This report provides EPA's preliminary technical analysis of best operating practices and achievable emission levels with regards to emissions of dioxin and particulate matter from existing hazardous waste incinerators, and boilers and industrial furnaces (BIFs) burning hazardous wastes, based on data already submitted to EPA. The report was also released to provide for early pre-proposal dialogue on the types of additional controls and emission limits that should be adopted for hazardous waste combustion units. In another action, the **Agency** announced its proposed permitting and public participation rule. This rule would amend EPA's RCRA regulations to provide earlier and more effective opportunities for public participation in the RCRA permitting process. The rule also proposes tighter standards for the interim period immediately after a facility trial burn is completed but before a final permit determination is made.

Today's rule provides the **Agency** with another opportunity to address the objectives of the Draft Strategy. In particular, this rule specifies a series of new treatment standards that must be met before hazardous wastes are **land** disposed. As in previous LDR rules, the standards for hazardous organic constituents are, in many cases, based on the performance of combustion technology. In the proposed rule, the **Agency** solicited comments and data on whether other treatment technologies, especially recycling technologies, can achieve these or comparable treatment levels. EPA also solicited comment on whether the levels should be modified so as to allow and encourage the use of non-combustion treatment technologies.

It remains EPA's primary objective in hazardous waste management to reduce the amount of hazardous waste that is generated so as to minimize the need to treat and dispose of hazardous waste. A wide range of waste minimization activities are underway, including development of the National Plan for Hazardous Waste Minimization released in draft on May 23, 1994 as part of the Draft Strategy. However, for those hazardous wastes that are still produced and are disposed, the waste must be treated (see RCRA section 3004(m)).

While the **Agency** has concerns with combustion devices that are not properly designed and operated, particularly if they do not fully control toxic metals and organics (including products of incomplete combustion (PICs)), the **Agency** also believes that combustion technologies, if properly designed and operated, do minimize threats to human health and the environment for many waste streams. Several commenters agree with the **Agency** on this point. In fact, these commenters (including **environmental** groups) argue that relaxing the treatment standards to reduce the amount of treatment otherwise achieved via combustion could actually increase threats to human health and the environment, and thus violate EPA's statutory requirements under 3004(m). In addition, it has also been argued that loosening the treatment standards will not necessarily result in less combustion because the regulated community may still choose to rely on combustion to meet the standards. Commenters also suggested that loosening the treatment standards will actually act as a disincentive to seek pollution prevention alternatives. This latter point seems to have merit in that based on some preliminary analysis of the **land disposal** restrictions program by the **Agency**, the existing treatment standards have raised the cost of hazardous waste management substantially and have been a factor in reducing the amount of hazardous waste generated.

To address those combustion facilities that are not operated

properly, the **Agency** will continue its aggressive inspection and enforcement program to bring the facilities back into compliance with all requirements and to impose penalties. In addition, the **Agency** is actively engaged with all interested parties in discussions on upgrading combustion regulations. EPA is considering, as part of this upcoming rulemaking, revising the controls on dioxin and furan emissions, particulate matter, and toxic metals. In the course of the rulemaking, the public will have the opportunity to comment on the **Agency**'s proposals. As noted earlier, EPA is already seeking public comment on its preparatory work for this rulemaking to upgrade combustion regulations through release of the Combustion Emissions Technical Resource Document, this past May.

Several commenters indicated that the LDR treatment standards should not be based on combustion performance because this will encourage combustion over other treatment alternatives. Although the **Agency** is willing to look at alternative technologies, such technologies must still achieve levels of performance that satisfy the dictates of RCRA section 3004(m). Also, we must have some assurance that any alternative treatment method is done safely. No information or data was provided by these commenters on the issues of the effectiveness or safety of the alternative treatment technologies or limits, or that such alternatives would be equally or more protective of human health and the environment. (As EPA has stated many times, the **Agency** specifies concentration levels as the treatment standards rather than mandated methods of treatment because this provides maximum flexibility in the selection of treatment technology that may be used.)

Several commenters also asserted that only combustion technologies can achieve the levels specified as treatment standards for organics. However, no treatability data were provided to support their general assertions. On the other hand, limited data were provided on specific alternative treatment technologies that can also achieve the treatment standards in today's rule. Therefore, the **Agency** is not convinced that the treatment standards for organics in today's rule require modification to be achievable by technologies other than combustion, and such other technologies may be used to meet these standards.

D. Relationship of LDR Treatment Standards to Risk-based Treatment Standards

The principal objection to the proposed UTS was that the values do not reflect risk, that is, the standards are based on performance of a treatment technology rather than on assessment of risks to human health and the environment posed by the waste. The debate over technology- versus risk-based treatment standards has continued throughout the development of the **land disposal** restrictions. EPA's ultimate policy preference is to establish risk-based levels that truly minimize threats to both human health and the environment. 55 FR at 6641 (Feb. 26, 1990). Such standards would cap the extent of hazardous waste treatment. RCRA section 3004(m)(1). The difficulties involved in this task, however, are formidable and very controversial. The technical issues include assessing exposure pathways other than migration to groundwater, taking **environmental** risk into account, and developing adequate toxicological information for the hazardous constituents controlled by the hazardous waste program.

The **Agency** is currently working on a rulemaking that will define hazardous constituent concentration levels below which a waste is no longer designated under RCRA subtitle C as ``hazardous.'' Discussions

concerning these levels are taking place in the Federal Advisory Committee on the Hazardous Waste Identification Rule (HWIR). The HWIR Committee is discussing issues and providing recommendations for two rulemakings: as-generated waste and contaminated media.

The HWIR Committee is made up of industry, environmentalists, treaters and disposers, and state implementing officials. The HWIR Committee has begun discussions by focusing on concentrations below which waste mixtures and treatment residuals would no longer be subject to the hazardous waste regulations (``exit criteria''), while also discussing whether there is a regulatory approach to bring under regulation clearly hazardous waste not now controlled by the hazardous waste regulations (an ``entry'' rule). In addition, EPA is working with the Committee to consider whether risk-based exit criteria or other risk-based values based on the same exposure modeling could also serve as minimize threat levels to potentially cap treatment standards for the **land disposal** restrictions.

In Hazardous Waste Treatment Council v. EPA, 886 F. 2d 355 (D.C. Cir. 1989), cert. denied 111 S. Ct 139 (1990), the court held that the statute can be read to allow either technology-based or risk-based standards, and further held that technology-based standards are permissible so long as they are not established ``beyond the point at which there is no `threat' to human health or the environment.'' Id. at 362. The court further held that the particular technology-based standards at issue were not established below this ``minimize threat'' level, notwithstanding that (in some cases) the standards were below Maximum Contaminant Levels used for drinking water under the Safe Drinking Water Act, and were below the RCRA characteristic level. Id. at 361-62. In the court's view, the RCRA section 3004(m) minimize threat standard was more stringent than that used to establish either drinking water standards or characteristic levels. EPA finds, for purposes of this rule, that none of the treatment standards are established below levels at which threats to human health and the environment are minimized. This finding stems from the **Agency**'s inability at the present time, as explained above, to establish concentration levels for hazardous constituents which represent levels at which threats to human health and the environment are minimized. Unless the **Agency** determines risk-based concentration levels that achieve the ``minimized threat'' requirement for a particular wastestream, the **Agency** believes that BDAT treatment (as reflected by the UTS levels) fulfills the statutory charge.

E. Treatment Standards for Hazardous Soil

As stated in the September 14, 1993 proposal (58 FR 48124), EPA recognizes that the treatment standards promulgated for as-generated hazardous waste may not always be achievable or appropriate for soil contaminated with that waste. EPA therefore proposed less stringent alternative treatment standards that would specifically apply to hazardous soils. In addition, EPA proposed to codify the ``contained-in'' policy for contaminated media (see 58 FR 48127). Subsequent to the proposal, the **Agency** received a number of comments from the varied constituencies (industry, **environmental**, waste treatment and state) involved in the Hazardous Waste Identification Rule (HWIR) effort for addressing contaminated media, urging the **Agency** to await the results of that effort before developing soil-specific treatment standards. Thus, EPA has decided not to promulgate alternative treatment standards for hazardous soil and the codification of the contained-in policy as

part of this rulemaking, but rather will address it as part of the HWIR effort for contaminated media. EPA announced this decision on November 12, 1993 (see 58 FR 59976) and again on March 8, 1994 (see 59 FR 10778).

The Hazardous Waste Identification Rule for Contaminated Media, which is being developed by EPA in concert with the States and with affected stakeholders, is intended to create a comprehensive regulatory framework within RCRA Subtitle C that will apply to the management of contaminated media that are managed as part of remediation activities. Through the public dialogue process, a conceptual framework has been developed for HWIR for media. As currently envisioned, the HWIR media rule will establish mandatory treatment requirements for soils (and possibly other media) that are highly contaminated, while less contaminated soils would be subject to management requirements of the overseeing regulatory **agency**. The HWIR media rule is expected to encourage national consistency in the management of higher risk media, while providing management flexibility for a significant volume of lower risk contaminated media, thereby facilitating more timely and less costly cleanups.

Although the HWIR rule for contaminated media is being developed on a different schedule than the LDR rules, EPA believes (and is supported by many commenters) that it is appropriate to address the issue of setting treatment standards for soils within the broader framework of the HWIR rule, since such treatment requirements are expected to be an integral part of that rule. In addition, EPA believes that the contained-in policy is one of the key issues that must be addressed in the development of a comprehensive regulatory framework for management of contaminated media.

In the meantime, hazardous soils are generally subject to the LDR treatment standards that apply to the hazardous wastes with which the soils are contaminated, including those addressed in today's rule.

The **Agency** has stated a presumption, however, that the treatment standards for as-generated wastes are generally inappropriate or unachievable for soils contaminated with hazardous wastes, within the meaning of 40 CFR 268.44(a) (see 55 FR 8759-60, March 8, 1990). It has been the **Agency**'s experience that contaminated soils are significantly different in their treatability characteristics from the wastes that have been evaluated in establishing the BDAT standards, and thus, will generally qualify for a treatability variance under 40 CFR 268.44. For guidance on treatability variances for soils, see the EPA Fact Sheet entitled ``Regional Guide: Issuing Site-Specific Treatability Variances for Contaminated Soils and Debris from **Land Disposal** Restrictions (OSWER Publication 9839.3-08FS). For RCRA actions, the Regional Administrator was delegated the authority to deny or grant these variances in a non-rulemaking procedure under 40 CFR 268.44(h) on April 22, 1991. These variances may be granted by State agencies in States authorized for Sec. 268.44. Variance authority for CERCLA actions is discussed in LDR Guides 6A (revised Sept. 1990) and 6B (OSWER 9347.3-06FS and 9347.3-06BFS).

As previously noted, EPA chose not to develop separate treatment standards for soils in this rulemaking, and currently plans to address treatment standards for contaminated soils in the context of the Hazardous Waste Identification Rule (HWIR) for contaminated media, which is currently under development. If, however, the HWIR Contaminated Media rule does not sufficiently address treatment standards for contaminated soils in a timely manner, the **Agency** may promulgate such standards in a separate rulemaking. Information on the

HWIR Contaminated Media rule may be obtained by contacting Carolyn Loomis, at (703) 308-8626.

Until LDR standards specific to soils are promulgated, EPA believes that treatability variances will generally be appropriate when hazardous soils are managed as part of site remediation activities. The **Agency** recognizes, however, that in some cases obtaining a treatability variance as provided under Sec. 268.44 could cause delays in implementing remedial actions. The **Agency** is currently considering whether changes to the existing variance or authorization procedures should be made as a means of expediting cleanup actions that are conducted under RCRA or other Federal or State authorities, or other cleanups initiated by responsible parties. Such changes, if necessary, will be addressed in a future rulemaking.

II. Summary of Rule

A. Treatment Standards for Newly Identified Organic Toxicity Characteristic (TC) Wastes

On March 29, 1990, EPA promulgated a rule that identified organic constituents (in addition to existing EP metals and pesticide constituents) and levels at which a waste is considered hazardous based on the characteristic of toxicity (55 FR 11798). Because these wastes were identified as hazardous after the enactment date of HSWA in 1984, they are ``newly identified wastes'' for purposes of the LDR program. Included are wastes identified with the codes D018 through D043 based on the toxicity characteristic leaching procedure (TCLP), i.e., TC wastes. EPA is establishing treatment standards for each of these constituents if they are managed in systems other than those regulated under the Clean Water Act (CWA), those engaging in CWA-equivalent treatment prior to **land disposal**, and those injected into Class I deep injection wells regulated under the Safe Drinking Water Act (SDWA). (For an explanation of these qualifications, see the May 24, 1993 Interim Final Rule (58 FR 29860).) In addition, because wastes exhibiting the toxicity characteristic (TC) can contain treatable levels of other hazardous constituents, EPA is establishing treatment standards for the underlying hazardous constituents, as defined in 268.2(i). These rules are consistent with the court's opinion in Chemical Waste Management v. EPA, 976 F.2d 2, 17-8 (D.C. Cir. 1992), cert. denied 113 U.S. 1961 (1993), which held that all hazardous constituents in characteristic wastes must meet the levels of performance satisfying the requirements in RCRA 3004(m) before **land disposal**, and that treatment standards cannot be achieved by dilution (provided, of course, that treatment standards are not established below the level at which threats to human health and the environment are minimized).

B. Prohibition of Dilution of High TOC Ignitable and of TC Pesticide Wastes Injected Into Class I Deep Wells

In its ruling on the Third Third LDR Rule, the D.C. Circuit Court of Appeals remanded the portion of the **Agency**'s rule allowing treatment standards for characteristic wastes to be achieved by dilution. The **Agency** is continuing to develop a regulatory response to implement the court's ruling. As part of that response, EPA is today requiring that hazardous constituents in two types of characteristic wastes, high total organic carbon (TOC) ignitable liquids (D001), and halogenated

pesticide wastes that exhibit the toxicity characteristic (D012-D017), be fully treated before those wastes are disposed unless the wastes are disposed in an injection well that has a no-migration variance.

The **Agency** believes that treatment of these particular wastestreams is warranted. (See Section VIII--Deep Well Injection Issues for further discussion.) The D001 wastes are ignitable with potentially high concentrations of hazardous constituents, and the pesticide wastes contain particularly toxic constituents. Further, the organics in D001 high TOC liquids can be recovered, destroyed, or used as a fuel and occur in only small volumes so that segregation and treatment should not prove difficult.

C. Treatment Standards for Newly Listed Wastes

EPA has promulgated a number of hazardous waste listings since the enactment of HSWA in 1984, referred to as ``newly listed wastes'' under the LDR program. This rule describes the treatment technologies (recycling is a type of treatment) identified as BDAT for several of these newly listed wastes, and establishes treatment standards based on these BDATs. Newly listed wastes included in today's rule are K141-K145, K147-K148, and K149-K151 (coke by-product production wastes and chlorotoluene wastes) (see 40 CFR 261.32 for a description of these wastes).

D. Universal Treatment Standards

Today's rule promulgates universal treatment standards (UTS) for organic, metal, and cyanide constituents--one set for wastewaters and a different set for nonwastewaters--that replace existing treatment standards for hazardous wastes. (``Replace'' is something of a misnomer, as explained more fully below, since many of the standards actually remain at current levels, and the rule does not require treatment of hazardous constituents not already regulated under current standards.) Currently, facilities managing hazardous wastes must meet LDR treatment standards established for many different listed and characteristic hazardous waste codes before the waste may be **land** disposed. In some cases, a constituent regulated under the treatment standard for one waste was also regulated in another waste at different concentration levels. Today's rulemaking eliminates these differences in concentration limits for the same constituent to provide a better assessment of treatability, reduce confusion, and ease compliance and enforcement. Promulgation of UTS does not change the constituents of concern regulated in listed wastes--that is, if only cadmium, lead and chromium have been regulated in a listed waste, only cadmium, lead and chromium are subject to regulation now that UTS are promulgated. However, the concentration levels for cadmium, lead and chromium now are numerically identical with UTS for those constituents.

E. Modifications to Hazardous Waste Recycling Regulations

The **Agency** is modifying the regulatory framework to the definition of solid waste to allow environmentally beneficial recycling operations to continue without the regulatory impediments imposed by full RCRA Subtitle C requirements. In turn, this will allow EPA and the states to streamline their efforts and better focus on operations that are part of the nation's waste **disposal** problem, rather than on those that are not, while the **Agency** continues to look at the overall definition.

These modifications will broaden the 40 CFR 261.2(e)(1)(iii) ``closed-loop'' recycling exclusion from the definition of solid waste such that the residues of a secondary process are excluded from being a solid waste if they are reinserted into the process without prior reclamation (and also similarly broaden the related 40 CFR 260.30(b) variance for materials that are reclaimed prior to reinsertion). These provisions will put secondary recovery operations that recycle residues which they generated on the same regulatory footing as primary recovery operations. The modifications are based, in part, on two Court opinions (American Petroleum Institute v. EPA, 906 F.2d 726 (D.C. Cir. 1990) (API) and American Mining Congress v. EPA, 907 F. 2d 1179 (D.C. Cir. 1990) (AMC II)) which indicate that the **Agency** has some discretion to consider the manner in which a secondary material is managed in determining RCRA jurisdiction (i.e., RCRA jurisdiction may be determined, at least in part, by consideration of whether the material is part of the waste management problem, as indicated by the potential for the material to pose a hazard to human health and the environment when recycled).

III. Improvements to the Existing **Land Disposal** Restrictions Program

A. Background

``Our goal is to make the entire federal government both less expensive and more efficient . . . we intend to redesign, to reinvent, to reinvigorate the entire national government.''

President Bill Clinton Remarks Announcing the National Performance Review, March 3, 1993

``We are searching for ways to change--to work better and smarter so that the **Agency** can deliver high quality results at a reduced cost. Our aim is to treat citizens as customers, improve the service and delivery of our programs, and eliminate waste and inefficiency.''

From ``Creating A U.S. **Environmental Protection Agency** that Works Better And Costs Less'' (EPA's National Performance Review Phase I Report)

In the past several years, the EPA has embarked on major efforts to improve the quality of its work in protecting human health and the environment. Coincident with this emphasis on improvement in the way its work is done, the **Agency** is striving to help reinvent government, in part by streamlining its organization and its work in order to be more efficient and save public resources. In that spirit, a major part of today's rule is designed to improve the quality and efficiency in the **Land Disposal** Restrictions Program. The measures promulgated today to improve the Program received widespread support from commenters when they were proposed.

The universal treatment standards, described in detail in the next section, greatly simplify both compliance and enforcement with the LDRs, without sacrificing **protection** of the environment or human health. In particular, the rule replaces the myriad constituent concentration levels in the LDR treatment standards for most hazardous wastes with a uniform set of constituent levels. Thus, the treatment standard concentration for a constituent in waste A will be the same concentration as for that constituent in waste B. As a result,

hazardous waste generators and treaters should be able to save money and effort in treating hazardous wastes. These facilities will be able to operate more efficiently by consolidating treatment activities. One facility, for example, estimated an annual savings of $750,000 from not having to campaign treat their wastes with varying limits. The consistency provided by universal treatment standards will make it easier to comply with the LDRs. Likewise, the universal treatment standards will make the job of enforcement easier for state governments. With universal treatment standards in place, it will also be easier and quicker for EPA to set standards for hazardous wastes identified in the future (assuming those standards are feasible and appropriate for newly identified and listed wastes). The end result for the regulated community, states, and the EPA will be to save resources for other pressing tasks.

While establishment of universal treatment standards is the primary improvement, other improvements are also included in today's rule. In particular, the **Agency** is:

<bullet> Consolidating three separate tables containing treatment standards into a single consolidated table;

<bullet> Reducing the information required on notification forms;

<bullet> Simplifying the regulations for treatment of lab packs;

<bullet> Providing easy-to-read flowcharts and a simple guide to paperwork requirements in order to make the rule's requirements clearer and easier to implement.

Although today's rule takes significant steps in improving the **Land Disposal** Restrictions program, the **Agency** recognizes that further, in fact continuing, improvement is necessary. Some of the universal treatment standards (such as cyanide) will need to be reassessed upon completion of **Agency** efforts to improve the analytic test method. HWIR will need to be integrated into the **Land Disposal** Restrictions. The **Agency** is also on a firm track of pursuing other avenues for continuous quality improvement in the program. Ideas and suggestions for improvements have, and will, come from: (1) Advance Notices of Proposed Rulemaking published by EPA in order to acquire as much information as possible from the public about treatment options; (2) communications between EPA and its customers representing **environmental** groups, generators, and treaters; and, (3) the LDR Program evaluation that is currently being conducted, which was initiated by a public roundtable discussion with a large number of customers. Consequently, the **Agency** will continue to take advantage of opportunities to streamline and improve the LDR program.

B. Universal Treatment Standards

The EPA is promulgating a single universal treatment standard (UTS) for each constituent in nonwastewater form and a single UTS for each constituent in wastewater form, regardless of the hazardous waste containing the constituent.

1. Identification of Wastes to Which Universal Treatment Standards Apply

The universal treatment standards apply to all listed and characteristic wastes for which treatment standards have been promulgated, with two exceptions. The first exception is the TC metal wastes (D004-D011). These metal wastes will be addressed in the future Phase IV LDR rule. (It should be noted that the mineral processing wastes which were formerly excluded from RCRA Subtitle C regulation under the Bevill Amendment are considered to be newly identified and

will also be addressed in Phase IV.) The second exception is those for which the treatment standard is a specified method of treatment. Most of these wastes must continue to be treated using those required technologies. For a small number of wastes with previously specified methods of treatment, the universal standards are an alternative, i.e. either use of the specified method or the universal standard will satisfy the LDR requirement. For those few situations where a mixture of wastes may be subject to different standards for the same constituent, the more stringent standard continues to apply. See Sec. 268.41(b).

Although the proposed rule excluded F024 from the UTS, EPA is applying UTS to F024 in today's rule. The existing standards, which were unique among standards set for F- or K-listed wastes, incorporated numerical treatment standards and also mandated a specific technology--incineration. The original F024 numerical standards for metals were also exceptionally low, reflecting the fact that F024 contains only low levels of metals.

However, comments from Dow Freeport indicated that the low F024 metal limit needlessly prevented them from co-treating wastes, a process that could save the facility $750,000/year, and that application of UTS solved this problem without diminishing the extent of treatment. EPA agrees, and is applying UTS to F024 in this rule while continuing to require incineration.

UTS apply to underlying hazardous constituents in characteristic wastes that are subject to LDRs. Apparent confusion in several comments leads the **Agency** to clarify that UTS will apply to the F039 waste code, the code for multi-source leachate. EPA used the F039 levels in the May 1993 Interim Final Rule as treatment standards for underlying hazardous constituents in certain decharacterized D001 and D002 wastes (58 FR 29885). Consequently, UTS levels and F039 standards are identical, with the exception of those few constituents regulated in F039 but not in UTS. This means that the Interim Final Rule requirement that underlying hazardous constituents in certain D001 and D002 wastes meet F039 levels is now one and the same thing with the requirement that underlying hazardous constituents meet UTS. (The term ``underlying hazardous constituents'' is defined at 268.2(i)).

2. Differences in Universal Treatment Standards and Previous Treatment Standards

In most cases (59%), UTS are the same as the previous treatment standards. Thirty three percent of the standards went up or down within a factor of ten of the original standard, while 8% underwent larger changes (3% of the total number of UTS becoming significantly more stringent). The following table lists the differences between the UTS and previous standards.

Table 3.--Comparison of Universal Treatment Standards to Previously Promulgated Treatment Standards

Parameter	Wastewater forms	Nonwastewater forms
Total Number of Constituent/Waste Code Combinations	938	924
Number of Combinations Unchanged by the		

Universal Treatment Standards.....	677	416
Number of Combinations for which the Universal Treatment Standards are Slightly Less Stringent\1\.....	138	209
Number of Combinations for which the Universal Treatment Standards are Slightly More Stringent\1\.....	76	199
Number of Combinations for which the Universal Treatment Standards are Significantly Less Stringent\2\.....	17	80
Number of Combinations for which the Universal Treatment Standards are Significantly More Stringent\2\.....	30	20

\1\The change is less than a factor of ten greater or less than the previously promulgated standard.
\2\The change is a factor of ten or more greater or less than the previously promulgated standard.

This numerical comparison somewhat exaggerates the degree of change. The changes in numerical values for many of the organic constituents reflect adjustments in the limits of analytic detection. Actual treatment will consequently likely continue to destroy or remove organics to nondetectable levels. It also is important to note that even in those cases where numerical limits have changed, the technology basis has not. Treatment technology used to comply with the previous standards should also be able to comply with UTS. Again, because most treatment technologies cannot be so precisely calibrated as to achieve, for instance, 3.5 ppm rather than 2.7 ppm, the likely result is that the same amount of treatment will occur. The main impact of UTS will be in simplifying compliance.

EPA also notes that very few of the commenters who complained about treatment standards being unachievable provided data to support their claims. Because most of the wastes subject to UTS are already subject to LDR treatment requirements, there should be data documenting treatment performance of these wastes that commenters could have submitted. EPA believes, therefore, that the absence of substantiating data cannot be attributable to commenters' inability to generate treatment data. (The situation differs from the state of affairs at the beginning of the **land disposal** restrictions program when there was little existing treatment data to draw upon, because many hazardous wastes were being disposed untreated, and there was little time to generate such data.)

For discussion of comparison between the UTS and previous standards for nonwastewater metal constituents, see section III.B.5.a. of this preamble.

3. Universal Treatment Standards for Organic Hazardous Constituents

EPA is today promulgating UTS for nonwastewater and wastewater forms of organic hazardous constituents, as found in the two tables in this section.

a. Analyte Combinations

Motivated by concern for analytical feasibility, EPA proposed that several groups or pairs of analytically similar organic compounds be regulated as the sum of their concentrations rather than as individual

analytes. Commenters supported these proposals as a simplification of analytical procedures, particularly the proposed total PCB standards for arochlors. Thus, today's rule regulates each of these groups or pairs collectively by setting wastewater and nonwastewater numbers representing their sums rather than individual concentrations. Specific analytes to be regulated with one wastewater and nonwastewater number are: PCBs (arochlors), xylenes, benzo(b)fluoranthene/ benzo(k)fluoranthene and diphenylamine/diphenylnitrosamine.

PCBs: Today's approach for PCBs is consistent with the regulations of other EPA offices, such as those promulgated pursuant to the Toxic Substance Control Act (TSCA). This approach will also eliminate analytical difficulties in quantifying each of the individual arochlors.

The ``Total PCB'' standards include seven arochlors that represent hundreds of isomers of polychlorinated biphenyls. Earlier LDR regulations addressed individual arochlors and required recognition of a gas chromatograph pattern which is often difficult to differentiate. Furthermore, regulation of individual arochlors may be difficult for wastes subject to degradation or treatment. EPA recommends SW-846 methods 8080 or 8081 (which use a gas chromatograph/electron capture detector) for measurement of total PCBs.

Xylenes: Similarly, today's rule regulates the sum of several xylene isomer analytes in both wastewaters and nonwastewaters. The three xylenes included on the BDAT list of hazardous constituents are ortho-, meta-, and para-xylene. Meta- and para-isomers co-elute in gas chromatograph analysis. Two methods exist in SW-846 for the measurement of total xylenes: 8020 and 8240. Method 8020 detects xylenes using a photoionization detector and 8240 uses a mass spectrometer. Total xylenes concentration is determined from the addition of the ortho-xylene concentration and the meta-/para-xylene concentration.

Benzo(b)fluoranthene/Benzo(k)fluoranthene and Diphenylamine/ Diphenylnitrosamine: EPA is also regulating two pairs of analytically problematic constituents, benzo(b)fluoranthene/ benzo(k)fluoranthene and diphenylamine/diphenylnitrosamine with a single wastewater and nonwastewater number for each pair.

b. Organics--Nonwastewaters

i. The Universal Treatment Standards Promulgated in Today's Rule

EPA is promulgating UTS for organics in nonwastewaters as proposed with the exception of the standards for m- and p-cresols. These are the only organic constituents for which commenters provided data supporting changes to the proposed UTS. Although organic nonwastewater UTS differ in some cases from the previously promulgated standards, the same technology basis, combustion, can meet the limits. In the previous standards as well as the UTS, the organic standards are based on a detection level in a combustion residue (adjusted upward by a variability factor accounting for analytic and process variability). Differences between UTS and previous standards reflect a more consistent assessment of achievable detection levels for various constituents in combustion residues, and continue to be achievable using BDAT, combustion. Because the essential technical issue at the heart of these adjustments is the value of the detection limit, most of these changes reflect analytical artifacts rather than absolute differences in the quantities of toxics available for release following **land disposal**.

ii. Modifications to Universal Treatment Standards Made in Response to Comments

A petroleum refiner involved in building a biological treatment system submitted data on organic nonwastewaters, and indicated their concern about the lower treatment standards for certain organic constituents that were proposed as UTS. The **Agency** evaluated the commenter's data and found, in some cases, the commenter was requesting that UTS levels be set at levels higher than the maximum levels in their untreated wastes. Furthermore, the commenter's data did not represent proper monitoring. The **Agency** was able to determine from their data, however, that one limit, the proposed m- and p-cresol limit, should be raised from 3.2 mg/kg to 5.6 mg/kg. This adjustment is based on other factors described below.

The proposed UTS for m- and p-cresol was 3.2 mg/kg, which differed from the proposed UTS for o-cresol, which was 5.6 mg/kg. Today's rule promulgates 5.6 mg/kg for both o-cresol and m- and p-cresol. The proposed limits for cresols were based on a detection limit of 2 mg/kg for o-cresol and 1 mg/kg for m- and p-cresol from an incinerator ash study used to develop nonwastewater standards in the Third Third rulemaking. The differences in detection limits occurred because EPA used different treatment tests to set the limits for o- versus m- and p-cresol. Examination of the same test runs revealed that where o-cresol had a detection level of 2 mg/kg, the detection level for m- and p-cresol was also 2 mg/kg. In addition, where the detection level for m- and p-cresol was 1 mg/kg, the detection level for o-cresol was also 1 mg/kg. Upon further review of other data, the **Agency** observed that within a test, o-cresol and m- and p-cresols had the same detection levels. The numbers for o-cresol and m- plus p-cresol promulgated in today's rule were calculated with the same detection limit, as justified by the data review, and the same recovery factor. The resulting identical treatment standards reflect the fact that incineration treats both of these isomer groups to the same level, within the existing analytical constraints.

iii. Use of Alternative Treatment Technologies to Combustion

In establishing numerical treatment standards, the **Agency** allows the use of any technology (other than impermissible dilution) to comply with the limits. Some previous standards, namely those for petroleum refining wastes, were based on combustion as well as thermal desorption and solvent extraction. Under UTS, organic nonwastewater standards are based on and achievable by combustion. As for other technologies, EPA assessed whether the changes in limits disrupted commitments made to use these other technologies. With regard to thermal desorption, EPA examined comments on the proposed levels by three 'vendors of thermal desorption units (Seaview Thermal Systems (STS), Separation and Recovery Systems, Inc. (SRS), and Ecova (formerly Waste Tech Services)), BDAT Background Development Documents for treatment standards applicable to petroleum wastes, the Marathon delisting petition, and other available literature.

These data demonstrate the achievability of UTS by thermal desorption for petroleum refining wastes. This was an expected result, given the comments on the Phase I LDR rule which addressed F037 and F038 petroleum refining wastes. In these comments, a thermal desorption company called for limits lower than today's UTS limits (these data

reflected lower detection levels, not necessarily better treatment than today's UTS). Also important in the use of thermal desorption are the operating conditions: raising the temperature, and/or the detention time increases the amount of hazardous organic constituents desorbed.

As for solvent extraction, the data used for development of the K048-K052 treatment standards achieved UTS levels for about half of the demonstration runs. Operating conditions, such as solvent selection, solvent to waste ratios, detention time, and number of treatment passes significantly affect treatment results, and the **agency** believes these parameters can be adjusted to comply with the UTS. There may, however, be other factors which result in this technology not being selected, and based on information available to the **Agency**, no petroleum refining facilities are utilizing solvent extraction.

EPA requested comments on the achievability of the proposed UTS for petroleum refining wastes when treated via noncombustion technologies. (See 58 FR 48106-48107.) EPA also requested comments on whether the industry has invested in non-combustion technologies, including those designated as BDAT in previous rules that cannot meet the UTS. In particular, EPA requested information on the type of treatment, performance data, and an explanation of why existing treatment could not be adjusted and operated more efficiently to comply with the UTS. EPA also pointed out it was willing to revise the proposed UTS, if data indicated that appropriate noncombustion technologies could achieve slightly higher levels than those proposed for UTS.

Only one commenter, Valero, Inc., submitted comments with regard to a contractual agreement for the construction of a full scale bioslurry reactor and data from a bench scale treatability study. None of the other petroleum refining commenters indicated they had invested in noncombustion technologies. Valero, Inc., and two remediation companies, Retec Technologies and OHM Corporation, submitted data on biotreatment of organic constituents. They reported treatment efficiencies from 40 to 60 percent for some PNAs and questioned whether the proposed treatment standards can be routinely achieved by biotreatment technologies. EPA does not generally consider such treatment efficiencies adequate for organic constituents. As indicated previously, facilities can use any technology other than impermissible dilution to comply with the treatment standards. If design and operating conditions can be adjusted to meet the limits, this could be full compliance. If not, the technology may still be appropriate for remediation wastes, for which standards are currently being revised in the development of HWIR.

Universal Treatment Standards for Organic Hazardous Constituents

Regulated constituent--common name	CAS\1\ No.	Nonwastewater standard; concentration in mg/kg\2\ unless noted as ``mg/l

TCLP''

Acenaphthylene	208-96-8	3.4
Acenaphthene	83-32-9	3.4
Acetone	67-64-1	160
Acetonitrile	75-05-8	1.8
Acetophenone	96-86-2	9.7
2-Acetylaminofluorene	53-96-3	140
Acrolein	107-02-8	NA
Acrylamide	79-06-1	23
Acrylonitrile	107-13-1	84
Aldrin	309-00-2	0.066
4-Aminobiphenyl	92-67-1	NA
Aniline	62-53-3	14
Anthracene	120-12-7	3.4
Aramite	140-57-8	NA
alpha-BHC	319-84-6	0.066
beta-BHC	319-85-7	0.066
delta-BHC	319-86-8	0.066
gamma-BHC	58-89-9	0.066
Benzene	71-43-2	10
Benz(a)anthracene	56-55-3	3.4
Benzal chloride	98-87-3	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	6.8

Benzo(g,h,i)perylene.....
.. 191-24-2 1.8
Benzo(a)pyrene.....
.. 50-32-8 3.4
Bromodichloromethane.....
.. 75-27-4 15
Methyl bromide
(Bromomethane).....
74-83-9 15
4-Bromophenyl phenyl
ether..... 101-55-3
15
n-Butyl
alcohol.....
71-36-3 2.6
Butyl benzyl
phthalate.....
85-68-7 28
2-sec-Butyl-4,6-dinitrophenol
(Dinoseb)..... 88-85-7
2.5
Carbon
disulfide.....
75-15-0 (\3\)
Carbon
tetrachloride.....
56-23-5 6.0
Chlordane (alpha and gamma
isomers)..... 57-74-9
0.26
p-
Chloroaniline.....
106-47-8 16
Chlorobenzene.....
.. 108-90-7 6.0
Chlorobenzilate.....
.. 510-15-6 NA
2-Chloro-1,3-
butadiene.....
126-99-8 0.28
Chlorodibromomethane.....
.. 124-48-1 15
Chloroethane.....
.. 75-00-3 6.0
bis(2-
Chloroethoxy)methane.....
111-91-1 7.2
bis(2-
Chloroethyl)ether.....
111-44-4 6.0
Chloroform.....
.. 67-66-3 6.0
bis(2-
Chloroisopropyl)ether.....
108-60-1 7.2

p-Chloro-m-
cresol.....
59-50-7 14
2-Chloroethyl vinyl
ether..... 110-75-
8 NA
Chloromethane (Methyl
chloride..... 74-87-3
30
2-
Chloronaphthalene.....
91-8-7 5.6
2-
Chlorophenol.....
95-57-8 5.7
3-
Chloropropylene.....
107-05-1 30
Chrysene.....
.. 218-01-9 3.4
o-
Cresol.....
95-48-7 5.6
m-Cresol (difficult to distinguish from p-
cresol)..... 108-39-4 5.6
p-Cresol (difficult to distinguish from m-
cresol)..... 106-44-5 5.6
Cyclohexanone.....
.. 108-94-1 (\4\)
1,2-Dibromo-3-
chloropropane.....
96-12-8 15
Ethylene dibromide (1,2-
Dibromoethane)..... 106-93-4
15
Dibromomethane.....
.. 74-95-3 15
2,4-D (2,4-Dichlorophenoxyacetic
acid)..... 94-75-7
10
o,p'-
DDD.....
53-19-0 0.087
p,p'-
DDD.....
72-54-8 0.087
o,p'-
DDE.....
3424-82-6 0.087
p,p'-
DDE.....
72-55-9 0.087
o,p'-
DDT.....
789-02-6 0.087

p,p'-
DDT.....
50-29-3 0.087
Dibenz (a,h)
anthracene.....
53-70-3 8.2
Dibenz (a,e)
pyrene.....
192-65-4 NA
m-
Dichlorobenzene.....
541-73-1 6.0
o-
Dichlorobenzene.....
95-50-1 6.0
p-
Dichlorobenzene.....
106-46-7 6.0
Dichlorodifluoromethane.....
.. 75-71-8 7.2
1,1-
Dichloroethane.....
75-34-3 6.0
1,2-
Dichloroethane.....
107-06-2 6.0
1,1-
Dichloroethylene.....
75-35-4 6.0
trans-1,2-
Dichloroethylene.....
156-60-5 30
2,4-
Dichlorophenol.....
120-83-2 14
2,6-
Dichlorophenol.....
87-65-0 14
1,2-
Dichloropropane.....
78-87-5 18
cis-1,3-
Dichloropropylene.....
10061-01-5 18
trans-1,3-
Dichloropropylene.....
10061-02-6 18
Dieldrin.....
.. 60-57-1 0.13
Diethyl
phthalate.....
84-66-2 28
2-4-Dimethyl
phenol.....
105-67-9 14

Dimethyl
phthalate.....
131-11-3 28
Di-n-butyl
phthalate.....
84-74-2 28
1,4-
Dinitrobenzene.....
100-25-4 2.3
4,6-Dinitro-o-
cresol.....
534-52-1 160
2,4-
Dinitrophenol.....
51-28-5 160
2,4-
Dinitrotoluene.....
121-14-2 140
2,6-
Dinitrotoluene.....
606-20-2 28
Di-n-octyl
phthalate.....
117-84-0 28
p-
Dimethylaminoazobenzene.....
60-11-7 NA
Di-n-
propylnitrosamine.....
621-64-7 14
1,4-
Dioxane.....
123-91-1 170
Diphenylamine (difficult to distinguish from
diphenylnitrosamine)..... 122-39-4 13
Diphenylnitrosamine (difficult to distinguish from
diphenylamine)..... 86-30-6 13
1,2-
Diphenylhydrazine.....
122-66-7 NA
Disulfoton.....
.. 298-04-4 6.2
Endosulfan
I.....
939-98-8 0.066
Endosulfan
II.....
33213-6-5 0.13
Endosulfan
sulfate.....
1-31-07-8 0.13
Endrin.....
.. 72-20-8 0.13
Endrin
aldehyde.....
7421-93-4 0.13

Ethyl
acetate.....
141-78-6 33
Ethyl cyanide
(Propanenitrile).....
107-12-0 360
Ethyl
benzene.....
100-41-4 10
Ethyl
ether.....
60-29-7 160
bis (2-Ethylhexyl)
phthalate..... 117-
81-7 28
Ethyl
methacrylate.....
97-63-2 160
Ethylene
oxide.....
75-21-8 NA
Famphur.....
.. 52-85-7 15
Fluoranthene.....
.. 206-44-0 3.4
Fluorene.....
.. 86-73-7 3.4
Heptachlor.....
.. 76-44-8 0.066
Heptachlor
epoxide.....
1024-57-3 0.066
Hexachlorobenzene.....
.. 118-74-1 10
Hexachlorobutadiene.....
.. 87-68-3 5.6
Hexachlorocyclopentadiene.....
.. 77-47-4 2.4
HxCDDs (All Hexachlorodibenzo-p-
dioxins)..... NA
0.001
HxCDFs (All
Hexachlorodibenzofurans).....
NA 0.001
Hexachloroethane.....
.. 67-72-1 30
Hexachloropropylene.....
.. 1888-71-7 30
Indeno(1,2,3-
c,d)pyrene.....
193-39-5 3.4
Iodomethane.....
.. 74-88-4 65
Isobutyl
alcohol.....
78-83-1 170

Isodrin.....
.. 465-73-6 0.066
Isosafrole.....
.. 120-58-1 2.6
Kepone.....
.. 143-50-8 0.13
Methacrylonitrile.....
.. 126-98-7 84
Methanol.....
.. 67-56-1 (\5\)
Methapyrilene.....
.. 91-80-5 1.5
Methoxychlor.....
.. 72-43-5 0.18
3-
Methylcholanthrene.....
56-49-5 15
4,4-Methylene bis(2-
chloroaniline)..... 101-14-
4 30
Methylene
chloride.....
75-09-2 30
Methyl ethyl
ketone.....
78-93-3 36
Methyl isobutyl
ketone.....
108-10-1 33
Methyl
methacrylate.....
80-62-6 160
Methyl
methansulfonate.....
66-27-3 NA
Methyl
parathion.....
298-00-0 4.6
Naphthalene.....
.. 91-20-3 5.6
2-
Naphthylamine.....
91-59-8 NA
o-
Nitroaniline.....
88-74-4 14
p-
Nitroaniline.....
100-01-6 28
Nitrobenzene.....
.. 98-95-3 14
5-Nitro-o-
toluidine.....
99-55-8 28
o-
Nitrophenol.....
88-75-5 13

p-
Nitrophenol.....
100-02-7 29
N-
Nitrosodiethylamine.....
55-18-5 28
N-
Nitrosodimethylamine.....
62-75-9 2.3
N-Nitroso-di-n-
butylamine.....
924-16-3 17
N-
Nitrosomethylethylamine.....
10595-95-6 2.3
N-
Nitrosomorpholine.....
59-89-2 2.3
N-
Nitrosopiperidine.....
100-75-4 35
N-
Nitrosopyrrolidine.....
930-55-2 35
Parathion.....
.. 56-38-2 4.6
Total PCBs (sum of all PCB isomers, or all
Arochlors)..... 1336-36-3 10
Pentachlorobenzene.....
.. 608-93-5 10
PeCDDs (All Pentachlorodibenzo-p-
dioxins)..... NA
0.001
PeCDFs (All
Pentachlorodibenzofurans).....
NA 0.001
Pentachloroethane.....
.. 76-01-7 6.0
Pentachloronitrobenzene.....
.. 82-68-8 4.8
Pentachlorophenol.....
.. 87-86-5 7.4
Phenacetin.....
.. 62-44-2 16
Phenanthrene.....
.. 85-01-8 5.6
Phenol.....
.. 108-95-2 6.2
Phorate.....
.. 298-02-2 4.6
Phthalic
acid.....
100-21-0 28
Phthalic
anhydride.....
85-44-9 28

Pronamide.....
.. 23950-58-5 1.5
Pyrene.....
.. 129-00-0 8.2
Pyridine.....
.. 110-86-1 16
Safrole.....
.. 94-59-7 22
Silvex(2,4,5-
TP).....
93-72-1 7.9
2,4,5-T(2,4,5-Trichlorophenoxyacetic
acid)..... 93-76-5
7.9
1,2,4,5-
Tetrachlorobenzene.....
95-94-3 14
TCDDs (All Tetrachlorodibenzo-p-
dioxins)..... NA
0.001
TCDFs (All
Tetrachlorodibenzofurans).....
NA 0.001
1,1,1,2-
Tetrachloroethane.....
630-20-6 6.0
1,1,2,2-
Tetrachloroethane.....
79-34-6 6.0
Tetrachloroethylene.....
.. 127-18-4 6.0
2,3,4,6-
Tetrachlorophenol.....
58-90-2 7.4
Toluene.....
.. 108-88-3 10
Toxaphene.....
.. 8001-35-2 2.6
Bormoform
(Tribromomethane).....
75-25-2 15
1,2,4-
Trichlorobenzene.....
120-82-1 19
1,1,1-
Trichloroethane.....
71-55-6 6.0
1,1,2-
Trichloroethane.....
79-00-5 6.0
Trichloroethylene.....
.. 79-01-6 6.0
Trichloromonofluoromethane.....
.. 75-69-4 30
2,4,5-
Trichlorophenol.....
95-95-4 7.4

2,4,6-
Trichlorophenol.....
88-06-2 7.4
1,2,3-
Trichloropropane.....
96-18-4 30
1,1,2-Trichloro-1,2,2,-
trifluoroethane..... 76-13-1
30
tris-(2,3-Dibromopropyl)
phosphate..... 126-72-7
0.10
Vinyl
chloride.....
75-01-4 6.0
Xylenes-mixed isomers (sum of o-, m-, p-xylene
concentrations)..... 1330-20-7 30

\1\CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.
\2\All concentration standards for nonwastewaters are based on analysis of grab samples.
\3\4.8 mg/l TCLP.
\4\0.75 mg/l TCLP.
\5\0.75 mg/l TCLP.
Note: NA means not applicable.

c. Organics--Wastewaters

i. The Universal Treatment Standards Promulgated in Today's Rule

The set of wastewater UTS proposed in September 1993 was virtually identical to the F039 wastewater standards promulgated in the Third Third Rule. Applying UTS to F- and K- listed wastes changes organic constituent wastewater standards in a handful of codes (F024, K001, K011/13/14, K015, K040, K038, K036, K037, K060, K099, K103/104, and U051). Commenters raised specific concerns with three of the organic wastewater treatment standards, and EPA is revising the proposed standards for two of the three constituents: the wastewater standard proposed for carbon disulfide will change from 0.014 mg/l to 3.8 mg/l, and the proposed wastewater universal treatment standard for 1,4-dioxane has been withdrawn. Changes to the treatment standards for these two constituents is explained in the following section. The third constituent was acetonitrile. Monsanto, Dupont, Cytec and other acrylonitrile producers, together with the Chemical Manufacturing Association's Acrylonitrile Group, objected to EPA extending the UTS to acrylonitrile production wastes K011, K013 and K014. Their comments stated that the acetonitrile wastewater UTS was unachievably low in acrylonitrile wastes. The **Agency** is promulgating an acetonitrile UTS of 5.6 based on steam stripping performance data. This level also appears achievable by WAO (wet air oxidation) followed by PACT@ (a combination of powdered activated carbon treatment and activated sludge).

ii. Treatment Standard Modification Made in Response to Comments

Carbon Disulfide. In response to data submitted by the Chemical Manufacturer's Association's Carbon Disulfide Task Force, EPA is promulgating a treatment standard of 3.8 mg/l based on data submitted by several facilities which generate high concentrations of carbon disulfide in wastewaters. The proposed wastewater treatment standard (0.014 mg/l) was based on one data point for biological treatment. After receiving substantially more treatment data representative of more significant influent concentrations, EPA is promulgating a carbon disulfide wastewater number of 3.8 mg/l, based on the performance of activated sludge at one of the facilities generating carbon disulfide.

1,4-Dioxane. Eastman Chemical reported that serious analytical problems, namely wide variation in detection limits, precluded reliable and accurate quantification of 1,4-dioxane. After reviewing detection limit data, EPA decided to withdraw the wastewater treatment standard for 1,4-dioxane pending technical resolution in a later rule. This decision changes the treatment standard for U108 (1,4-dioxane) wastewaters. Formerly the wastewater treatment standard was 0.12 mg/l; today's rule promulgates a method of treatment as a standard for U108 wastewaters, namely wet air oxidation or chemical oxidation followed by carbon adsorption or incineration.

Universal Treatment Standards for Organics

Regulated constituent--Common name	CAS\1\ No.	Wastewater standard Concentration in mg/l\2\
Acenaphthylene	208-96-8	0.059
Acenaphthene	83-32-9	0.059
Acetone	67-64-1	0.28
Acetonitrile	75-05-8	5.6
Acetophenone	96-86-2	0.010
2-Acetylaminofluorene	53-96-3	0.059
Acrolein	107-02-8	0.29
Acrylamide	79-06-1	19
Acrylonitrile	107-13-1	0.24
Aldrin	309-00-2	0.021

4-Aminobiphenyl.....
92-67-1 0.13
Aniline.....
62-53-3 0.81
Anthracene.....
120-12-7 0.059
Aramite.....
140-57-8 0.36
alpha-BHC.....
319-84-6 0.00014
beta-BHC.....
319-85-7 0.00014
delta-BHC.....
319-86-8 0.023
gamma-BHC.....
58-89-9 0.0017
Benzene.....
71-43-2 0.14
Benz(a)anthracene.....
56-55-3 0.059
Benzal chloride.....
98-87-3 0.055
Benzo(b)fluoranthene (difficult to distinguish from
benzo(k)fluoranthene).....
205-99-2 0.11
Benzo(k)fluoranthene (difficult to distinguish from
benzo(b)fluoranthene).....
207-08-9 0.11
Benzo(g,h,i)perylene.....
191-24-2 0.0055
Benzo(a)pyrene.....
50-32-8 0.061
Bromodichloromethane.....
75-27-4 0.35
Methyl bromide (Bromomethane).....
74-83-9 0.11
4-Bromophenyl phenyl ether.....
101-55-3 0.055
n-Butyl alcohol.....
71-36-3 5.6
Butyl benzyl phthalate.....
85-68-7 0.017
2-sec-Butyl-4,6-dinitrophenol (Dinoseb).....
88-85-7 0.066
Carbon disulfide.....
75-15 03.8
Carbon tetrachloride.....
56-23-5 0.057
Chlordane (alpha and gamma isomers).....
57-74-9 0.0033
p-Chloroaniline.....
106-47-8 0.46
Chlorobenzene.....
108-90-7 0.057
Chlorobenzilate.....
510-15-6 0.10

2-Chloro-1,3-butadiene.....
126-99-8 0.057
Chlorodibromomethane.....
124-48-1 0.057
Chloroethane.....
75-00-3 0.27
bis(2-Chloroethoxy)methane.....
111-91-1 0.036
bis(2-Chloroethyl)ether.....
111-44-4 0.033
Chloroform.....
67-66-3 0.046
bis(2-Chloroisopropyl)ether.....
108-60-1 0.055
p-Chloro-m-cresol.....
59-50-7 0.018
2-Chloroethyl vinyl ether.....
110-75-8 0.062
Chloromethane (Methyl chloride).....
74-87-3 0.19
2-Chloronaphthalene.....
91-8-7 0.055
2-Chlorophenol.....
95-57-8 0.044
3-Chloropropylene.....
107-05-1 0.036
Chrysene.....
218-01-9 0.059
o-Cresol.....
95-48-7 0.11
m-Cresol (difficult to distinguish from p-cresol).....
108-39-4 0.77
p-Cresol (difficult to distinguish from m-cresol).....
106-44-5 0.77
Cyclohexanone.....
108-94-1 0.36
1,2-Dibromo-3-chloropropane.....
96-12-8 0.11
Ethylene dibromide (1,2-Dibromoethane).....
106-93-4 0.028
Dibromomethane.....
74-95-3 0.11
2,4-D (2,4-Dichlorophenoxyacetic acid).....
94-75-7 0.72
o,p'-DDD.....
53-19-0 0.023
p,p'-DDD.....
72-54-8 0.023
o,p'-DDE.....
3424-82-6 0.031
p,p'-DDE.....
72-55-9 0.031
o,p'-DDT.....
789-02-6 0.0039
p,p'-DDT.....
50-29-3 0.0039

Dibenz(a,h)anthracene.....
53-70-3 0.055
Dibenz(a,e)pyrene.....
192-65-4 0.061
m-Dichlorobenzene.....
541-73-1 0.036
o-Dichlorobenzene.....
95-50-1 0.088
p-Dichlorobenzene.....
106-46-7 0.090
Dichlorodifluoromethane.....
75-71-8 0.23
1,1-Dichloroethane.....
75-34-3 0.059
1,2-Dichloroethane.....
107-06-2 0.21
1,1-Dichloroethylene.....
75-35-4 0.025
trans-1,2-Dichloroethylene.....
156-60-5 0.054
2,4-Dichlorophenol.....
120-83-2 0.044
2,6-Dichlorophenol.....
87-65-0 0.044
1,2-Dichloropropane.....
78-87-5 0.85
cis-1,3-Dichloropropylene.....
10061-01-5 0.036
trans-1,3-Dichloropropylene.....
10061-02-6 0.036
Dieldrin.....
60-57-1 0.017
Diethyl phthalate.....
84-66-2 0.20
2-4-Dimethyl phenol.....
105-67-9 0.036
Dimethyl phthalate.....
131-11-3 0.047
Di-n-butyl phthalate.....
84-74-2 0.057
1,4-Dinitrobenzene.....
100-25-4 0.32
4,6-Dinitro-o-cresol.....
534-52-1 0.28
2,4-Dinitrophenol.....
51-28-5 0.12
2,4-Dinitrotoluene.....
121-14-2 0.32
2,6-Dinitrotoluene.....
606-20-2 0.55
Di-n-octyl phthalate.....
117-84-0 0.017
p-Dimethylaminoazobenzene.....
60-11-7 0.13
Di-n-propylnitrosamine.....
621-64-7 0.40

Diphenylamine (difficult to distinguish from diphenylnitrosamine).....
122-39-4 0.92
Diphenylnitrosamine (difficult to distinguish from diphenylamine).....
86-30-6 0.92
1,2-Diphenylhydrazine.....
122-66-7 0.087
Disulfoton.....
298-04-4 0.017
Endosulfan I.....
939-98-8 0.023
Endosulfan II.....
33213-6-5 0.029
Endosulfan sulfate.....
1-31-07-8 0.029
Endrin.....
72-20-8 0.0028
Endrin aldehyde.....
7421-93-4 0.025
Ethyl acetate.....
141-78-6 0.34
Ethyl cyanide (Propanenitrile).....
107-12-0 0.24
Ethyl benzene.....
100-41-4 0.057
Ethyl ether.....
60-29-7 0.12
bis(2-Ethylhexyl) phthalate.....
117-81-7 0.28
Ethyl methacrylate.....
97-63-2 0.14
Ethylene oxide.....
75-21-8 0.12
Famphur.....
52-85-7 0.017
Fluoranthene.....
206-44-0 0.068
Fluorene.....
86-73-7 0.059
Heptachlor.....
76-44-8 0.0012
Heptachlor epoxide.....
1024-57-3 0.016
Hexachlorobenzene.....
118-74-1 0.055
Hexachlorobutadiene.....
87-68-3 0.055
Hexachlorocyclopentadiene.....
77-47-4 0.057
HxCDDs (All Hexachlorodibenzo-p-dioxins).....
NA 0.000063
HxCDFs (All Hexachlorodibenzofurans).....
NA 0.000063
Hexachloroethane.....
67-72-1 0.055
Hexachloropropylene.....
1888-71-7 0.035

Indeno (1,2,3-c,d) pyrene.....
193-39-5 0.0055
Iodomethane.....
74-88-4 0.19
Isobutyl alcohol.....
78-83-1 5.6
Isodrin.....
465-73-6 0.021
Isosafrole.....
120-58-1 0.081
Kepone.....
143-50-8 0.0011
Methacrylonitrile.....
126-98-7 0.24
Methanol.....
67-56 15.6
Methapyrilene.....
91-80-5 0.081
Methoxychlor.....
72-43-5 0.25
3-Methylcholanthrene.....
56-49-5 0.0055
4,4-Methylene bis(2-chloroaniline).....
101-14-4 0.50
Methylene chloride.....
75-09-2 0.089
Methyl ethyl ketone.....
78-93-3 0.28
Methyl isobutyl ketone.....
108-10-1 0.14
Methyl methacrylate.....
80-62-6 0.14
Methyl methansulfonate.....
66-27-3 0.018
Methyl parathion.....
298-00-0 0.014
Naphthalene.....
91-20-3 0.059
2-Naphthylamine.....
91-59-8 0.52
o-Nitroaniline.....
88-74-4 0.27
p-Nitroaniline.....
100-01-6 0.028
Nitrobenzene.....
98-95-3 0.068
5-Nitro-o-toluidine.....
99-55-8 0.32
o-Nitrophenol.....
88-75-5 0.028
p-Nitrophenol.....
100-02-7 0.12
N-Nitrosodiethylamine.....
55-18-5 0.40
N-Nitrosodimethylamine.....
62-75-9 0.40

N-Nitroso-di-n-butylamine.....
924-16-3 0.40
N-Nitrosomethylethylamine.....
10595-95-6 0.40
N-Nitrosomorpholine.....
59-89-2 0.40
N-Nitrosopiperidine.....
100-75-4 0.013
N-Nitrosopyrrolidine.....
930-55-2 0.013
Parathion.....
56-38-2 0.014
Total PCBs (sum of all PCB isomers, or all Arochlors).....
1336-36-3 0.10
Pentachlorobenzene.....
608-93-5 0.055
PeCDDs (All Pentachlorodibenzo-p-dioxins).....
NA 0.000063
PeCDFs (All Pentachlorodibenzofurans).....
NA 0.000035
Pentachloroethane.....
76-01-7 0.055
Pentachloronitrobenzene.....
82-68-8 0.055
Pentachlorophenol.....
87-86-5 0.089
Phenacetin.....
62-44-2 0.081
Phenanthrene.....
85-01-8 0.059
Phenol.....
108-95-2 0.039
Phorate.....
298-02-2 0.021
Phthalic acid.....
100-21-0 0.055
Phthalic anhydride.....
85-44-9 0.055
Pronamide.....
23950-58-5 0.093
Pyrene.....
129-00-0 0.067
Pyridine.....
110-86-1 0.014
Safrole.....
94-59-7 0.081
Silvex (2,4,5-TP).....
93-72-1 0.72
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid).....
93-76-5 0.72
1,2,4,5-Tetrachlorobenzene.....
95-94-3 0.055
TCDDs (All Tetrachlorodibenzo-p-dioxins).....
NA 0.000063
TCDFs (All Tetrachlorodibenzofurans).....
NA 0.000063

1,1,1,2-Tetrachloroethane.....
630-20-6 0.057
1,1,2,2-Tetrachloroethane.....
79-34-6 0.057
Tetrachloroethylene.....
127-18-4 0.056
2,3,4,6-Tetrachlorophenol.....
58-90-2 0.030
Toluene.....
108-88-3 0.080
Toxaphene.....
8001-35-2 0.0095
Bromoform (Tribromomethane).....
75-25-2 0.63
1,2,4-Trichlorobenzene.....
120-82-1 0.055
1,1,1-Trichloroethane.....
71-55-6 0.054
1,1,2-Trichloroethane.....
79-00-5 0.054
Trichloroethylene.....
79-01-6 0.054
Trichloromonofluoromethane.....
75-69-4 0.020
2,4,5-Trichlorophenol.....
95-95-4 0.18
2,4,6-Trichlorophenol.....
88-06-2 0.035
1,2,3-Trichloropropane.....
96-18-4 0.85
1,1,2-Trichloro-1,2,2-trifluoroethane.....
76-13-1 0.057
tris-(2,3-Dibromopropyl) phosphate.....
126-72-7 0.11
Vinyl chloride.....
75-01-4 0.27
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)....
1330-20-7 0.32

\1\CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.
\2\Concentration standards for wastewaters are expressed in mg/l are based on analysis of composite samples.
Note: NA means not applicable.

5. Universal Treatment Standards for Metal Hazardous Constituents

EPA is promulgating UTS for both the nonwastewater and wastewater forms of each of the 14 BDAT list metal constituents. The standards are found in the table ``Universal Treatment Standards for Metal Constituents'' at the end of this preamble section. These UTS will replace the existing metal constituent treatment standards for all listed wastes, and will constitute applicable levels for underlying hazardous metal constituents in ignitable, corrosive and TC organic wastes. They do not apply to wastes exhibiting the toxicity

characteristic due to metal constituents, i.e., waste codes D004-D012, nor do they replace the treatment standards promulgated in the Third Third rule for EP metals. Wastecodes D004-D012 will be addressed in an upcoming rulemaking.

a. Nonwastewaters

The nonwastewater UTS for 12 of the 14 metal constituents are based on the performance of high temperature metal recovery (HTMR) or stabilization. The remaining two metals are arsenic for which the standard is based on vitrification, and mercury, which standard requires recovery by roasting or retorting for certain highly concentrated mercury wastes. As always, when the **Agency** develops concentration-based treatment standards, the use of other technologies to achieve those standards is allowed.

The following table presents a comparison of the previously promulgated standards with the UTS.

Comparison of UTS Nonwastewater TCLP Concentrations Versus Previous Standards for Metals

Previous standards being replaced	Final UTS NWW standards (TCLP)	Old level	Waste codes
Antimony	2.1	2.1	K061
		0.23	K021, F039
Arsenic	5.0	5.6	K031, K084, K101, K102, P010, P011, P036, P038, U136
		5.0	F039
		0.055	K061
Barium	7.6	52	F039, P013
		7.6	K061
Beryllium	0.014	0.014	K061
Cadmium	0.19	0.19	K061
		0.14	K069
		0.066	F006, F007, F008, F009, F011, F012, F039, K100
Chromium	0.86	5.2	F006, F007, F008, F009, F011, F012, F019, F039, K006 (hydrated), K061, K100
		1.7	K015, K048, K049, K050, K051, K052
		0.33	K061
		0.094	K002, K003, K004, K005, K006, K007, K008, K062, K086, U032
		0.073	K028
Lead	0.37	0.51	F006, F007, F008, F009, F011, F012, F039, K001,

			K087, K100, U051, U144, U145, U146, P110
	.....	0.37	K002, K003, K004, K005, K006, K007, K008, K061,
			K062, K086
	.....	0.24	K069
	.....	0.18	K046
	.....	0.021	K028
Mercury.....	0.20 for retort residues	0.20	K106, U151, P065, P092 (for RMERC residues)
	0.025 for other residues.		
	.....	0.025	K071, K106, U151, P065, P092 (low mercury wastes),
			F039
	.....	0.009	K061
Nickel.....	5.0.....	5.0	K061
	.....	0.32	F006, F007, F008, F009, F011, F012, F039, K115, K061
			(stabilization)
	.....	0.2	K015, K048, K049, K050, K051, K052
	.....	0.088	K028, K083
Selenium.....	0.16.....	5.7	F039, P103, P114, U204, U205
	.....	0.16	K061
Silver.....	0.30.....	0.30	K061
	.....	0.072	F006, F007, F008, F009, F011, F012, P099, P104
Thallium.....	0.078.....	0.078	K061
Vanadium.....	0.23.....	0.23	K061
Zinc.....	5.3.....	5.3	K061

Note: Constituents are actually regulated only if the treatment standard specifically requires it (for listed wastes, or constituents are reasonably expected to be present (underlying hazardous constituents in characteristic wastes).

Commenters objected to the proposed levels and provided treatment data for only two metal limits, chromium and mercury. The **Agency** revised the proposed treatment standards for chromium and mercury as described later in this section. For the other UTS metal constituents the **Agency** promulgated standards as proposed.

For four of these metals beryllium, thallium, vanadium and zinc, the previous standards limited the metal at one level, which was proposed and promulgated for UTS.

For four other metals, antimony, cadmium, nickel and silver, the **Agency** proposed and promulgated the UTS level at the highest of the previous standards. This occurred based on the best data for the most difficult to treat wastes. Commenters did not submit new data supporting lower limits for these constituents. While the limits for some waste codes are raised, EPA considered the following factors:

(1) A broader assessment of the treatment data;

(2) Some of the low/previous metal standards simply reflected low levels in the untreated wastes;

(3) Regulation of other metals for a waste code, namely those that are present in significantly high concentrations, will control design and operations of the treatment technology.

For the remaining four metals, arsenic, barium, lead and selenium, the **Agency** did not propose or promulgate the UTS at the highest previous standard. Commenters did not submit data on these metals. The justification for rejecting lower levels are the same as those presented for antimony, cadmium, nickel and silver in the preceeding discussion. For these metals, EPA did not choose the highest previous standard; rather, the standard for the most difficult to treat waste was selected and it achieved a lower standard than the highest previous standard.

In addition to the above consideration, the **Agency** considered matrix effects. In setting the nonwastewater metal limits, EPA has examined the most difficult to treat wastes; therefore, if a matrix relationship exists, other wastes should more easily meet the limits. If there exists a waste that can not meet the limits, the **Agency** has a treatability variance process to address those instances. It appears that HTMR is matrix independent, consistently achieving the same level of treatment performance as measured in the residuals, regardless of the influent matrix composition. With regard to matrix effects on stabilization, adjustments to the type and quantity of stabilizing agents can greatly compensate for matrix effects.

The UTS standard for chromium (Total) was proposed to be 0.33 mg/l in the TCLP extract based upon the K061-HTMR treatment standard data. One commenter (Occidental Chemical), objected to the proposed limits and supplied stabilization data for chromium. They indicated through 85 data points that they could achieve a level of 0.58 mg/kg. The **Agency** evaluated treatability data from various sources, including Occidental Chemical and previously promulgated waste codes. These evaluations compared analyses of performance data between untreated and treated concentrations of metal waste. From this treatability data the **Agency** selected the most difficult to treat waste. It was determined that the waste criteria selected was submitted by Cyanokem for F006 during the promulgation of the Third Third rule (June 1, 1990). This waste was a composition of stripping liquids, plating operations, pelletizing operations, and clean out wastes from plating tanks. The data sets involving the most difficult to treat waste were used to calculate the limit of 0.86 mg/l TCLP. The other data sets, including those from the comments, generally achieved the 0.86 mg/l TCLP. The treatment results that did not meet the levels may be due to treatment being designed to only meet the characteristic levels. It is the **Agency**'s belief that with the use of a more effective stabilization process, a lower level could be achieved, as demonstrated by the fact that a more difficult to treat waste attained the level of 0.86 mg/l TCLP. Therefore, the **Agency** is promulgating the treatment standard of 0.86 mg/l TCLP.

EPA proposed UTS for low mercury subcategory nonwastewaters (containing less than 260 mg/kg total mercury) at 0.009 mg/l TCLP. Many commenters expressed concern over this standard. EPA has reconsidered the proposed UTS for mercury and is promulgating standards as follows: 0.200 mg/l TCLP for low subcategory retort residues, and 0.025 mg/l TCLP for other low subcategory nonwastewaters. (The existing treatment standard for high subcategory mercury nonwastewaters (concentration greater than 260 mg/kg) is already RMERC, i.e., recovery of mercury by retorting or roasting. This treatment standard is unaffected by today's rule.) Comments and EPA's responses are summarized below.

Several commenters expressed the belief that the current treatment

standards for K106, D009, and K071 wastes should remain in effect. These commenters submitted data from the analysis of retorted mercury waste to support the claim that the proposed UTS for mercury is not achievable by retorting, the recognized BDAT for K106 and D009 wastes. These data consisted of total and TCLP analyses of 109 residue samples from retorted K106 and D009 wastes. Although 23 of these samples contained greater than 260 mg/kg total mercury and would therefore require further retorting, of the remaining 86 samples, 18 contained greater than 0.009 mg/l mercury by TCLP, the proposed UTS for mercury nonwastewaters. All 86 samples contained less than 0.15 mg/l mercury by TCLP. These data support the commenters' position that the proposed UTS for mercury is not achievable by properly operated BDAT treatment technology (e.g., RMERC).

Further examination of available data has convinced the **Agency** that the proposed nonwastewater standard was too low. The basis for the proposed UTS for metal nonwastewaters, which was data from the treatment of K061 by high temperature metal recovery (HTMR), is not appropriate for mercury wastes. K061 waste does not typically contain large quantities of mercury and HTMR facilities do not accept wastes containing high concentrations of mercury. EPA has therefore decided not to promulgate the proposed nonwastewater standards, and instead to apply the existing treatment standards for K071, K106, P065, P092, and U151 as the UTS for mercury nonwastewaters. This is appropriate, since mercury is the most significant constituent in these wastes, and BDAT for these wastes is particularly directed to treating mercury. The **Agency** continues to believe that the revised limits for mercury and 12 other metal constituents in K061 provide adequate assurance that BDAT will occur for K061. Thus, the universal treatment standards for low subcategory mercury wastes will be 0.20 mg/l mercury by TCLP for retort residue nonwastewaters, and 0.025 mg/l mercury by TCLP for other low subcategory nonwastewaters.

The following table is a compilation of the final metal universal standards for nonwastewaters.

Universal Treatment Standards for Metal\1\ Hazardous Constituents
[Nonwastewaters]

Regulated constituent	Maximum for any single grab sample TCLP (mg/l)
Antimony	2.1
Arsenic	5.0
Barium	7.6
Beryllium	0.014
Cadmium	0.19
Chromium (Total)	0.86
Lead	0.37
Mercury--retort residues	0.20
Mercury--not retort residues	0.025
Nickel	5.0
Selenium	0.16

Silver	0.30
Thallium	0.078
Vanadium	0.23
Zinc	5.3

\1\Treatment standards for cyanide wastes are discussed in the next preamble section.

b. Wastewaters

The metal UTS for wastewaters are based on chemical precipitation as BDAT. Depending on the initial concentration of metal constituents in the wastewater, operating conditions such as retention time, flocculating agents, reagent concentrations such as iron to affect solubility of other metals, and mixing may need to be adjusted to comply with the standards.

The following table presents the UTS metal wastewater limits, and the previous limits. Changes to the proposed metal standards occurred in two areas: use of Office of Water Metal Finishing limits, and an adjustment of the proposed vanadium limit. These changes are explained following the table.

Comparison of UTS Wastewater Concentrations Versus Previous Standards for Metals

	Final	Previous standards	
	UTS	Old level	Waste codes
Antimony	1.9	.....	K061
		0.60	K021
		1.9	F039
Arsenic	1.4	0.79	K031, K084, K101, K102, P010, P011, P012, P036, P038, U136
		1.4	F039
			K061
Barium	1.2	1.2	F039, P013
			K061
Beryllium	0.82	0.82	F039, K061
Cadmium	0.69	6.4	K028
		0.20	F039
		0.24	K101, K102
		1.6	F006, K061, K069, K100
Chromium	2.77	0.32	F006, F007, F008, F009, F011, F012, F019, K015, K061, K062, K086, K100, U032
		0.2	F037, F038, K048, K049, K050, K051, K052
		0.37	F039

		0.9	K002, K003, K004, K005, K006, K007, K008
		0.35	F024, K022, K028
Lead	0.69	0.040	F006, F007, F008, F009, F011, F012, K062, U144, U145, U146, P110
		3.4	K002, K003, K004, K005, K006, K007, K008
		0.17	K101, K102
		0.28	F039
		0.51	K061, K069, K100
		0.037	K001, F037, F038, K028, K046, K048, K049, K050, K051, K052, K086, K087, U051
Mercury	0.15	0.030	K071, K106, P065, P092, U151
		0.082	K101, K102
		0.15	F039
Nickel	3.98	0.55	F039
		0.44	F006, F007, F008, F009, F011, F012, K015, K061, K062, P074
		0.32	P073
		0.47	F024, K022, K028, K083, K115
Selenium	0.82	0.82	F039
		1.0	P103, P114, U204, U205
Silver	0.43	0.29	F039, P099, P104
Thallium	1.4	0.14	P113, P114, P115, U214, U215, U216, U217
		1.4	F039
Vanadium	4.3	0.042	F039
		28	P119, P120
Zinc	2.61	1.0	F039

In the proposal, EPA solicited comments on changing the limits for cadmium, chromium, lead, nickel, silver, and zinc to those used in the Office of Water's Metal Finishing Effluent Guidelines. These standards represented a more comprehensive database, addressed many more facilities, and represented the most difficult to treat waste. Although none of the commenters submitted data, they (commenters) supported the use of the Metal Finishing standards as the UTS wastewater treatment numbers. We are adopting the metal wastewater limits used for the Effluent Guidelines for the Metal Finishers Point Source category for cadmium, chromium, lead, nickel, silver and zinc for the reasons outlined above.

The **Agency** received comments, but no data, that the proposed vanadium limit of 0.042 was unachievably low. At the proposed level, vanadium would be the most stringent regulated metal. With little data supporting the proposed level, the **Agency** tried to follow up with commenters and other sources to obtain data. Wastewater with significant vanadium is rare, and EPA's efforts yielded limited data supporting a level of 4.3 mg/l. This level is within the range of other metal limits, and is achievable, based on the data availability. While the **Agency** would have preferred having more data for vanadium, the UTS is set at 4.3 mg/l. If the few facilities that have significant vanadium wastewaters can not meet this limit, EPA's treatability variance process is available. Also, the **Agency** would be willing to reassess this limit in a future rule, if data are submitted which

supports a change in this standard.

For all other metal wastewater UTS--antimony, arsenic, barium, beryllium, mercury, selenium and thallium--EPA is promulgating limits as proposed. The data used for UTS reflect, for each of these metals, the best data available. With the possibility of more wastewaters being treated to comply with LDR standards--particularly characteristic wastewaters that heretofore have been decharacterized and whose underlying hazardous constituents may not have been treated, EPA has made a determined effort in this rulemaking to base treatment standards on the best data available, which data reflects a wide variety of wastewaters. Although the UTS are in some cases higher than existing limits, EPA believes that these existing lower limits, in many cases, reflected low levels of metals in untreated wastes. In addition, wastewater standards, to date, have not had direct effect on many wastes, because most hazardous wastewaters are either treated in tanks and discharged, managed in Sec. 3005(j)(ii) impoundments, injected into Class I hazardous deep wells which have received no-migration variances, or decharacterized, and so are not subject to these lower standards.

The following table is a compilation of final metal universal treatment standards for wastewaters.

Universal Treatment Standards for Metal\1\ Hazardous Constituents
[Wastewaters]

Regulated constituent	Maximum for any single grab sample (mg/l)
Antimony	1.9
Arsenic	1.4
Barium	1.2
Beryllium	0.82
Cadmium	0.69
Chromium (Total)	2.77
Lead	0.69
Mercury	0.15
Nickel	3.98
Selenium	0.82
Silver	0.43
Thallium	1.4
Vanadium	4.3
Zinc	2.61

\1\Treatment standards for cyanide wastes are discussed in the next preamble section.

6. Universal Treatment Standards for Cyanide Wastes

For the nonwastewater forms of cyanide wastes, EPA is promulgating the UTS as proposed: 590 mg/kg (total cyanide) and 30 mg/kg (amenable cyanide). For wastewaters, EPA is promulgating the UTS: 1.2 mg/l (total cyanide) and 0.86 mg/l (amenable cyanide). These wastewater standards differ from those that were proposed (see section b of the cyanide UTS discussion below). The cyanide wastewater and nonwastewater UTS are based on the treatment of wastewaters via alkaline chlorination.

EPA is also codifying in 40 CFR 268.40 that compliance with the cyanide nonwastewater UTS requires the use of EPA SW-846, Test Methods 9010 and 9012, along with a specified sample size of 10 grams, and a distillation time of 75 minutes. Most commenters, in particular those from the hazardous waste treatment industry, welcomed and supported this part of EPA's proposal. These kind of provisions eliminate variabilities that can result from the analyses of different sample sizes and distillation times. A detailed discussion of these treatment standards follows.

a. Cyanide Nonwastewaters

EPA proposed three options for cyanide in nonwastewater forms (a standard based on total and amenable cyanide concentrations, a standard based on TCLP concentrations, and a standard that specifies treatment methods) at 58 FR 48104. EPA is promulgating the first option.

EPA is discussing in this preamble only the major comments on the first option. Please see the Response to Comments Document in the docket for this rule for EPA's responses to all the comments received on the proposed three options.

EPA requested comments on its rationale for setting a common cyanide UTS for all nonwastewater forms of cyanide. Two primary issues were emphasized in the proposal: (1) the establishment of a cyanide UTS that is less stringent for wastes that contain little to no cyanide; and, (2) standardized sample size and distillation time for compliance monitoring.

EPA believes that by basing a universal treatment on the cyanide matrix that is most difficult to treat, the universal treatment standard will indeed be uniformly achievable. EPA has determined that electroplating wastes with high concentrations of iron represent the most difficult to treat of all the cyanide wastes. The available performance data for treating electroplating wastes support the establishment of a UTS of 590 mg/kg (total cyanide) and 30 mg/kg (amenable cyanide).

EPA noted that although other cyanide wastes were required to meet lower treatment standards, the establishment of this higher UTS was not likely to discourage effective treatment of these other wastes. Examples of the other wastes of concern include multi-source leachate, pigments, petroleum, coking, ink solvents and organo-nitrogen wastes. These wastes generally have very little cyanide in the untreated waste, have cyanide along with organic constituents which are routinely incinerated, or have cyanide in a free form which is easier to treat by conventional treatment methods (alkaline chlorination). Because these wastes are routinely treated by incineration or a cyanide destruction technology, EPA believes further subcategorization of the cyanide UTS standard is not warranted at this time. (Put another way, the **Agency**

does not believe as a practical matter that more cyanide will be **land** disposed as a result of UTS, and therefore that the interest in simplified standards warrants against further subcategorization of cyanide wastes.)

The majority of the commenters supported EPA's proposed rationale for developing a cyanide UTS and believe EPA's proposed approach is appropriate for setting UTS. Two commenters, however, urged EPA to withdraw the proposed UTS and to promulgate instead a lower cyanide UTS, as described below.

The first commenter believes that EPA should set two categories of cyanide UTS: (1) organic, which would include all those cyanide wastes with regulated organics; and, (2) inorganic, which include all cyanide wastes with regulated metals. For organics, they suggested a UTS of 30 mg/kg (total cyanide) and 1.8 mg/kg (amenable cyanide). For inorganics, the commenter suggested a UTS of 400 mg/kg (total cyanide) based on rejecting three data points used to calculate the 590 mg/kg limits.

The other commenter believes that it is inappropriate for EPA to raise the standards for all nonwastewater forms of cyanide wastes. They said that existing treatment technologies can treat cyanide wastes to levels below the proposed UTS, and they asked EPA to promulgate lower cyanide levels such as those promulgated for nonwastewater forms of F011 and F012.

EPA is not persuaded by these comments. First, a separate lower treatment standard for cyanide in organic wastes is currently unnecessary because combustion of these wastes to comply with organic treatment standards effectively destroys cyanides. Second, EPA believes that the three data points queried in CyanoKem's comment are in fact representative. None of these three data points fail a statistical Outlier test. Furthermore, the description of the design and operating conditions make it appear that treatment was conducted properly. Third, the limit for F011 and F012 (which had a treatment standard for cyanide below the UTS) has not been previously subject to the 1 hour and 15 minute distillation time and 10 gram sample requirements, which can greatly influence results and are required conditions for the UTS.

CyanoKem's comment, in fact, amounts to a request that EPA reopen the technology basis for the cyanide standard, an issue not opened for public comment. The treatment standards for cyanide are based on performance of alkaline chlorination technology. 54 FR at 26610-611 (June 23, 1989). CyanoKem has upgraded that technology with certain proprietary modifications. 56 FR at 12355 (March 25, 1991). EPA has already indicated that this adapted technology is not, and need not serve as the basis for the treatment standard. Id.

In any case, EPA does not believe that this is an appropriate time to undertake major changes to the cyanide standards. This is because the cyanide analytic method, although improved by the changes in this rule which are the best available at the present time, continues to have shortcomings. EPA is working to develop a different analytic method. It may be that after the new method is developed, further investigation of cyanide standards will be warranted.

Universal Treatment Standards for Cyanide\1\
[Nonwastewaters]

	Maximum for any single

Regulated constituent	composite sample (mg/kg)
Cyanide (Total).....	590
Cyanide (Amenable).....	30

\1\Cyanide nonwastewaters are analyzed using SW-846 Method 9010 or 9012, sample size 10 grams, distillation time, one hour and 15 minutes.

b. Cyanide Wastewaters

EPA is promulgating 1.2 mg/l (total cyanide) and 0.86 mg/l (amenable cyanide) as UTS for wastewater forms of cyanide wastes. In the proposed rule, EPA pointed out that a total cyanide concentration of 1.9 mg/l, regardless of process waste type, is widely used in wastewater discharge regulations--namely those for the Metal Finishing Industry and the Organic Chemicals, Plastics and Synthetic Fibers (OCPSF) Industry; however, the concentration of 1.9 mg/l was a typographical error. The **Agency** intended to propose a concentration 1.2 mg/l of total cyanide. (The 1.2 mg/l level is supported by EPA's OCPSF regulations and the background information in the record to the proposed rule supporting the proposed total cyanide UTS applicable to cyanide wastewaters.) The majority of commenters from the pharmaceutical and waste treatment industry commented on the proposed UTS cyanide for wastewaters assuming a standard of 1.2 mg/l total cyanide level was proposed.

Commenters pointed out that the proposed level of 1.2 mg/l (total cyanide) is not always applied to OCPSF discharges. EPA has authorized permit writers or control authorities to exempt a source from OCPSF's total cyanide (discharge) limit, and to establish a Best Professional Judgement (``BPJ'') amenable cyanide limit. The BPJ limit must be based on a determination that the cyanide limits are not achievable due to elevated levels of non- amenable cyanide that result from the unavoidable complexing of cyanide at the process source (40 CFR 414.11(g), 414.91, and 414.101). As with the CWA regulations, EPA provides facilities with a RCRA treatability variance process in the 40 CFR 268.44 regulations that would allow a facility to achieve an alternate treatment standard (see discussion of treatability variance at section XII of this preamble). EPA believes that this provision provides a mechanism for establishing an alternative cyanide limit for OCPSF facilities in appropriate cases.

These commenters also reported that CWA regulations for the Pharmaceutical Industry specify cyanide limitations as high as 33.5 mg/l total cyanide. EPA looked into these concerns; in particular, whether the proposed standard of 1.2 mg/l can be achieved universally. Treatment performance data, however, were not submitted by the commenters. Contrary to the commenters' arguments, the literature and the performance data on cyanide treatment clearly show that cyanide wastewaters are treatable to 1.2 mg/l total cyanide. While the CWA cyanide limit is 33.5 mg/l for the pharmaceutical industry, that limit was established in 1983 and is currently being investigated for possible revision. Data were obtained from these ongoing efforts,

confirming that pharmaceutical wastes can achieve the 1.2 mg/l cyanide level.

Other commenters emphasized that because EPA's proposed universal wastewater standard of 1.2 mg/l total CN could not be routinely met by cyanide destruction technologies available at their site, EPA should only set a treatment level of 0.86 mg/l (amenable cyanide). Another commenter added that in the Third Third rule (see 55 FR 22550-22553, June 1, 1990), EPA already set a level of 0.86 mg/l for amenable cyanide in characteristic wastewaters which is routinely met by their modified wastewater treatment system. The proposed UTS treatment standard of 0.86 mg/l (amenable cyanide) is based on the treatment of complex-iron wastewaters from the electroplating industry by alkaline chlorination (a cyanide destruction technology, and BDAT). The commenter urged EPA to set this level as the sole cyanide UTS.

In the first place, the **Agency** views the issue of requiring treatment for both total and amenable CN to be settled in past rules, and did not intend to reopen it. See 54 FR at 26609 (June 23, 1989). If further response is deemed necessary, EPA remains unpersuaded by these arguments. Clean Water Act effluent limitations could technically be met by adding ferro-sulfate or other sulfate reagents to wastewaters. These chemical reagents do not destroy cyanides in the effluent wastewater but instead, they leave behind iron-cyanide complexes or thiocyanates. By requiring compliance for both amenable and total cyanide, facilities must pursue treatment practices that can effectively destroy cyanides. EPA is thus promulgating 1.2 mg/l (total cyanide) and 0.86 mg/l (amenable cyanide) as UTS for wastewater forms of cyanide wastes.

EPA had previously reserved the treatment standard for total cyanide in wastewater forms of D003 reactive cyanide wastes. In today's rule, EPA is applying the UTS of 1.2 mg/l to this waste. EPA sees no reason that the limit is not generally achievable, and commenters supplied no reasons.

Universal Treatment Standard for Cyanide
[Wastewaters]

Regulated constituent	Maximum for any single composite sample (mg/l)
Cyanide (Total)	1.2
Cyanide (Amenable)	0.86

C. Consolidation of Equivalent Technology-Specific Combustion Standards

Another improvement to the existing **Land Disposal** Restrictions program that is being made in today's rule is the simplification of two equivalent technology-specific combustion standards in: Table 1--Technology Codes and Description of Technology-Based Standards in 40

CFR 268.42. The **Agency** is consolidating the descriptions of INCIN (incineration) and FSUBS (fuel substitution), by combining them into one term, CMBST (combustion). The definition of CMBST, as stated in Sec. 268.42 Table 1, is: ``combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264 subpart O, and part 266, subpart H.'' (Because the Part 265 interim status standards for incinerators are largely nonsubstantive, EPA does not view facilities operating pursuant to these standards to be performing BDAT treatment. This is not true of boilers and industrial furnaces, where the interim status standards are nearly as stringent as those for permitted units.)

This definition includes a specific reference to boilers and industrial furnaces in order to clarify that combustion in these units is (and always has been) allowed as a means of complying with FSUBS. The **Agency** is also clarifying that any future regulations, such as potential emission limits on metals or halogenated organic content, established in part 264 subpart O, and part 266 subpart H, shall also apply automatically to the standard of CMBST (or INCIN) in part 268. The consolidation of INCIN with FSUBS to read CMBST does not represent any change to the promulgated standards and additional notice and comment was, therefore, not required.

All of the K-, U-, and P-listed wastes that have technology-specific standards contain chemicals that are very difficult to quantify in treatment residues. The chemicals representing the waste codes for which the **Agency** has promulgated CMBST as a standard are, for the most part, thermally labile and are expected to be destroyed relatively easily in any type of combustion unit. EPA originally set up the two separate standards of INCIN and FSUBS (Final Rule for Third Third Wastes, June 1, 1990), because the **Agency** did not have in place the operating requirements for boilers and industrial furnaces (i.e., the requirements for FSUBS). See 52 FR at 17021 (May 6, 1987). Because these requirements have been promulgated (56 FR 7134 (February 21, 1991), both sets of standards should assure equally efficient combustion of hazardous waste. For the same reason, there is no need to distinguish between the types of units that are allowed to handle each specific waste code. (EPA is, however, actively reviewing current regulations for combustion units to assure the rules' protectiveness, and may propose more stringent standards for such units. See EPA's Draft Combustion Strategy of May 18, 1993).

As a result of today's action the standards for the following waste codes are modified to read ``CMBST'':

(1) Two treatment subcategories of D001 wastes
(2) Six source-specific wastes listed in Sec. 261.32: K027, K039, K113, K114, K115, K116
(3) Seventeen wastes listed in Sec. 261.33(e): P001, P003, P005, P009, P040, P041, P043, P044, P062, P068, P081, P085, P088, P102, P105, P109, P112
(4) Forty-one wastes listed in Sec. 261.33(f): U008, U016, U023, U053, U055, U056, U057, U058, U064, U085, U086, U087, U089, U090, U094, U096, U098, U099, U103, U109, U113, U122, U123, U124, U125, U126, U133, U147, U154, U160, U166, U182, U186, U197, U201, U213, U221, U248, U328, U353, U359

Other technology-specific standards and/or numerical standards that have been promulgated for the above listed codes remain unchanged. In particular, the promulgated standards of CHRED and CHOXD (i.e.,

chemical reduction and chemical oxidation) remain unchanged as alternatives to CMBST for fourteen of the above U and P waste codes. These standards were established because the chemicals represented by these wastes hydrolyze relatively rapidly (i.e., react with water) and both of the technologies represented by these standards are typically performed under aqueous conditions. These waste codes include: P009, P068, P081, P105, P112, U023, U086, U096, U098, U099, U103, U109, U133, U160.

Today's rule does not affect the existing standards for waste codes where INCIN was specified, but FSUBS was not. For those waste codes, the standard remains identified as INCIN, rather than CMBST.

The **Agency** is further investigating potential modifications to the presentation in 40 CFR 268.40 of all of the technology-specific standards in order to simplify and clarify the promulgated treatment standards, and may propose additional changes in the future.

D. Incorporation of Newly Listed Wastes Into Lab Packs and Changes to Appendices

On June 1, 1990 (55 FR 22629), EPA promulgated alternative treatment standards under 40 CFR 268.42(c) for waste codes listed in 40 CFR 268 Appendix IV and V that are placed in lab packs. These alternative standards are legally constructed, in part, as ``specified methods of treatment'' because of physical difficulties in measuring compliance with numerical standards for these multi-coded waste forms (i.e., compliance is complicated by the fact that many lab packs are comprised of hundreds of small containers, each with different organic or organo-metallic chemicals in them, making it difficult to accurately sample treatment residues for those organics). In the January, 1991, correction notice and again in the May 30, 1991, Advance Notice of Proposed Rulemaking (56 FR 24453), the **Agency** requested comment on potential improvements to these alternative standards.

EPA's original intent in establishing two separate appendices was to distinguish between those lab packs containing organo-metallics (Appendix IV) and those containing only organics (Appendix V). As such, lab packs containing organo-metallics (Appendix IV) were expected to need stabilization after performing the specified method of treatment, INCIN (i.e., incineration), while Appendix V lab packs only needed to be incinerated. However, under 40 CFR 268.42(c)(4), all treatment residues of either type of lab pack also had to comply with the standards for the extraction procedure (EP) for metals, i.e., D004, D005, D006, D007, D008, D010, and D011. (D009 is not included in this list because most mercury-bearing wastes were excluded from the use of the alternative standards in both of these Appendices.) As such, if metals were concentrated in the residues from the incineration of an Appendix V lab pack and the resultant residues then exhibited one of the characteristics for EP metals, these residues would also have had to be stabilized to comply with the appropriate treatment standard for metals. In such a case, there was no practical difference between Appendix IV and Appendix V lab packs in terms of the treatment that was needed.

The majority of the comments received from the regulated community supported the **Agency**'s proposed approach. In this final rule EPA is, therefore, replacing Appendix IV and Appendix V with a new Appendix IV. In order to simplify the new Appendix IV it only contains those wastes excluded from lab packs. The following wastes are excluded from lab packs (and appear in new Appendix IV) for the purpose of using the

alternative lab pack treatment standard in 40 CFR 268.42(c): D009, F019, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, U151.

In today's rule, EPA is also stating that the alternative treatment standard for lab packs applies to the following additional waste codes that were previously not included in Appendix IV or V: wastes for which treatment standards were promulgated in the LDR Phase I rule August 1, 1992 (57 FR 37194), and wastes (including TC organic wastes) for which treatment standards are promulgated in this final rule. Today's rule does not list these as excluded waste codes in the new Appendix IV.

As a matter of clarification, the alternative treatment standard for lab packs is INCIN. This required combustion technology combined with the requirements of 40 CFR 268.42(c)(4) (ash residues are treated to meet the characteristic metals treatment standards), will ensure that all underlying hazardous constituents present in characteristic wastes (other than those excluded in the new Appendix IV), will be treated. The use of this alternative lab pack standard negates the requirement to monitor for, or comply with, the UTS for underlying hazardous organic constituents.

For reasons outlined in the June 1, 1990 final rule, mercury wastes were excluded from this alternative standard for lab packs. Mercury is considered a ``volatile metal'' which may lead to excessive air emissions in some combustion devices when present in large quantities. Mercury is also very difficult to stabilize if present in ash residues in large quantities. Commenters did not provide any justifiable technical reason for EPA to modify its position with respect to mercury wastes, and thus these wastes shall remain excluded from this alternative lab pack treatment standard.

E. Changes in the LDR Program in Response to the LDR Roundtable

EPA convened a roundtable meeting on January 12-14, 1993 to discuss the LDR program. The purpose of the roundtable was for EPA to hear suggestions on improvements to the LDR program from persons who implement it. Participants included representatives of hazardous waste generators, treaters, and disposers; public interest groups; state **environmental** agencies; EPA regional offices; and other federal agencies. EPA is today promulgating several recommendations made by roundtable participants. The **Agency** is consolidating the three existing treatment standard tables into one table, and is simplifying notification requirements and reducing paperwork, as discussed below. In addition, as discussed in an earlier section of this preamble, the **Agency** is also promulgating universal treatment standards. Furthermore, the **Agency** is committed to continue to identify ways the LDR program can be simplified. Additional opportunities for such streamlining will be explored in future LDR rulemakings.

1. Consolidated Treatment Table

Several of the groups present at the LDR roundtable expressed an interest in having a consolidated treatment standard table in the regulations. Participants stated that the existing system of three separate tables at 40 CFR 268.41-268.43 was too complex and burdensome. In its September 14, 1993 notice, EPA proposed a single consolidated table of treatment standards. Comments on the table were favorable.

Today, EPA is replacing the three existing treatment standard tables with the consolidated table, called ``Treatment Standards for Hazardous Waste'' and placing it at Sec. 268.40 along with much of the text found currently in Secs. 268.41-268.43. Section 268.42 continues

to describe the technology codes, to regulate California list PCBs and HOCs, to set out exemptions from the required methods, and to provide procedures for equivalency determinations. The numerical treatment standards in the consolidated table are identical to the UTS promulgated in today's rule with the exception of characteristic metal wastes.

Reformatting Secs. 268.40-268.43 also corrects a confusing aspect of the way the Code of Federal Regulations (CFR) has appeared for some time. The ``No **Land Disposal**'' treatment standards that have appeared at Sec. 268.43 will be deleted from the regulations and should no longer appear in the CFR. These treatment standards have not been in effect since 1990, when the LDR Third Third rule set treatment standards for these wastes that were expressed as either methods of treatment or numerical standards that now appear in the consolidated treatment standard table Sec. 268.40. It was only a drafting oversight that made these ``No **Land Disposal**'' standards continue to appear in the regulations, and today's rule corrects this mistake.

2. Simplified LDR Notification Requirements

Comments on LDR notification requirements at the roundtable ranged from suggestions that EPA should eliminate notifications altogether to suggestions that EPA modify or delete data items on the notification. In response, EPA proposed to eliminate the requirement at 40 CFR 268.7(a)(1)(ii) and at 268.9(d)(1) that the notification include treatment standards or references to those standards. It was argued that such a simplification makes particular sense in conjunction with EPA's proposal to consolidate the treatment standard tables. Commenters on this issue all supported this proposed simplification. EPA is thus dropping the treatment standard or reference to the treatment standard from the LDR notification in this final rule.

Today's action does not eliminate the existing requirement to identify the constituents in F001-F005 spent solvent wastes, F039 wastes, or the underlying hazardous constituents in D001, D002, and in TC organic wastes, unless the generator/treater is going to monitor for all hazardous constituents in the waste. However, the regulatory language is made clearer, and there is no longer any requirement that the corresponding constituent level be included with the constituents identified on the LDR notification for these wastes.

IV. Treatment Standards for Toxicity Characteristic Waste

A. Introduction--Content and Scope

EPA is promulgating treatment standards for the newly identified toxicity characteristic (TC) organic wastes (D018-D043) as proposed. These are identical to the UTS in today's rule. The UTS apply to the underlying hazardous constituents in the TC waste as well as the individual constituent responsible for the TC designation. Underlying hazardous constituents are any constituents in Sec. 268.48 which are reasonably expected to be present at levels above the UTS at the point of generation of the TC waste. (See definition at Sec. 268.2(i).) Although the intent of today's regulations is to require treating all underlying hazardous constituents present plus the TC constituent, today's rule calls for generators to monitor only the TC constituent and those underlying hazardous constituents ``reasonably expected to be present'' in their waste at its point of generation. Today's rule is promulgating the compliance monitoring provisions that were proposed. Section X of this preamble (Compliance Monitoring and Notification)

discusses them in detail.

Several commenters suggested that EPA promulgate alternative standards of incineration (INCIN), fuel substitution (FSUBS) and recovery of organics (RORGS) for these wastes. These commenters pointed to the Interim Final Rule of May 24, 1993 (58 FR 29867) where EPA extended the use of these methods of treatment to all D001 wastes disposed outside CWA or CWA-equivalent impoundments or Safe Drinking Water Act regulated Class I underground injection wells. EPA is not adopting this approach in today's rule for TC organic wastes. First, EPA does not believe that methods of treatment intended to address organic constituents will always adequately address any underlying metal constituents present in these wastes. In addition, the **Agency** has not yet been able to completely evaluate the appropriateness of requiring specified treatment technologies for TC wastes and other wastes.

1. Waste Management Systems Affected by Today's Rule

In terms of waste management systems, today's rule applies to those TC wastes which are managed in systems other than: (1) wastewater treatment systems which include surface impoundments whose ultimate discharge is subject to the Clean Water Act (CWA); (2) zero dischargers who, before permanent **land disposal** of the wastewater, treat the wastewaters in a CWA-equivalent wastewater treatment system; or, (3) Class I underground injection wells subject to the Safe Drinking Water Act (SDWA) Underground Injection Control (UIC) program. CWA-equivalent treatment means biological treatment for organics, reduction of hexavalent chromium, precipitation/sedimentation for metals, alkaline chlorination or ferrous sulfate precipitation of cyanide (to the extent these constituents are present in the untreated influent to wastewater treatment systems), or treatment that the facility can show performs as well or better than these enumerated technologies. See Sec. 268.37(a), 58 FR at 29885 (May 24, 1993). Organic TC wastes managed in these types of systems will be regulated in the next LDR rule.

Additionally, ``decharacterizing'' the TC wastes regulated under this rule by rendering them noncharacteristic does not remove them from the scope of these regulations. Chemical Waste Management v. EPA, 976 F. 2d at 14-15. Consequently today's final rule will apply to some injection practices, in particular, those involving Class V injection wells. These typically are wells injecting nonhazardous wastes above or into underground sources of drinking water. (If, however, the TC wastes injected into non-Class I wells were to be treated by CWA-equivalent means before injection, today's treatment standards would not apply. This is an example of the type of zero discharger referred to above.)

2. Categories of TC Wastes Affected by Today's Rule

The following TC wastes are subject to UTS: (1) all wastes identified as D018 through D043 (described in the proposed rule as ``new organic constituents); (2) D012 through D017 organic pesticide wastes whose TCLP extract composition meets the concentration criteria of 40 CFR 261.24, Table A but whose EP extract composition does not; (3) D012 through D017 pesticide wastes whose TCLP extract composition meets the concentration criteria of 40 CFR 261.24 Table A, as does the EP extract composition, and (4) soil and debris contaminated with the preceeding three sets of wastes. The first two categories are newly identified wastes, i.e. wastes not yet identified as hazardous at the time of the 1984 amendments and therefore not covered by the original statutory schedule. (The March 29, 1990 rule extended the list of chemicals defined as TC and changed the extraction step to a more sensitive procedure which may potentially identify more pesticide

wastes than did the EP.) For soil contaminated with the TC wastes, the variance process is available (see discussion in the Background section of this rule under the heading ``E. Treatment Standards for Hazardous Soil'').

As noted in the proposed rule, regulating **land disposal** of newly identified TC wastes by addressing underlying hazardous constituents is the same approach as EPA adopted in the recent interim final rule for ignitable (D001) and corrosive (D002) characteristic wastes, promulgated on May 10, 1993 (published on May 24, 1993, 58 FR 29860) in response to the court's decision in Chemical Waste Management v. EPA, 976 F. 2d 2. That case vacated and remanded certain **Agency** regulations (commonly referred to as the Third Third rule) establishing prohibitions and treatment standards for characteristic wastes, and also established rules as to when the prohibitions and standards would not apply. A summary of the court's decision, an overview of the interim final rule published on May 24, 1993, and a discussion of how the **Agency** proposed to apply this approach to the TC wastes can be found in the text of the proposed rule at 58 FR 48092.

Today's rule regulates underlying hazardous constituents in the D018-D043 as well as in newly identified D012-D017 and in the rest of the universe of D012-D017 wastes. (The definition of ``underlying hazardous constituents'' is contained at 268.2(i) in this rule.) For those D012-D017 nonwastewaters originally regulated in the Third Third rule, today's rule changes the numerical value of the previously applicable treatment standards to the UTS.

3. Soil Contaminated by Underground Storage Tanks

Soil which is contaminated with petroleum and is managed during corrective action of releases from a RCRA Subtitle I underground storage tank (UST) is not subject to the treatment standards promulgated today for the TC organic wastes (D018-D043). Such soil that fails the TC for one or more of the newly identified organic wastes (D018-D043) has been temporarily deferred from regulation as a hazardous waste (55 FR 26986). In addition, the **Agency** has proposed to permanently exempt UST petroleum-contaminated soils from the TC rule (58 FR 8504). However, any Subtitle I petroleum-contaminated soil identified as D001 through D017 would not be subject to the deferral and would be subject to all applicable RCRA **land disposal** restriction requirements.

The **Agency** reminds the regulated community that any soil contaminated by a release from a hazardous substance UST (Subtitle I) as well as from all non-Subtitle I USTs (including petroleum tanks) will continue to be subject to applicable RCRA hazardous waste requirements, including the **land disposal** restrictions. Likewise, petroleum-contaminated soils from non- UST sources that exhibit a hazardous characteristic are also subject to applicable Subtitle C requirements.

4. Metal TC Wastes Are Not Affected by Today's Rule

Today's rule does not affect TC metal wastes at all; this rule leaves the Third Third final treatment standards (which apply to EP metals) in place. Furthermore, today's rule does not affect the mineral processing wastes which were formerly exempt from Subtitle C regulation under the Bevill Amendment but which recently lost that exemption. Included in that set of wastes are wastes from the remediation of historic manufactured gas plant or coal gasification sites. EPA will address TC metal wastes and the former Bevill mineral processing wastes in a future rulemaking.

B. Background

1. Legal and Policy Basis for Today's TC Standards

Today's rule applies the UTS to underlying hazardous constituents in D012-D043 wastewaters and nonwastewaters. Commenters' principal objection to the proposed standards for TC wastes was that the September 1992 Circuit Court decision did not authorize EPA to regulate underlying hazardous constituents in TC wastes.

Most of these comments asserted that organic TC wastes were fundamentally different from ignitable or corrosive wastes and therefore EPA's decision to apply the standards promulgated in the May 24, 1993 Interim Final Rule for ignitable and corrosive wastes was inappropriate. These commenters said that TC wastes were unlikely to pose a threat to human health and the environment once treatment removed the single constituent, partly because such treatment would remove other similar hazardous components of the waste. None of these commenters submitted process data demonstrating these claims. On the other hand, some commenters argued that merely deactivating characteristic wastes might well leave hazardous components intact.

The **Agency** is regulating in this rule underlying hazardous constituents in TC wastes when they are managed in non-CWA/non-CWA equivalent/non-Class I injection well waste management systems. If, as commenters assert, treatment of the TC constituent effectively treats underlying hazardous constituents, then regulating the underlying hazardous constituent poses no further burden. Additionally, EPA believes that the compliance monitoring provisions requiring the generator to address only those underlying constituents ``reasonably expected to be present in the wastes'' relieves generators and treaters from an undue regulatory burden.

Several commenters objected that extending the requirement to treat underlying hazardous constituents from ignitable and corrosive wastes, as promulgated in the May 24, 1993 Interim Final Rule, to TC wastes was unnecessary. The numerical treatment standard for the constituent present at the TC level, the commenters reasoned, meets RCRA's section 3004(m) ``minimize threat'' requirement. EPA is not persuaded by such reasoning. 55 FR 22542, 22652 (June 1, 1990); Chemical Waste Management, 976 F.2d at 14; HWTC III, 886 F. 2d at 362. The TC level identifies wastes that are clearly hazardous, and does not evaluate presence of underlying hazardous constituents, non-groundwater exposure pathways, or adverse **environmental** effects.

2. Ongoing Management Practices for TC Wastes

The proposed rule solicited comments and data on volumes of TC wastes managed in Class V injection wells, and on waste management practices employed prior to such injection. EPA received little substantive comment and consequently has no basis for changing the proposed approach.

The proposed rule also solicited information about industrial generation patterns in order to allow the **Agency** to assess the potential for source reduction or recycling for these TC wastes in light of their wide diversity. However, EPA received no comments describing current industry practices upon which the **Agency** could act.

The **Agency** is to consider opportunities for source reduction and recycling of these wastes, and ways treatment standards could reflect such types of waste minimization. The **Agency** notes that the subtitle C rules generally, and the LDR rules in particular, have already resulted in substantial volumes of hazardous waste no longer being generated, because these rules impose waste management costs on hazardous waste

generators, and thus create a financial incentive to generate less waste.

Finally, several commenters expressed concerns about achievability of UTS for underlying hazardous constituents in complex matrices and about the appropriateness of numerical standards based on incineration. See the discussion of UTS in section III.A of this preamble for more information on these comments.

C. Treatment Standards for New TC Organic Constituents (D018-D043)

1. Nonwastewaters

The **Agency** is also promulgating concentration-based treatment standards for TC organic constituents in nonwastewaters, that are identical to the levels promulgated as UTS in a separate section of this preamble. These standards are based on treatment data that were used to establish UTS for these same constituents in listed wastes. These standards are primarily based on incineration data and are presented at the end of this section.

EPA believes that a variety of treatment technologies, combustion and non-combustion, can achieve these treatment standards. EPA reiterates that any technology that does not constitute impermissible dilution can be used to meet these concentration levels.

BDAT Standards for TC Organic Wastes
[Nonwastewaters]

Code	Regulated constituent	Maximum for any single grab sample. Total composition (mg/kg)
D018	Benzene	10
D019	Carbon tetrachloride	6.0
D020	Chlordane	0.26
D021	Chlorobenzene	6.0
D022	Chloroform	6.0
D023	o-Cresol	5.6
D024	m-Cresol	\1\5.6
D025	p-Cresol	\1\5.6
D026	Cresol	5.6
D027	1,4-Dichlorobenzene	6.0
D028	1,2-Dichloroethane	6.0
D029	1,1-Dichloroethylene	6.0
D030	2,4-Dinitrotoluene	140
D031	Heptachlor	0.066
D031	Heptachlor epoxide	0.066
D032	Hexachlorobenzene	10

D033	Hexachloro-1,3-butadiene	5.6
D034	Hexachloroethane	30
D035	Methyl ethyl ketone	36
D036	Nitrobenzene	14
D037	Pentachlorophenol	7.4
D038	Pyridine	16
D039	Tetrachloroethylene	6.0
D040	Trichloroethylene	6.0
D041	2,4,5-Trichlorophenol	7.4
D042	2,4,6-Trichlorophenol	7.4
D043	Vinyl Chloride	6.0

\1\m- and p-cresol are regulated together as the sum of their concentrations.

2. Wastewaters

The **Agency** is today promulgating concentration-based treatment standards for the TC organic constituents in wastewaters, that are identical to the levels promulgated as UTS in a separate part of today's rule. These standards were based on existing treatment data that were used to establish UTS for these same constituents in the broad array of listed wastes. Today's standards are based on data representing a variety of wastewater treatment units and are presented at the end of this section.

These wastewater treatment standards apply to newly identified TC wastewaters that are managed in systems other than those regulated under the CWA, those regulated under the SDWA that inject TC wastewaters into Class I injection wells, and those zero discharge facilities that engage in CWA-equivalent treatment prior to **land disposal**. The treatment standards promulgated today for newly identified TC organic (D018-D043) wastewaters require treatment to meet the UTS for the TC constituent and for the underlying hazardous constituents in the TC waste as generated.

BDAT Standards for TC Organics
[Wastewaters]

Constituent	Maximum for any single grab sample. Total composition (mg/l)
D018--Benzene	0.14
D019--Carbon tetrachloride	0.057
D020--Chlordane	0.0033
D021--Chlorobenzene	0.057
D022--Chloroform	0.046

D023--o-Cresol	0.11
D024--m-Cresol	0.77
D025--p-Cresol	0.77
D026--Cresol	0.88
D027--1,4-Dichlorobenzene	0.09
D028--1,2-Dichloroethane	0.21
D029--1,1-Dichloroethylene	0.025
D030--2,4-Dinitrotoluene	0.32
D031--Heptachlor	0.0012
D031--Heptachlor epoxide	0.016
D032--Hexachlorobenzene	0.055
D033--Hexachloro-1,3-butadiene	0.055
D034--Hexachaloroethane	0.055
D035--Methyl ethyl ketone	0.28
D036--Nitrobenzene	0.068
D037--Pentachlorophenol	0.089
D038--Pyridine	0.014
D039--Tetrachloroethylene	0.056
D040--Trichloroethylene	0.054
D041--2,4,5-Trichlorophenol	0.18
D042--2,4,6-Trichlorophenol	0.035
D043--Vinyl Chloride	0.27

3. Radioactive Mixed Waste

Radioactive mixed wastes are those wastes that satisfy the definition of radioactive waste subject to the Atomic Energy Act (AEA) that also contain waste that is either listed as a hazardous waste in Subpart D of 40 CFR Part 261, or that exhibit any of the hazardous waste characteristics identified in subpart C of 40 CFR Part 261. Since the hazardous portions of the mixed waste are subject to RCRA, the **land disposal** restrictions apply. This means that the RCRA hazardous portion of all mixed waste must meet the appropriate treatment standards for all applicable waste codes before **land disposal**. Therefore, any radioactive waste mixed with organic TC wastes that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA facilities must meet the treatment standards being promulgated today for the TC wastes.

The standards that were proposed for the TC wastes were also proposed for TC radioactive mixed wastes. Prior to this proposal, however, the Department of Energy (DOE) had expressed some concerns about meeting certain treatment standards and stated that they were collecting data from their facilities on mixed TC wastes. EPA stated in the proposed rule that, for the most part, the low concentrations of radioactive compounds should not interfere with the treatability of the hazardous constituents in the waste, and requested data on instances when the radioactivity prevented the waste from meeting the LDR treatment standard.

One commenter suggested that EPA postpone its decision on appropriate methods for treating mixed waste until information currently being collected profiling commercially generated low- level radioactive mixed waste has been submitted and reviewed by EPA. This commenter claimed that the results of this profile contradict EPA's statement that radioactive material concentrations in mixed waste are low and should not interfere with the treatment of the mixed waste. Another commenter expressed the belief that the presence of radioactive

components within the limits of operator exposure and safety should not interfere with the treatment of hazardous constituents in waste.

Neither commenter submitted any data or other supporting information to substantiate their assertions regarding the treatability of radioactive mixed waste; therefore, EPA has decided to promulgate the standards for newly identified TC radioactive mixed wastes as proposed. However, if data is submitted to EPA indicating that the presence of radioactive components prevents a waste from meeting the LDR treatment standards, the **Agency** will evaluate the data and amend the standards as appropriate. The **Agency**'s variance provisions of 40 CFR 268.44 can also be used to obtain alternate limits in the meantime.

D. Treatment Standards for Pesticide Wastes Exhibiting the Toxicity Characteristic

D012--Endrin
D013--Lindane
D014--Methoxychlor
D015--Toxaphene
D016--2,4-D
D017--2,4,5-TP (Silvex)

The **Agency** is promulgating treatment standards for these wastes essentially as proposed with the additional requirement that underlying hazardous constituents be treated in nonwastewater forms of these wastes. Today's standards apply to all D012-D017 wastes managed in non-CWA/non-CWA-equivalent/non-Class I injection well waste management facilities. These are the toxic pesticide wastes which are identified as toxic following application of the TCLP. The TCLP is more sensitive than the EP analysis, possibly bringing more wastes into the toxicity characteristic category than did the EP.

1. Newly Identified Pesticide Nonwastewaters

EPA is today regulating newly identified D012-D017 nonwastewaters plus D012-D017 nonwastewaters regulated earlier in the Third Third rule. Treatment standards for both sets of D012-D017 nonwastewaters include the UTS value for the TC constituents plus UTS values for underlying hazardous constituents. The changes between the Third Third standards and today's rule are that the numerical value of the toxaphene nonwastewater standard rises from 1.3 to 2.6 and the standard for D013, lindane, incorporates numbers for the four BHC isomers. (It should be noted that EPA determined that the amount of D012-D017 waste subject to the treatment standards is very small. 55 FR at 22634, 22646. Based on this determination, it is very unlikely that newly identified D012-D017 are being generated.)

Today's rule also prohibits dilution of D012-D017 nonwastewaters injected into Class I deep injection wells. Consequently, these pesticide wastes must be treated to meet the treatment standards before they can permissibly be injected into such units, unless that unit has been granted a no-migration determination. Section VIII of this preamble discusses this and other deepwell injection issues presented in today's rule in more detail.

BDAT Standards for Pesticides
[Nonwastewaters]

Code	Regulated constituent	Maximum for any single grab sample. Total composition (mg/kg)
D012	Endrin	0.13
D012	Endrin aldehyde	0.13
D013	alpha-BHC	0.066
D013	beta-BHC	0.066
D013	gamma-BHC	0.066
D013	delta-BHC	0.066
D014	Methoxychlor	0.18
D015	Toxaphene	2.6
D016	2,4-D	10
D017	2,4,5-TP (Silvex)	7.9

2. Pesticide Wastewaters

EPA set treatment standards expressed as required methods of treatment for the EP toxic pesticide wastewaters in the Third Third final rule (55 FR 22554). Today's rule extends these treatment standards to those pesticide wastewaters covered in today's rule. (See 268.40)

E. Exemptions for De Minimis Losses of Commercial Chemical Product or Chemical Intermediates That Exhibit the Toxicity Characteristic (TC), and for TC Laboratory Wastes Discharged to CWA Wastewater Treatment Systems

In the Interim Final Rule published May 24, 1993, EPA established de minimis exemptions for commercial chemical product or chemical intermediates that are ignitable or corrosive hazardous wastes and that contained underlying hazardous constituents (58 FR 29875). The **Agency** proposed in Phase II to extend the exemptions in 40 CFR 268.1 to commercial chemical products or chemical intermediates that are TC organic wastes when disposed (58 FR 48118). Commenters expressed support for this approach.

This action is necessary to avoid situations where minor leaks of organic TC commercial chemical products or chemical intermediates to a wastewater treatment system would potentially trigger all of the potential consequences of treating all underlying hazardous constituents that might be in the waste. As EPA noted in originally determining that the mixture rule should not apply in such situations, such small losses are as a practical matter unavoidable; responsible management involves channeling these minor losses to a centralized

wastewater treatment system. In addition, there is a natural incentive to minimize the losses because the materials would otherwise be commercial chemical products or intermediates (46 FR 56583, Nov. 17, 1981). Moreover, allowing de minimis losses of TC materials to trigger all of the LDR treatment consequences would be anomalously stringent because de minimis losses of listed wastes (i.e., the commercial chemical products listed in Sec. 261.33), which tend to be more concentrated (see generally 58 FR at 29875), would not be regulated because of the exception to the mixture rule found at Sec. 261.3(a)(iv)(D).

This same type of exception is needed for TC laboratory wastes that are commingled with other plant wastewaters under designated circumstances: TC laboratory wastes containing underlying hazardous constituents from laboratory operations, that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to regulation under the CWA (including wastewaters at facilities which have eliminated the discharge of wastewater), provided that the annualized flow of laboratory wastewater into the facility's headwork does not exceed one part per million (the same condition that applies to the existing exemption in Sec. 261.3(a)(2)(iv)(E)).

Thus de minimis losses of commercial chemical product or chemical intermediates that are TC organic wastes, and TC organic laboratory wastes discharged to CWA wastewater treatment systems, are not subject to the requirements of 40 CFR 268. De minimis losses are those occurring from normal material handling, minor leaks of equipment tanks or containers, and similar small but, for practical purposes, unavoidable losses. See Sec. 261.3(a)(2)(iv)(D) and 268.1(e)(4) as promulgated at 58 FR 29884 (May 24, 1993). The definition of de minimis loss is the same as EPA used in the May 24, 1993 rule. This definition mirrors the parallel language in Sec. 261.3(a)(iv)(D) except that it also includes discharges from safety showers and rinsing and cleaning of personal safety equipment and rinsate from empty containers or from containers that are rendered empty by that rinsing. When the Sec. 268.1(e)(4) definition was originally promulgated in the May 24, 1993 rule, it seemed unlikely that ignitable or corrosive wastes would be generated from safety showers or rinsate. The **Agency** believes it is more likely that TC wastes could be generated in such a manner, therefore, the definition is being expanded to include this language in this rule.

EPA also notes that the characteristic commercial chemical products exempted under this rule and the May, 1993 rule are not limited to products in which a particular chemical is ``the commercially pure grade of the chemical, any technical grades of the chemical, and all formulations in which the chemical is the sole active ingredient.'' (See Sec. 261.33(d) comment). Rather, the exemption extends to de minimis losses (as defined) of in-process materials such as intermediates and materials that would be products if they were not inadvertently discarded. 55 FR at 2869 (Jan. 31, 1991). The citation in the comment to Sec. 261.33(d), quoted above, is necessary to define the scope of the listing, but as just explained, does not apply to losses of characteristic materials.

V. Treatment Standards for Newly Listed Wastes

A. Treatment Standards for Coke By-product Production Wastes

K141--Process residues from the recovery of coal tar, including but

not limited to tar collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087, decanter tank tar sludge from coking operations.
K142--Tar storage tank residues from the production of coke from coal or the recovery of coke by-products produced from coal.
K143--Process residues from the recovery of light oil, including but not limited to those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.
K144--Wastewater treatment sludges from light oil refining, including but not limited to intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.
K145--Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.
K147--Tar storage tank residues from coal tar refining.
K148--Residues from coal tar distillation, including but not limited to still bottoms.

EPA is promulgating the treatment standards that were proposed for coke by-product production wastes. These treatment standards also apply to soil and debris contaminated with these wastes, although a variance process is available for such soils (see discussion on variances in the Background section of this rule under the heading ``E. Treatment Standards for Hazardous Soil''). The preamble of the proposed rule describes the generation and characteristics of the newly listed wastes in greater detail (58 FR 48119). Today's standards are concentration-based limits for wastewaters and nonwastewaters, numerically identical to the UTS promulgated elsewhere in this rule for the nine constituents regulated in these wastes.

The American Coke and Coal Chemicals Institute requested that EPA allow the use of these wastes as fuels in blast furnaces and other applications where coke, coal and coal tar are used as fuels. The commenters were requesting EPA to extend the existing recycling exclusion--which allows these wastes to be combined with coal feedstock residue as it is charged to the coke oven, added to the coal recovery process or mixed with coal tar before this coal tar is sold as a product or further refined. Extending this exclusion is beyond the scope of this regulation; it was not included in the September proposal as an option for managing these wastes. The Definition of Solid Waste Task Force is examining the broad range of these types of issues.

The other comments received concerning the proposed treatment standards for coke products' wastes came from the waste treatment industry. Several waste treatment companies supported applying universal standards to these waste streams and the UTS concept in general. However, one commenter provided data in support of extending the standards originally applied to K087 to these wastes. EPA evaluated these data but found no reason not to apply UTS to these wastes. EPA's evaluation of these data is presented in the Background Document for these wastes. In separate comments, two waste treatment companies objected to the benzene nonwastewater standards as unnecessarily high and pointed out that their facilities could achieve benzene limits below that proposed in the UTS. EPA does not believe these data really reflect better treatment. Rather, the commenters appear to have generated a waste matrix in which benzene is detectable at lower levels. EPA is promulgating the benzene nonwastewater standard as proposed, believing that it reflects an appropriate and broader

assessment of benzene detection limits in combustion residues.

BDAT Standards for K141, K142, K143, K144, K145, K147, and K148

[Nonwastewaters]

Constituent	Constituents regulated for waste codes					Maximum for any single grab sample. Total composition (mg/kg)	
	K141	K142	K143	K144	K145	K147	K148
Benzene						10	X
	X	X	X	X	X	.....	
Benz(a)anthracene						3.4	X
	X	X	X	X	X	X	
Benzo(a)pyrene						3.4	X
	X	X	X	X	X	X	
Benzo(b)fluoranthene						\1\6.8	X
	X	X	X	.....	X	X	
Benzo(k)fluoranthene						\1\6.8	X
	X	X	X	.....	X	X	
Chrysene						3.4	X
	X	X	X	X	X	X	
Dibenz(a,h)anthracene						8.2	X
	X	.....	X	X	X	X	
Indeno(1,2,3-cd)pyrene						3.4	X
	X	.....	.....	.....	X	X	
Naphthalene							
	5.6	.....	.....	.....	.....	.....	
	X	.....	.....				

\1\This standard represents the sum of the concentrations for each of this pair of constituents.

BDAT Standards for K141, K142, K143, K144, K145, K147, and K148

[Wastewaters]

Constituents regulated for waste codes					Maximum for any single grab sample. Total composition (mg/l)	
Constituent						
K141	K142	K143	K144	K145	K147	K148
Benzene					0.14	X
X	X	X	X	X	.....	
Benz(a)anthracene					0.059	X
X	X	X	X	X	.....	
Benzo(a)pyrene					0.061	X
X	X	X	X	X	X	
Benzo(b)fluoranthene					\1\0.11	X
X	X	X	.....	X	X	
Benzo(k)fluoranthene					\1\0.11	X
X	X	X	.....	X	X	
Chrysene					0.059	X
X	X	X	X	X	X	
Dibenz(a,h)anthracene					0.055	X
X	.....	X	X	X	X	
Indeno(1,2,3-cd)pyrene					0.0055	X
X	.....	.....	.....	X	X	
Naphthalene						
0.059	.....	.....	.....	.....		
X	.....	.....				

\1\This standard represents the sum of the concentrations for each of this pair of constituents.

B. Treatment Standards for Chlorotoluenes

K149--Distillation bottoms from the production of alpha (methyl) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride.)

K150--Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha (methyl) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.

K151--Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha (methyl) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides and compounds with mixtures of these functional groups.

EPA is promulgating the treatment standards that were proposed for chlorotoluene wastes. The preamble of the proposed rule describes the generation and characteristics in greater detail (58 FR 48121). Today's standards are concentration-based limits for wastewaters and nonwastewaters, numerically identical to the UTS promulgated elsewhere in this rule for the thirteen constituents regulated in these wastes.

Comments received concerning the proposed treatment standards for chlorotoluene wastes came from the waste treatment industry; they were similar to those received concerning the treatment standards for coking wastes. Several waste treatment companies supported applying universal standards to these waste streams and the UTS concept in general. Two waste treatment companies objected to the benzene nonwastewater standards as unnecessarily high and pointed out that their facilities could achieve benzene limits below that proposed in the UTS. EPA, however, believes that the UTS for benzene nonwastewaters reflects an appropriate and broad assessment of benzene detection levels in combustion residues.

BDAT Standards for K149, K150, and K151
[Nonwastewaters]

Constituent	Maximum for any single grab sample. Total composition (mg/kg)	Constituents regulated for waste codes		
		K149	K150	K151
Benzene	10	.....	.....	X
Carbon tetrachloride	6.0	.....	X	X
Chloroform	6.0	X	X	X
Chloromethane	30	X	X	.....
Chlorobenzene	6.0	X	.....	.....
1,4-Dichlorobenzene	6.0	X	X	.....
Hexachlorobenzene	10	X	X	X
Pentachlorobenzene	10	X	X	X
1,2,4,5-Tetrachlorobenzene	14	X	X	X
1,1,2,2-Tetrachloroethane	6.0	.....	X	.....
Tetrachloroethylene	6.0	.....	X	X
1,2,4-Trichlorobenzene	19	.....	X	.....
Toluene	10	X	.....	X

BDAT Standards for K149, K150, and K151
[Wastewaters]

Constituent	Maximum for	Constituents regulated for waste

Constituent	any single grab sample. Total composition (mg/l)	codes		
		K149	K150	K151
Benzene	0.14	.....	.....	X
Carbon tetrachloride	0.057	.....	X	X
Chloroform	0.046	X	X	X
Chloromethane	0.19	X	X	.....
Chlorobenzene	0.057	X	.....	.....
1,4-Dichlorobenzene	0.090	X	X	.....
Hexachlorobenzene	0.055	X	X	X
Pentachlorobenzene	0.055	X	X	X
1,2,4,5-Tetrachlorobenzene.	0.055	X	X	X
1,1,2,2-Tetrachloroethane.	0.057	.....	X	.....
Tetrachloroethylene	0.056	.....	X	X
1,2,4-Trichlorobenzene.	0.055	.....	X	.....
Toluene	0.080	X	.....	X

VI. Debris Contaminated With Newly Listed or Identified Wastes

Debris contaminated with the hazardous wastes included in today's rule must be treated prior to **land disposal**. The hazardous debris may be treated to meet the treatment standards promulgated today for the constituents which are contaminating the debris, or it may be treated to meet the alternative debris standards promulgated in the LDR for Newly Listed Wastes and Hazardous Debris (57 FR 37194, August 18, 1992).

A. Debris Treated To Meet the Phase II Treatment Standards

Debris that is treated to meet the treatment standards promulgated in today's rule for newly listed wastes would remain subject to the hazardous waste management regulations (subtitle C) for as long as the debris ``contains'' the hazardous waste (see 57 FR 37625-26, August 18, 1992). On the other hand, debris that is treated to meet the treatment standards promulgated in today's rule for newly identified TC organic wastes, including any underlying hazardous constituents the generator reasonably expects to be present in the waste, could be disposed in a nonhazardous waste (subtitle D) landfill because the characteristic identifying the waste as hazardous is removed through meeting the LDR treatment standards.

B. Debris Treated To Meet the Alternative Debris Treatment Standards

The alternative treatment standards require the use of specific technologies from one or more of the following categories: extraction technologies, destruction technologies, or immobilization. Treatment must be performed in accordance with specified performance standards

found in the regulations at 40 CFR 268.45. If one of the extraction or destruction technologies is used, and the debris does not display any characteristic of hazardous waste, then EPA would consider the treated debris to no longer contain hazardous waste. Such treated debris could, therefore, be reused, returned to the natural environment, or disposed in a nonhazardous waste (subtitle D) facility. Nondebris residuals generated from the treatment of debris contaminated with listed wastes would still be hazardous wastes by virtue of the derived-from rule and would be subject to the hazardous waste management system, including the treatment standards for newly listed wastes in today's rule.

VII. Response to Comments Regarding Exclusion of Hazardous Debris That Has Been Treated by Immobilization Technologies

A. Background

The final Phase I **Land Disposal** Restrictions (LDR) rule promulgated on June 30, 1992 (57 FR 37194, August 18, 1992), excludes from Subtitle C control hazardous debris that is treated using an extraction or destruction technology provided the treated debris meets the performance standards specified in Sec. 268.45 Table 1. Our basis for doing this is that the debris no longer contains the hazardous waste. On the other hand, hazardous debris treated by an immobilization technology is still subject to the hazardous waste regulations because the **Agency** has insufficient data or information to support that such treated debris would not leach Appendix VIII constituents over time in a manner that would be protective to human health and the environment. In our proposal to the Phase I LDR rule, the **Agency** solicited comment on whether immobilized hazardous debris should be excluded from Subtitle C control. While the **Agency** received favorable comments on excluding such treated debris from the hazardous waste regulations, no information or data was provided to support such a position. Therefore, the final rule requires that immobilized hazardous debris continue to be managed as a hazardous waste.

The **Agency** decided to revisit the issue of whether immobilized hazardous debris, if treated in certain ways or is treated to meet certain limits, should be excluded from Subtitle C control. As a result, since the promulgation of the Phase I LDR rule, the **Agency** has undertaken a number of activities.

B. Roundtable Discussion

In an attempt to gather information on the issue, the **Agency** sponsored a roundtable discussion on August 3, 1992. Participants at the meeting included persons who commented on the Phase I LDR rule, debris treatment vendors, hazardous waste treaters and disposers, state officials, and officials from the Department of Energy (see Docket for specific list of attendees). Representatives from the **environmental** interest groups were also invited but were unable to attend. The purpose of the meeting was to gather information and discuss various regulatory approaches that would allow the **Agency** to exclude immobilized hazardous debris from Subtitle C control. While no specific data was gathered, there was a general discussion on the types of standards that could be applied such as design and operating standards, leach test, structural integrity test, permeability test for encapsulating material, so as to exclude immobilized hazardous debris from hazardous waste control. Additionally, the following points were

also made by one or more participants at the roundtable.

<bullet> A number of the attendees indicated that even if immobilized hazardous debris were excluded from hazardous waste control, it would continue to be managed as a hazardous waste due to CERCLA liability concerns.

<bullet> There was some question whether a specific exclusion for immobilized hazardous debris was necessary or whether the Hazardous Waste Identification Rule (HWIR) may be a more appropriate mechanism for addressing this issue.

<bullet> A representative from the glass industry suggested that glass cullet and vitreous materials should have a separate treatment standard. He indicated that the glass matrix would not leach lead at a higher rate than would an immobilized product--that is, it made little sense to grind up the glass material and then to stabilize it when the original matrix is just as sound.

While no consensus was reached, the following principles were generally arrived at by most of the participants at the meeting.

Microencapsulation: Participants at the meeting seem to believe that using a leach test may be more appropriate to demonstrate effective microencapsulation immobilization over an approach of developing design and operating standards. It was noted that treatment of hazardous debris is very waste and debris specific; if one could define design and operating standards that were generally applicable, they would likely be too burdensome in many cases.

Macroencapsulation/Sealing: The participants seem to indicate that the grinding requirement in the TCLP leach test made it inappropriate for predicting performance of macroencapsulation/sealing immobilization technologies. These technologies rely on an impermeable coating applied to the outside of the debris. Rather, the participants suggested a structural test to determine whether the given debris/technology combination was sufficient to maintain the coating or a permeability test for the coating media. While the participants conceptually believed that such an approach was workable, no one was able to suggest a specific test or standard. In addition, it was felt by some of the participants that the development of such a test could be difficult to develop.

While no data or information was provided at the meeting, it was indicated that if such information was submitted to the **Agency**, the **Agency** would consider such information in making its decision.

C. EPA Investigations

In addition to the above roundtable discussions, EPA has also been reviewing the literature and talking to vendors in an effort to obtain sufficient information on how to propose standards that could allow the exclusion of immobilized hazardous debris. At the time the Phase II LDR rule was proposed, no useful insights had been gained on how to specify design and operating standards that would ensure that immobilized hazardous debris was nonhazardous; the reason for this was the paucity of experience in immobilizing hazardous debris. Nevertheless, the **Agency** expressed interest in pursuing this area and specifically sought assistance from the regulated community on this issue.

D. Specific Questions for Which Comments Were Solicited

While the **Agency** had a better sense of the types of standards that may be appropriate for excluding immobilized hazardous debris from

Subtitle C control at the time of the Phase II proposal, the **Agency** still did not have the data to propose specific exclusions. For microencapsulation in particular, if a leach test were the most appropriate mechanism for determining whether such treated debris is nonhazardous, the **Agency** expressed the belief that HWIR may be the most appropriate rulemaking to address this issue. The **Agency** had a series of studies underway, was evaluating comments, but was not in a position to determine what such levels were at that time. With respect to macroencapsulation/sealing, additional data or information needed to be gathered before the **Agency** would be in a position to exclude this type of immobilized hazardous debris. To assist the **Agency** in this effort, we specifically solicited comment on the following questions:

Microencapsulation:

<bullet> Is the use of a leach test for excluding immobilized hazardous debris more appropriate than specification of design and operating standards?

<bullet> Is exclusion of immobilized hazardous debris using design and operating standards workable?

Macroencapsulation/Sealing:

<bullet> What type of structural or other test could be used?

<bullet> What type of criteria should be applied in determining whether such debris is nonhazardous?

The **Agency** is also considering allowing stabilization for soils containing low levels of organic constituents, and solicited comment on whether similar stabilization techniques or tests to ensure the effectiveness of such stabilization would be appropriate for excluding debris from Subtitle C control.

In addition, the **Agency** specifically solicited comment on any available data or information to demonstrate that immobilized hazardous debris (if treated properly) would not pose a substantial hazard to human health and the environment, stating that if such information were submitted to the **Agency**, the **Agency** would exclude such debris from Subtitle C control.

E. Comments Received and Conclusions

Microencapsulation: One commenter stated that specifying design and operating standards is appropriate for excluding immobilized hazardous debris from subtitle C, asserting that nothing is gained in performing a leach test on hazardous debris. Other commenters suggested that EPA consider a combination of a structural test combined with a leaching test conducted on a representative intact sample of the encapsulated waste. None of these commenters submitted any supporting information to substantiate these conflicting claims. However, the commenters did agree that if a leach test is used, the TCLP as it is now defined is inappropriate for immobilized debris.

Macroencapsulation/Sealing: Several commenters claimed that the TCLP test is inappropriate for immobilized material because the size reduction required by the test protocol destroys the encapsulant, thereby defeating the purpose of the technology. These commenters suggested that EPA instead consider a combination of a structural test (a 50 psi standard was suggested) combined with a leaching test conducted on a representative intact sample of the encapsulated waste. These commenters did not submit any data to verify that a 50 psi standard would insure the integrity of the immobilized waste, and although some commenters recommended that a new leach test protocol be developed, they did not suggest any specific protocols for a leach test

on the intact debris waste.

Exclusion of Immobilized Debris from Subtitle C Regulation: Several commenters maintained that debris treated with an immobilization technology should be excluded from Subtitle C regulation. However, these commenters did not submit any supporting data to verify this claim.

Two commenters claimed that a careful reading of 40 CFR 268.7(b) indicates that waste which is treated using a specified treatment technology is not subject to further testing to exit Subtitle C and claimed that the rules for debris treated in accordance with the alternative treatment standards specified in 40 CFR 268.45 should be the same. Their interpretation of this section of the CFR is incorrect. With regard to wastes for which technologies have been specified as the treatment standard, 40 CFR 268.7(b) contains the wording of the certification stating that the waste has been treated in accordance with Sec. 268.42; this certification must be signed before the waste may be **land** disposed. 40 CFR 268.7(b) does not say that this waste is no longer subject to subtitle C regulation.

One commenter suggested that, at a minimum, EPA should establish health based numerical standards for exclusion of hazardous debris from subtitle C. This commenter made no suggestion as to what test method should be used. The issue of basing LDR standards on the basis of risk rather than technology performance is addressed in Section III A 2 a of this rule, ``Risk-based Universal Treatment Standards.''

Finally, one commenter suggested that EPA allow the use of stainless steel as an encapsulant, claiming that its performance would be superior to that of other encapsulants, such as polymeric organics, which allegedly fail due to the radiation effects to their chemical bonds.

Conclusions: Although commenters were in general agreement on a number of issues (e.g. inappropriateness of the TCLP for debris, use of a 50 psi structural test as a performance standard, use of a leach test performed on intact debris), no supporting data or other information was submitted to support their claims and requests. Therefore, the **Agency** is not promulgating any modifications to the debris rule at this time. The **Agency** is evaluating exclusions as part of the HWIR process and will reassess appropriate action on debris if HWIR does not adequately address debris.

VIII. Deep Well Injection Issues

A. Prohibition of Dilution of High TOC Ignitable and of TC Pesticide Wastes Injected Into Class I Deep Wells

Today's rule prohibits the **disposal** of two types of waste into deep-well injection via Class I Underground Injection Control (UIC) wells unless the wastes first meet the **land disposal** restrictions promulgated in today's rule for these wastes, or the wastes are injected into a well that is subject to a no-migration determination. These wastes are nonwastewaters exhibiting the characteristic of ignitability at the point of generation and containing greater than 10 percent Total Organic Carbon (``high TOC ignitable liquids subcategory'') and also TC toxic halogenated pesticide wastes (DO12-D017). Thus, EPA is promulgating, as proposed, regulations excluding these two wastes from the portion of the rule at 40 CFR 268.1(c)(3) that allows a waste to be injected into a Class I deep injection well if the waste no longer exhibits a characteristic at the point of

injection. Today's rule also includes a one-year capacity variance for these injected waste streams.

For D001 High TOC ignitables, the treatment standard is expressed as methods of treatment that must be used prior to **land disposal**: combustion (i.e. incineration or fuel substitution) or recovery of organics. The preamble to the proposed rule stated that high TOC ignitable nonwastewaters contain high concentrations of organics that can either be recovered directly for reuse, or can be burned in combustion devices. These wastes are not injected in significant volumes, so that redirection of the wastes to treatment technologies will not have significant impact on well operators. 58 FR 48118-48119. EPA received no information to the contrary from commenters.

The treatment standards for TC pesticide wastewaters are also expressed as methods of treatment: biodegradation or incineration. On the other hand, the treatment standards for EP pesticide nonwastewaters are expressed as levels that may be achieved by using any treatment technology, other than impermissible dilution. (The Third Third rule had already disqualified these wastes from the exception that allowed dilution of characteristic wastes that were to be managed in Clean Water Act treatment systems including surface **land disposal** units, Sec. 268.3(b) and 55 FR 22657.)

As discussed at length in the preamble to the proposed rule, the **Agency**'s initial reading of the D.C. Circuit Court's decision is that wastes that are characteristically hazardous at the point of generation must typically be treated to destroy or remove hazardous constituents before **land disposal**, or be disposed of in a no-migration unit. 976 F.2d at 24. This is certainly a permissible interpretation of the opinion. Furthermore, the decision encompasses underground injection wells, specifically Class I deep wells, since they are permanent **land disposal** units. 976 F.2d at 25. Thus, under this reading of the court's opinion, these ignitable and pesticide wastes would have to be treated to remove hazardous constituents before injection.

EPA's decision to prohibit injection of these untreated wastes, however, is based not only on its initial interpretation of the Chemical Waste Management opinion (which, as noted below, may still evolve), but also on the particular wastes involved here. The wastes at issue are ignitable wastes with potentially very high concentrations of hazardous constituents, and pesticide wastes containing very toxic constituents.

Treatment is also warranted to reduce the amounts of these toxic wastes being **land** disposed. RCRA section 1003(a)(6) (``statutory goal of minimizing the . . . **land disposal** of hazardous waste by encouraging . . . properly conducted recycling and reuse, and treatment''); Steel Manufacturers' Association v. EPA, _____ F.3d _____, (D.C. Cir. July 9, 1994) (``We conclude that minimizing the overall volume of slag that is to be disposed is by itself, a sufficient justification for the zinc treatment standard . . .'') (slip op. at 13). Finally, only small volumes of these wastes are injected, and segregation of the wastes should not prove to be unduly difficult. For all of these reasons, the **Agency** believes it appropriate to prohibit injection of these wastes at this time, unless the wastes are treated to satisfy section 3004(m) or are disposed in a no-migration unit. In this regard, the **Agency** emphasizes that no-migration petitions for Class I nonhazardous wells receiving decharacterized wastes may be submitted to EPA or the Authorized States for evaluation at this time. The petitions may encompass not only the pesticide and high-TOC ignitable wastes prohibited in this rule, but other types of decharacterized wastes

(which are not yet prohibited but are scheduled to be addressed in Phase III) as well.

Most comments to the proposed rule requested independent consideration of Class I injection wells, because they believed that underground injection differs from other forms of **land disposal**, such as landfills and impoundments. Other comments questioned EPA's interpretation of the Third Third court decision and the **Agency**'s belief that treatment of these waste streams should be the preferred management approach for them. These commenters indicated that aggregation of waste streams meets the minimize threat standard and expressed their opinion that segregation of these wastes for treatment poses substantial risks to the environment and that underground injection is an inherently safer waste management practice. The **Agency** intends to consider all the above arguments (e.g., risks posed by wastes going to deep well injection) in the identification of alternatives for **land disposal** standards. The **Agency** will continue to investigate any and all information received concerning these comments, and intends to address **land disposal** standards for underground injection of characteristic wastes in a comprehensive manner in the Phase III rulemaking. Until these treatment standards become effective one year from the date of publication of this rule, they may continue to be injected into Class I injection wells without prior treatment.

B. Request for Comment on Petition From Chemical Manufacturer's Association Regarding Deep Well Injection of Ignitable and Corrosive Characteristic Wastes

The proposed rule solicited comments on a request from the Chemical Manufacturer's Association (CMA) that EPA develop separate treatment standards intended for those wastes disposed in Class I deep injection wells. CMA requested a separate set of treatment standards for ignitable and corrosive wastes managed by deep well injection that, in view of the unique circumstances of deep well injection, meet the statutory ``minimize threats'' standard. Many comments received by EPA urged the **Agency** to develop so-called UIC-specific treatment standards in light of this petition. However, EPA received virtually no technical information to support these comments.

Therefore, the **Agency** is not issuing a final response to CMA's request in today's rule. EPA continues to solicit information necessary to enable EPA to act on this petition in the future. These requests are documented in the rulemaking docket for today's rule. In particular, the **Agency** particularly requests data concerning waste volumes, waste transport, injection system integrity or the fate of disposed pollutants throughout the course of the injection procedure.

IX. Modifications to Hazardous Waste Recycling Regulations

A. Introduction

Today's rulemaking finalizes the proposed changes to the hazardous waste recycling regulations, thus slightly broadening the scope of an existing exclusion (and related variance). This modification of the regulatory framework will allow for environmentally beneficial recycling to occur without unnecessary regulatory consequences.

EPA wishes to note that the changes to the definition of solid waste being promulgated today are narrow in scope and will have minor impact. A more broad-ranged evaluation of the regulations applicable to

the recycling of hazardous waste is being conducted by EPA's Definition of Solid Waste Task Force. This Task Force has been administering a public dialogue process to examine the overall impacts of the RCRA program on recycling, and will consider broader changes to the definition of solid waste as part of that process.

B. Modification of the Existing ``Closed-loop'' Recycling Exclusion and Related Case-specific Variance

1. ``Closed-loop'' Recycling Exclusion and Related Variance

In the January 4, 1985 final rule, the **Agency** promulgated an exclusion from the definition of solid waste at Sec. 261.2(e)(1)(iii) for secondary materials that are recycled in a ``closed-loop,'' (i.e., returned to the original production process in which the material was generated (see preamble discussion at 50 FR 639)). To be considered such a ``closed-loop'' process, three conditions must be met. First, the secondary material must be returned to the original process without undergoing significant alteration or reprocessing (i.e., it must be returned without first being reclaimed. See 261.2(e)(3) and Table 1). Second, the production process to which the unreclaimed materials is returned must be a primary production process (i.e., a process that uses raw materials as the majority of its feedstock, as opposed to a secondary process that uses spent materials or scrap metal as the majority of its feedstock). And third, the secondary material must be returned as a feedstock to the original production process and must be recycled as part of that process (as opposed to an ancillary process such as degreasing). EPA believes that these conditions characterize a material that is part of an on-going production process, and as such, the management of the material should not be characterized as waste management (i.e., the material is not part of the waste management problem).

Today's action addresses the second condition--that the production process to which a secondary material is returned be a primary process. This condition was part of the original exclusion due to considerations regarding jurisdiction, as it was understood in 1985, rather than to an evaluation of the potential impacts on the environment from such ``closed-loop'' recycling involving secondary processes. This condition thus was established without a consideration of whether such secondary materials would be part of the waste management problem. By definition, a secondary process uses waste materials as its principal feedstock. The **Agency** therefore concluded that the process residue, which is returned to the original process as a substitute for feedstock that is itself waste, is no less a waste than the waste material originally introduced (see 50 FR 639). (The **Agency** notes that with few exceptions, this condition has no actual impact on the recycling of residues from secondary processes because such residues that exhibit a characteristic of hazardous waste (i.e., characteristic by-products and sludges) are likewise excluded from the definition of solid waste if reclaimed.)

Although the **Agency** continues to believe that the jurisdictional logic behind this condition is sound, the judicial opinions regarding RCRA jurisdiction allow more weight to be given to **environmental** considerations. API v. EPA (API), 906 F.2d at 740-41; AMC v. EPA (AMC II), 907 F.2d 1179, 1186 (D.C. Cir. 1990). Thus, EPA has reevaluated this condition of the exclusion from the definition of solid waste due to its impact on the recycling of residues from secondary processes, in particular secondary lead smelters, and has determined that the condition of a closed-loop involving only primary processes is not

legally compelled, and that this condition is less relevant as an **environmental** consideration, assuming that the secondary material is well-managed prior to reprocessing in the primary or secondary process that generated it.

Comments received on the **Agency**'s proposal to remove this condition from the exclusion were favorable. Although several commenters said that the **Agency** should go further in modifying the existing regulations to encourage the recycling of hazardous wastes, such an action is beyond the scope of this proceeding. Such further action could result from the efforts currently underway to reevaluate the regulations applicable to hazardous waste recycling (i.e., the Roundtable discussions undertaken by the Definition of Solid Waste Task Force). One commenter also urged the **Agency** to make regulatory modifications only as part of the Definition of Solid Waste Task Force. EPA does not view the salutary and relatively modest change to the rules promulgated here as undermining the Task Force effort, and so is adopting the amendment.

Thus, the **Agency** is today removing this condition (i.e., that the process be a primary production process) from the ``closed-loop'' recycling exclusion. By doing this, secondary materials that are recycled back into the secondary production process from which they were generated are excluded from the definition of solid waste.

Following the same reasoning, the **Agency** proposed and is today finalizing a modification to section 260.30(b), a related case-by-case variance for materials that are reclaimed prior to reuse in the original primary production process from which they were generated (see 50 FR 652 (January 4, 1985) for a discussion of the existing variance). This modification similarly expands the variance to make it available for materials that are returned to secondary processes, as well as those returned to primary processes.

2. Storage Prior to Recycling

At proposal, the **Agency** proposed to condition the ``closed-loop'' exclusion (and the related 260.30(b) variance) such that secondary materials recycled back into secondary processes from which they were generated would continue to be managed in an environmentally sound manner. The **Agency** proposed this condition to address concerns that, absent this condition, a listed waste that would otherwise be required to be managed in a protective manner (e.g., without direct placement on the **land**) could begin to be managed in an unprotective manner because, as an excluded secondary material, no regulatory requirements would apply. Storage of hazardous secondary materials on the **land** can be deemed to be a type of discarding (``part of the waste **disposal** problem'' in the words of the D.C. Circuit), and hence provide a basis for classifying the materials as solid and hazardous wastes. AMC II, 907 F.2d at 1187. The only comments received addressing this proposed condition asked for more clarification of what would be considered ``a protective manner.'' The **Agency** is promulgating the condition to the exclusion that such secondary materials be managed in a protective manner such that there is no placement on the **land**, that is no **land disposal** as defined in Sec. 3004(k). See Sec. 261.4(a)(10) and (11) where EPA has attached this same condition to comparable exclusions. Management that is designed to contain the material or otherwise prevent its release to the environment, such as in a containment building (see 40 CFR 264.1100) or tank, is permissible. The **Agency** believes that this condition will not require any changes in how these secondary materials are currently managed and will ensure that providing regulatory relief will not unintentionally increase risk to

human health and the environment.

Additional changes were proposed and are being promulgated in this rule in order to implement and be consistent with the changes in variances discussed above. Previously the Regional Administrator granted variances from classification as a solid waste in 40 CFR 260.30, 260.31, 260.32, and 260.33. Today's rule transfers this authority to grant variances from the Regional Administrator to the Administrator. The changes in Secs. 260.30 and 260.31 are necessary because such variances involve determining RCRA jurisdiction over secondary materials going to secondary processes. The other changes in authority to grant variances in Secs. 260.32 and 260.33 are being made in order to be consistent with the provisions of Secs. 260.30 and 260.31.

X. Compliance Monitoring and Notification

A. Compliance Monitoring

As proposed, the **Agency** is adopting an approach that will allow generators and facilities that manage organic toxicity characteristic (TC) wastes in systems other than those regulated under the Clean Water Act (CWA), those engaged in CWA-equivalent treatment prior to **land disposal**, and those injecting into Class I deep injection wells, to monitor or otherwise determine the presence of underlying hazardous constituents ``reasonably expected to be present'' in their waste. (See definition at 268.2(i).) This means that regulated entities do not have to ascertain the presence of all hazardous constituents for which EPA is promulgating a universal treatment standard. Generators may base this determination on their knowledge of the raw materials they use, the process they operate, and the potential reaction products of the process, or upon the results of a one-time analysis for the entire list of constituents at Sec. 268.48.

The **Agency** solicited comment on whether generators should be required to do some testing of organic TC wastes to determine what underlying hazardous constituents are present and whether they meet UTS. Furthermore, the **Agency** noted that generators who also treat (including generators who decharacterize their waste but do not treat for underlying hazardous constituents) are classified as treaters, and would therefore be required to do some analysis of their wastes pursuant to Sec. 268.7(b) and prepare a treater's certification pursuant to Sec. 268.9(d) (58 FR 48134). A few commenters believed that generators should have to test their organic TC wastes at least once. Most commenters on this issue, however, strongly opposed a generator testing requirement and said that generators should be allowed to use knowledge of their wastes to make such a determination. Based on these comments, and the **Agency**'s reluctance to require generator testing of characteristic wastes but not listed wastes, the **Agency** is not imposing a testing requirement on generators of organic TC wastes at this time.

The **Agency** believes, however, that certifications should identify which hazardous constituents may be present in the waste. This is necessary in order that there be some record that the waste indeed requires treatment of these constituents before it can be **land** disposed. As explained below, existing regulations already require mention of the presence of underlying hazardous constituents in some situations. EPA is slightly amending those regulations today to make the requirement uniform, as discussed below.

If a generator does not treat a prohibited characteristic waste,

then the generator must prepare the standard notification and certification required by Sec. 268.7(a)(1) (for wastes that have not been treated to meet the treatment standard) (see Sec. 268.9(d), first clause). These requirements explicitly require mention of underlying hazardous constituents (Sec. 268.7(a)(1)(ii)).

If a generator partially treats a waste, however, for example by decharacterizing it but not treating the underlying hazardous constituents, there is a slight gap in the existing rules. Those rules require that a one-time notification and certification be prepared (Sec. 268.9(d)) and that the certification ``must state the language found in 268.7(b)(5)'' (Sec. 268.9(d)(2)). The Sec. 268.7(b)(5) certifications, however, do not contemplate the possibility that wastes may require additional treatment for underlying hazardous constituents. To allow for this possibility, EPA is amending Sec. 268.9(d) to state that in the event underlying hazardous constituents in a decharacterized waste have not been fully treated, the certification shall so state. EPA is also adding the following new certification to Sec. 268.7(b)(5) to account for this circumstance:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous toxicity characteristic or the characteristics of ignitability and corrosivity. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

The **Agency** proposed, alternatively, that generators could be required to certify what underlying hazardous constituents are in the organic TC waste and whether they meet treatment standards, in a manner similar to the existing certification requirement for generators of wastes that meet the treatment standards as generated (see 40 CFR 268.7(a)(2)(ii)) (58 FR 48134). This suggestion was generally not supported by commenters, and EPA is not adopting this approach in this final rule. Before considering broader changes, EPA will see if the amended requirement in Sec. 268.9(d)(2)(i) discussed above is sufficient to create an adequate record.

B. LDR Notification

1. Constituents To Be Included on the LDR Notification

EPA solicited comment on how to limit the underlying hazardous constituents that must be monitored in organic TC wastes, and consequently reported on the LDR notification. Commenters on this issue said that the regulated community should only be required to address those constituents which are in the organic TC wastes as generated, prior to any subsequent mixing with other wastes. This is the approach being adopted in this rule. Such an approach is identical to the approach adopted in the May 24, 1993 Interim Final Rule (58 FR 29873) and is supported by commenters.

As a simplifying measure, EPA is also slightly amending the language of Sec. 268.7(a)(1)(ii) and Sec. 268.7(b)(4)(ii). The language in these paragraphs required that the hazardous constituents in F001-F005 spent solvents, F039, wastes subject to the California list provisions of Sec. 268.32 or RCRA section 3004(d), and underlying hazardous constituents in characteristic wastes be listed on the LDR

notification. This language is being changed so that if all the hazardous constituents are present in the waste (and thus the generator/treater will be treating all the constituents), then there is no longer a need to list all the constituents on the notification form. If, however, a subset of constituents are present in the waste (and thus the generator/treater will only be treating these constituents), the constituents in the waste must continue to be listed on the notification form.

2. Management in Subtitle C-Regulated Facilities

The **Agency** has information that many of the organic TC wastes that are not managed in CWA, or SDWA systems are being treated in hazardous waste management units (primarily incinerators) subject to RCRA subtitle C. In such a case, the notification, certification, and recordkeeping requirements set out in 40 CFR 268.7 apply (which includes identification of the underlying hazardous constituents reasonably expected to be present in the organic TC waste). For organic TC wastes, once the waste is no longer hazardous, however, further recordkeeping and documentation requirements are set out in 40 CFR 268.9. Section 268.9 requires that the generator or treater (including generators who treat, see 51 FR 40598, November 7, 1986) prepare a one-time notification which is sent to the EPA Region or authorized state and also kept in the generator's or treater's files. Treaters must certify that they are familiar with the treatment process used at their facility and that the process can successfully treat the waste to meet the treatment standards without impermissible dilution. See Sec. 268.7(b)(5), which applies to persons who treat formerly characteristic wastes (see existing Sec. 268.9(d)(2)). The **Agency** believes that, normally, at least some waste analysis is needed to make a good faith showing for meeting the treatment standards, given the number of hazardous constituents that could be covered by those standards.

3. Potential Management of Decharacterized Wastes at a Subtitle D Waste Management Facility

The **Agency** solicited information on certain potential waste management practices for decharacterized TC wastes to help determine whether new notification requirements are needed. In particular, EPA requested whether generators or treaters, after removing the characteristic, send the decharacterized TC waste off-site to a Subtitle D (nonhazardous waste) treatment facility for further treatment to address the underlying hazardous constituents (58 FR 48134). The **Agency** solicited comment on potential enforcement concerns if there is not a federal requirement that generators notify Subtitle D treatment and **disposal** facilities receiving decharacterized wastes.

One commenter stated that the generator of the waste should be made responsible through an EPA mandate to assure that treatment of underlying hazardous constituents at a subtitle D facility meets LDR treatment standards. Other commenters thought that the generator should notify the subtitle D facility of the underlying hazardous constituents, but they did not specify that a mandated notification should be required. However, other commenters said that existing arrangements between generators and off-site treatment facilities would suffice because EPA already requires generators to notify the EPA Regional office or Authorized State when it is sending decharacterized waste to a subtitle D facility under 40 CFR 268.9. One commenter pointed to the contract between the generator and the subtitle D facility as the mechanism by which generators would notify the treatment facility of what underlying hazardous constituents are in the

waste.

Only one commenter offered information on the extent that the practice of sending decharacterized wastes to a nonhazardous waste treater for treatment of underlying hazardous constituents is actually occurring. This commenter asked generators who send waste to their facilities how often they remove the characteristic prior to sending the decharacterized waste to a nonhazardous waste treatment facility for treatment of underlying hazardous constituents. They found that roughly 2-3 percent of the wastes from their survey group were decharacterized D001 and D002 wastes being sent off-site for further treatment at a nonhazardous waste treatment facility that employs CWA wastewater treatment or stabilization of underlying hazardous constituents. The commenter added, however, that there will be less decharacterized TC wastes going off-site for treatment of underlying hazardous constituents because these wastes require more sophisticated treatment systems to remove the characteristic than do the D001 and D002 wastes.

Based on this information, the **Agency** has decided, for the time being, not to impose new notification requirements in today's final rule (a new certification is being added in this rule to Sec. 268.7(b)(5)(iv) as described above). The **Agency** continues to believe that very little decharacterized TC wastes will be sent to a subtitle D facility for treatment of underlying hazardous constituents. If such a practice should occur, generators and Subtitle D facilities have substantial incentives (such as CERCLA liability) to exchange and verify compliance with treatment standards for underlying hazardous constituents independent of federal notification requirements.

If, however, information becomes available that generators are sending substantial amounts of decharacterized TC wastes off site to subtitle D facilities for treatment of underlying hazardous constituents, or that there is a paperwork loophole that existing arrangements between generators and treatment facilities do not address, today's approach will be revisited to determine whether such tracking is necessary to assure ``cradle to grave'' tracking of wastes and better informing subtitle D treatment and **disposal** companies of the requirements to which these decharacterized wastes remain subject.

XI. Implementation of the Final Rule

This section presents flowcharts of what EPA expects will be the most frequent set of decisions that must be made to implement the regulations for TC organic wastes (including soils), mixtures of TC organic wastes with listed wastes, and mixtures of TC organic wastes with ignitable or corrosive wastes. A flowchart describing the decisions necessary to comply with treatment standards for Phase II newly listed wastes is also included. Additionally, a flowchart is presented that outlines the decisions necessary to comply with treatment standards for debris contaminated with Phase II wastes. And, as a reminder that TC metals are not regulated by today's rule, a flowchart is also included of the decisions that must be made to determine if a characteristic metal waste is subject to the LDRs at this time based on regulation of Extraction Procedure (EP) metals in the Third Third rule in 1990, or is not yet subject to LDR regulation because TC metals will not be addressed until a later rulemaking. These flowcharts present only the major decisions that must be made; a thorough reading of the regulations will be necessary to fully implement the LDRs. There are requirements for specific waste

management scenarios that are not included in these flowcharts because they would have become too complex to be generally useful.

BILLING CODE 6560-50-P

<GRAPHIC><TIFF>TR19SE94.000

<GRAPHIC><TIF1>TR19SE94.001

<GRAPHIC><TIF2>TR19SE94.002

<GRAPHIC><TIF3>TR19SE94.003

<GRAPHIC><TIF4>TR19SE94.004

BILLING CODE 6560-50-C

XII. Guidance to Applicants for Treatability Variances for As-Generated Wastes

The **Agency**'s existing regulations provide for variances from treatment standards if a waste cannot be treated to the specified treatment standard or if the treatment technology on which the standard is based is inappropriate for the waste. Section 268.44 (a). For guidance on treatability variances for soil, including site-specific, non-rulemaking variances, see section I.E. ``Treatment Standards for Hazardous Soil'' in this rule. To be granted a treatability variance, a petitioner must show that ``because the physical or chemical properties of the waste differs significantly from wastes analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods.'' Id. A demonstration that the waste cannot be successfully treated can be made ``by showing that attempts to treat the waste by available technologies were not successful, or through appropriate analyses of the waste which demonstrate that the waste cannot be treated to the specified levels.'' 51 FR at 40606 (Nov. 7, 1986). EPA evaluates treatability variance requests by ``first look[ing] at the design and operation of the treatment system being used. If EPA determines that the technology and operation are consistent with BDAT, the **Agency** will evaluate the waste to determine if the waste matrix and/or physical parameters are such [that] the BDAT properly reflects treatment of the waste.'' Id. The guidance set out below applies exclusively to treatability variances (for as-generated wastes) evaluated by EPA headquarters and processed pursuant to rulemaking procedures.

In order to settle a lawsuit challenging the **Agency**'s grant of treatability variances to two particular facilities, 56 FR 12351 (March 25, 1991), the **Agency** has agreed to provide some clarifying guidance regarding treatability variances, which essentially restates existing **Agency** practice and does not call into question the validity of any treatability variance the **Agency** has issued. First, as stated in 1986, to support an application for a treatability variance pursuant to Sec. 268.44(a) for process waste, the applicant should collect and

analyze a sufficient number of samples of the untreated waste to accurately characterize it. 51 FR at 40606 (Nov. 7, 1986). In general, the **Agency** would expect the applicant to collect and analyze four samples of its untreated and treated waste. (This corresponds to the minimum number of samples applicants for delisting pursuant to 260.20 must submit.) However, the exact number of samples would be determined by EPA as part of the **Agency**'s evaluation of each treatability variance application (and so could be less than four samples in a particular case).

Second, the applicant should normally investigate and report on demonstrated and reasonably available pretreatment steps that could significantly improve the effectiveness of the treatment the applicant is conducting. 51 FR at 40606. What the **Agency** has in mind is that applicants not overlook potentially simple types of pretreatment to remove an interfering parameter; for example, settling to reduce excess total dissolved solids. The **Agency** does not intend that applicants perform an extensive or expansive engineering analysis. Nor does the **Agency** intend that applicants be required to utilize treatment systems significantly different from those the **Agency** evaluated when promulgating the treatment standard. Rather, the **Agency** wishes to assure that applicants not overlook some relatively obvious means of removing interferences. Again, in particular cases, it may not make sense to conduct this type of analysis, in which case no such evaluation would be necessary.

Third, the applicant should make a good faith effort to explain why the treatment standard is not achievable for its waste. 51 FR at 40606. This good faith effort is to be based on the applicant's knowledge of its process, and is not to entail additional expense (such as a consultant's engineering analysis). As a general matter, the **Agency** simply believes that some thought should be given (and documented) as to what might be causing the problem.

Finally, EPA's general policy has been and will be to publish a notice of its proposed decision on applications for treatability variances in the Federal Register, Sec. 261.44 (e), and to allow a minimum of 30 days for the public to comment on the proposal. 51 FR 40607. All applicants will have the opportunity to comment on the reasonableness of applying one or more of these foregoing statements of guidance to their applications, and, as a result, EPA may decide not to apply them.

EPA notes further that there have been only a handful (fewer than 10) of applications for treatability variances since implementation of the **land** ban (aside from applications relating to contaminated media and debris), of which EPA has granted three. In the applications relating to electroplating wastes cited earlier, the **Agency** inferred that something about the applicants' wastes was making the wastes more difficult to treat than the waste EPA evaluated when promulgating the applicable treatment standard. This inference was based on the fact that the applicants were treating the waste with properly designed and operated BDAT treatment technology, namely the same type of treatment technology on which the treatment standard is based. 56 FR at 12352. EPA emphasizes that this type of inference was, and remains, permissible.

XIII. Clarifications and Corrections to Previous Rules

A. Corrections to the Interim Final Rule Establishing **Land Disposal** Restrictions for Certain Ignitable and Corrosive Wastes

On May 24, 1993, the EPA published an interim final rule establishing treatment standards for ignitable and corrosive characteristic wastes except those disposed in facilities regulated under the Clean Water Act (CWA), or Class I injection wells subject to the Safe Drinking Water Act, or zero-discharge facilities engaged in CWA-equivalent treatment. In today's rule, the **Agency** is clarifying that the provisions of the interim final rule remain in effect unless and until they are superseded in future LDR rules. The **Agency** does not plan to issue a final rule at this time; however, it is using the comments received on the interim final rule in developing future rules concerning the portions of the Third Third **Land Disposal** Restrictions Rule which were remanded by the D.C. Circuit (for discussion of the court ruling, see 58 FR 29861).

Among other things, the interim final rule established treatment standards for the underlying hazardous constituents reasonably expected to be present in the affected wastes at the point of generation. These treatment standards were the concentration levels for the constituents found in F039 (multisource leachate) wastewaters and nonwastewaters. The **Agency** is clarifying here that the universal treatment standards (UTS) established today supersede the F039 standards. Therefore, underlying hazardous constituents in the ignitable and corrosive wastes covered by the interim final rule must meet the 40 CFR 268.48, Table UTS--Universal Treatment Standards, levels before they can be **land** disposed. This change is being made simply so that the references to treatment standards for underlying hazardous constituents in ignitable and corrosive wastes in the interim final rule will be the same as those established for organic TC wastes in today's rule.

Also in the interim final rule, the **Agency** promulgated requirements to address a concern raised by the court about the potential for volatile organic constituent (VOC) emissions to create violent reactions during the dilution of ignitable and reactive wastes (see 58 FR 29873). The regulatory language in Secs. 264.1(g)(6) and 265.1(c)(10), however, inadvertently promulgated requirements for ignitable (D001) wastes and corrosive (D002) wastes. These sections are being corrected in today's rule to indicate, rightly, that the requirements apply to ignitable (D001) and reactive (D003) wastes.

B. Corrections to the Phase I Rule Establishing **Land Disposal** Restrictions for Newly Listed Wastes and Hazardous Debris

Today's rule clarifies several issues from the final rule establishing **Land Disposal** Restrictions for Newly Listed Wastes and Hazardous Debris (57 FR 37194, August 18, 1992).

The first issue being corrected responds to questions over which treatment standards can be used for treating hazardous debris. It was stated clearly in the preamble to the August 18, 1992 rule that debris must be treated by either using one of the specified technologies in Sec. 268.45, or, as an alternative, by meeting LDRs for the specific prohibited listed or characteristic waste with which the debris is contaminated (57 FR 37221). Subsequent comment from the regulated community indicate that this fact was not made completely clear in the regulatory language of that rule. Certain commenters suggested that a revision of the paperwork requirements found in Sec. 268.7 indicating that generators have a choice as to which treatment standards they may use would help alleviate the confusion.

EPA is, therefore, revising Sec. 268.7(a)(1)(iv) and

Sec. 268.7(a)(3)(v) to reflect that it is not mandatory to meet the alternative debris standards in Sec. 268.45, and that generators have the option to meet the treatment standards for the as-generated wastes contaminating the debris. It should be noted that the paperwork requirements for meeting treatment standards for as-generated wastes contaminating debris are the same as those for as-generated wastes. A new paragraph is being added to the regulatory language to indicate this.

In addition, consistent with EPA's effort to simplify LDR paperwork requirements, EPA is shortening the notification statement accompanying prohibited debris. In Sec. 268.7(a)(1)(iv) and Sec. 268.7(a)(3)(v), as promulgated on August 18, 1992, the statement ``This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45'' was required to be placed on the LDR notification, after listing the contaminants subject to treatment. EPA is revising that particular statement today so that merely referencing Sec. 268.45 after listing the contaminants subject to treatment is all that must be included on the LDR notification.

The second issue the **Agency** wishes to clarify and correct today concerns the language in Sec. 268.45(b)(2) of the August 18, 1992 Federal Register. This section states that the contaminants subject to the alternative treatment standards for hazardous debris, which were promulgated in the August 18, 1992 rule, are those constituents for which BDAT standards are established in Secs. 268.41 and 268.43. The **Agency** has received several letters asking why section 268.42 was not included in that language. Section 268.42 lists those wastes for which EPA established a treatment method as the standard. The reason section 268.42 was not included in the language in Sec. 268.45(b)(2) is that only the wastes themselves, and not waste constituents, are listed in Sec. 268.42.

The **Agency** fully intends, however, that debris contaminated with those wastes be subject to the alternate debris standards. Therefore, Sec. 268.45(b)(2) is being clarified today to read ``The contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which BDAT standards are established for the wastes under Secs. 268.41, 268.42, and 268.43.''

The third issue the **Agency** is clarifying concerns exactly when surface impoundments which are newly subject to RCRA section 3005(j)(1) are expected to be in compliance with the requirements of Sec. 265.221 (a), (c), and (d). As is stated in Sec. 268.5(h)(2)(v) (as promulgated at 57 FR 37270, August 18, 1992), such surface impoundments must be in compliance within 48 months after the promulgation of additional listings or characteristics for the identification of hazardous waste. This is the maximum time allowed by RCRA section 3005(j)(6).

EPA mistakenly stated in two separate places in the preamble to the August 18, 1992 rule that the compliance date was 48 months from the effective date of a waste identification or listing (57 FR 37220). The **Agency** wants to make it clear that the compliance date which was promulgated in the regulations, and which is mandated by RCRA 3005(j)(6), is correct (57 FR 37270). These surface impoundments are thus required to be in compliance 48 months from the promulgation date of a new identification or listing. Sec. 268.5(h)(2)(v).

The promulgation date is the date the Administrator signs the rule which lists the new waste(s). The effective date is the date the new waste must come into compliance with hazardous waste management requirements, and may be six months from the promulgation date. The

Agency believes that 48 months to retrofit a surface impoundment is a reasonable amount of time, and believes that effort should begin as soon as the listing of a waste is published in the Federal Register; there is no reason to wait to begin retrofitting until a new listing or identification actually becomes effective. In any case, section 3005(j)(6) allows no other option.

Finally, in Sec. 268.38(a) of this rule, EPA is prohibiting debris that is contaminated with the wastes that were prohibited in the Phase I rule. EPA inadvertently omitted to include such contaminated debris in the August 18, 1992 rule.

C. Amendment of Boiler and Industrial Furnace Rules for Certain Mercury-Containing Wastes

1. The Proposal

The **Agency** proposed a technical clarification to the Boiler and Industrial Furnace (BIF) rules on July 21, 1994 (59 FR 31964), that would exempt certain mercury-bearing hazardous wastes generated by the Chlorine Industry from the provisions of 266.100(c). Under this provision, owners and operators of smelting, melting, and refining furnaces that process hazardous wastes solely for metal recovery are conditionally exempt from regulation. To be exempt, the owner or operator must comply with certain notification, sampling and analysis, and recordkeeping provisions (see 266.100(c)(1)(i)). In addition, as indicated above, the waste must be processed solely for metal recovery; to be processed solely for metal recovery, the waste can not have a heating value greater than 5000 BTU/lb or have a total concentration of organic compounds listed in Appendix VIII of Part 261 greater than 500 ppm by weight. Wastes that have a heating value greater than 5000 BTU/lb or have a total concentration of hazardous organic compounds exceeding 500 ppm are considered by EPA to be burned for energy recovery and destruction, respectively and, thus, are subject to the BIF rules.

The **Agency** generally believes that most wastes that meet these criteria are appropriately subject to the BIF regulations. However, in certain instances, wastes that are burned for legitimate metal recovery can also exceed the 5000 BTU/lb and 500 ppm organic compound limits, in which case standards other than those in the BIF rules are likely more appropriate. (See 59 FR at 29776 (June 9, 1994) proposing CAA MACT standards for secondary lead smelters and indicating why RCRA air emission standards are not needed.) In fact, the **Agency** has specified a set of lead and nickel-bearing hazardous wastes that exceed the energy recovery or destruction limits, but are still conditionally exempt from the BIF rules if these wastes are legitimately burned for metal recovery (see 266.100(c)(3) and Appendices XI and XII to Part 266).

In the proposed technical clarification, the **Agency** defined some additional hazardous wastes--specifically, those generated by the Chlorine Industry and which are suitable for mercury recovery--that could be recovered in mercury retorting units without those units being subject to the BIF rules (provided the owners or operators of these units meet certain conditions). The **Agency** proposed this change based on the fact that these wastes contain high levels of mercury (from hundreds of parts per million to as much as 45%) and, thus are appropriate for recovery; in addition, the retort units in which these wastes are processed must be subject to emissions controls under the Clean Air Act. See Sec. 268.42 (treatment standards for high mercury subcategory wastes that require retorting units to be subject to the

CAA or comparable standards for control of mercury). It should also be noted that the Chlorine Institute, as part of their comments on the Phase II LDR proposal, requested that the **Agency** exempt these wastes from the BIFs rules. The remainder of this section of the preamble discusses the comments received and our response to those comments.

2. Comments and the Final Rule

The **Agency** received comments from five parties, Borden Chemical and Plastics (BCP), Bethlehem Apparatus (BA), PPG Industries (PPG), Olin Chemicals (Olin), and the Chlorine Institute (CI). Their collective comments and the **Agency**'s response follows.

The proposal limited the conditional exemption to certain mercury-bearing hazardous wastes generated by the Chlorine Institute. BCP, BA, and CI argued that the proposed change was too narrow, and that other mercury recovery units may also process combustible materials for legitimate metals recovery. Commenters thus recommended that the exemption should apply to all processors of mercury wastes. The **Agency** generally agrees with this position. Upon reevaluation, EPA believes there is no need to differentiate between units in the Chlorine Industry and similar units outside the Chlorine Industry. Therefore, the **Agency** is promulgating a rule which includes units operated by manufacturers and users of mercury or mercury products.

BCP addressed a second option for broadening the exemption so that devices other than those operated in the Chlorine Industry could process combustible wastes for legitimate metals recovery. BCP suggested EPA define mercury as a precious metal and allow processors to burn mercury laden hazardous wastes subject to the **Agency**'s BIF precious metals exemption (see Sec. 266.100(f)). EPA does not agree with BCP's contention that mercury is a precious metal. Mercury is not considered a precious metal by EPA or other Agencies or organizations. Precious metals are defined by the Bureau of Mines to include gold, silver, platinum, and palladium (Mineral Commodity Summary, 1993), and by EPA at 40 CFR 266.70 to include gold, silver, platinum, palladium, iridium, osmium, rhodium, and ruthenium, all metals whose value assures adequate control. Therefore, EPA rejects the approach suggested by BCP.

BCP, PPG, Olin, and CI also commented that the list of materials in the proposed technical clarification should be broadened to include the following additional items:

Sweepings
Respiratory Cartridge Filters
Cleanup Articles
Plastic Bags and Other Contaminated Containers
Laboratory and Process Control Samples
Wastewater Treatment Plant Sludge and Filter Cake
Mercury cell process sump and tank sludges
Mercury cell process solids
K106
Recoverable levels of mercury contained in soil

Upon evaluation, the **Agency** agrees that of these materials are appropriate for an exemption as long as they have recoverable levels of mercury. However, many mercury units, e.g., retorters, are not combustion devices and organic emissions may not be controlled in these units. Therefore, the **Agency** is concerned that materials with recoverable levels of mercury, but laden with hazardous organics, may not provide adequate destruction of the hazardous organics in exempt retorters, and thus, may not be protective of human health and the

environment. For that reason, the **Agency** is promulgating a broadened list of materials but is limiting the exemption to these wastes specifically identified and that contain less than 500 ppm of part 261, appendix VIII organics.

Finally, there appears to be some confusion by the Chlorine Industry about their status under the BIF rules (collectively, those regulations set forth in 40 CFR Part 266, Subpart H). CI, PPG, and Olin argued that they are not subject to BIF because they do not ``burn'' or ``combust'' anything and the BIF rules are written for combustion devices. The **Agency** agrees that many mercury recovery devices do not ``burn'' or ``combust'' by design; however, these units are Industrial Furnaces as defined in Sec. 260.10 and, thus, are subject to the appropriate BIF rules. In particular, Sec. 260.10 defines Industrial Furnaces as ``devices * * * that use thermal treatment to accomplish recovery of materials'' and that these include ``refining furnaces''. [Emphasis added.] Mercury recovery units raise the temperature of the waste to aid in the recovery and refining of mercury. Therefore, they are refining furnaces. In addition, Sec. 266.100(c) states that ``smelting, melting and refining furnaces * * * that process hazardous waste solely for metals recovery are conditionally exempt * * *.'' [Emphasis added.] This language includes all refining furnaces that process hazardous waste, irrespective of whether the process to achieve this end is combustion or not. Therefore, mercury recovery devices are BIFs, and come within the terms of Sec. 266.100(c). EPA is using the term ``mercury recovery furnace'' in today's amended rule to further clarify this point. (It should be noted that compliance with the BIF rules for these devices are not rigorous. It requires sending a one time written notification to the regional Director and following the provisions set forth in Sec. 266.100(c).)

Mercury recovery operators should note that the changes discussed in this section of the preamble only apply to units which have a metals recovery exemption. Units which process these wastes without the proper exemption are in violation of the BIF rules and subject to enforcement action.

D. Amendment of Rules on Use Constituting **Disposal**

In 1985, EPA created a separate regulatory regime for hazardous wastes that are recycled by being used in a manner constituting **disposal**. Part 266 subpart C.\1\ These rules provide, in essence, that the wastes can be so used without being subject to the RCRA facility standards if the waste-derived product (i.e. the hazardous wastes that is being used by being applied to the **land** (i.e. used in a manner constituting **disposal**)) has been ``produced for the general public's use,'' has undergone a chemical change so as to be inseparable by physical means, and if it meets the applicable LDR treatment standard. See Sec. 266.20(b).

\1\These rules apply, of course, only if the recycling is legitimate, and not a form of surrogate **disposal**. Sec. 266.20(a) applies only to ``recyclable materials'', which are hazardous wastes being recycled. Sec. 261.6(a)(1). This does not include wastes that are abandoned by being disposed of. Sec. 261.2(b)(1).

Hazardous wastes used in a manner constituting **disposal** that do not satisfy these conditions are subject to all of the subtitle C standards. See Sec. 266.23(a). In promulgating this provision in 1985, however, the **Agency** neglected to mention the then newly-enacted **land disposal** restriction requirements as among the standards to which the wastes were subject. The **Agency** obviously was not intending to amend the statute, and cannot override an express statutory requirement by regulation. The **Agency** only recently noticed this omission, and is using this opportunity to correct the error. Consequently, the Part 268 requirements will be added to the list of requirements in Sec. 266.23(a) for those hazardous wastes not satisfying the conditions of Sec. 266.20(b). This amendment is effective 90 days after publication of today's rule.

XIV. Capacity Determinations

This section presents the data sources, methodology, and results of EPA's capacity analysis for today's rule. Section A summarizes the results of the capacity analysis for the wastes covered by this rule; Section B summarizes the analysis of available capacity; Section C summarizes the capacity analysis for those newly identified and listed wastes that are **land** disposed in units other than deep injection wells; Section D summarizes the capacity analysis for wastes mixed with radioactive contaminants; Section E summarizes the results of the capacity analysis for high TOC ignitable and TC pesticide wastes and newly listed and identified wastes injected into Class I deep wells; and Section F presents the results of the capacity analysis for hazardous soil and debris contaminated with the newly listed and identified wastes covered in this rule.

In general, EPA's capacity analysis methodologies focus on the amount of waste currently **land** disposed that will require alternative commercial treatment as a result of the LDRs. **Land**-disposed wastes that do not require alternative commercial treatment (e.g., those that are currently treated using an appropriate treatment technology or that will be treated using an alternative on-site treatment system) are excluded from the quantity estimates. In addition, wastes managed in CWA, SDWA, CWA-equivalent systems are not included in this rule and will be addressed in an upcoming rulemaking.

EPA's decisions on whether to grant a national capacity variance are based on the demand for commercial treatment or recovery technologies. Consequently, the methodology focuses on deriving estimates of the quantity of wastes that will require commercial treatment as a result of the LDRs; quantities of waste that will be treated on-site or by facilities owned by the same company as the generator are omitted from the required commercial capacity estimates.

The major capacity information collection initiative for this rule was an EPA survey of all **land disposal** facilities that manage newly identified TC organic wastes (including TC-contaminated soil and debris) in **land**-based units (TC Survey). The survey, conducted in the spring of 1992, is a census of approximately 140 facilities. EPA identified the universe primarily based on those facilities that had submitted permit modifications or received interim status for managing these wastes. For each facility, EPA requested waste-stream specific data on newly identified TC organic wastes and information on on-site **land disposal** units and treatment and recovery systems.

EPA developed a data set of the information on the TC Survey

results. Specifically, the data set contains information on the quantities of newly-identified organic TC wastes that will require commercial treatment capacity as a result of the LDRs. The data collected and the survey used for the required capacity estimates are part of the docket for today's final rule.

A. Capacity Analysis Results Summary

For the organic TC wastes (D018-D043), EPA estimates that 220,000 tons of newly identified organic TC sludges and solids will require alternative commercial treatment as a result of today's final rule.

EPA estimates that much smaller quantities of the other listed wastes included in today's rule will require alternative commercial treatment. Fewer than 100 tons of chlorinated toluene (K149-K151) nonwastewaters are currently being **land** disposed and will require alternative treatment due to the LDRs. Approximately 4,600 tons of coke by-product (K141-K145, K147 and K148) nonwastewaters are currently being **land** disposed. However, comments to EPA indicate that the majority of the nonwastewaters are recycled or used for energy recovery and, therefore, alternative treatment may not be required. No K141-K145, K147 and K148 wastewaters are currently being **land** disposed. No K149-K151 wastewaters are currently being **land** disposed.

The quantities of radioactive wastes mixed with wastes included in today's final rule and currently being **land** disposed are generated primarily by the U.S. Department of Energy (DOE). EPA estimates that 1,300 m\3\ of high-level waste, 380 m\3\ of mixed transuranic waste, and 1,100 m\3\ of mixed low-level waste containing wastes covered in today's rule will be generated annually by DOE. These estimates exclude mixed wastes currently in storage, **environmental** restoration wastes, and soil and debris. DOE currently faces treatment capacity shortfalls for some high-level wastes and for all projected mixed transuranic waste generation. In addition, although the annual DOE treatment capacity for mixed low-level wastes exceeds the estimated annual generation, most of this capacity is limited to treatment of wastewaters with less than one percent total suspended solids, and is not readily adaptable for other waste forms. Consequently, DOE also faces a treatment capacity shortfall for mixed low-level nonwastewaters. Furthermore, DOE has indicated that it will generally give treatment priority to mixed wastes that are already restricted under previous LDR rules.

With respect to certain wastes being injected into deep wells, EPA has very limited information that differentiates high TOC D001 ignitable wastes from low TOC D001 ignitable wastes, particularly with reference to the type of Class I injection well (i.e., nonhazardous versus hazardous) the wastes are ultimately disposed into. The information the **Agency** does have indicates that both D001 ignitable wastes and D012-D017 TC pesticide wastes are deep well injected into Class I hazardous wells with no-migration exemptions. However, several commenters to the proposed rule, and other industries with Class I injection wells, indicated that it would be extremely difficult to identify, segregate, treat, and/or arrange for **disposal** of these waste streams in a short time frame. Consequently, EPA is granting these wastes a one-year national capacity variance.

The **Agency** also estimates that up to 120,000 tons of hazardous soil and 34,000 tons of hazardous debris contaminated with the newly identified organic TC wastes are expected to require alternative commercial treatment.

Table 1 lists each waste code for which EPA is promulgating LDR standards today. For each code, this table indicates whether EPA is granting a national capacity variance for **land**-disposed wastes. As indicated, EPA is not granting a two-year national capacity variance for the newly identified organic TC wastes, including soil and debris, nor for the listed wastes covered under this rule. Rather, EPA is granting a three-month variance. (This extension does not apply to wastes with a specified longer national capacity variance.) EPA is delaying the effective date because the **Agency** realizes that even where data indicate that sufficient treatment capacity exists, such capacity may not be immediately available. Additional time may be required to determine what compliance entails, redesign tracking documents, possibly adjust facility operations, and possibly segregate waste streams. EPA believes these legitimate delays can be encompassed within a short-term capacity variance because the ability to get wastes to the treatment capacity in a lawful manner is an inherent part of assessing available capacity. However, the **Agency** is granting a two-year national capacity variance for mixed radioactive wastes (i.e., radioactive wastes mixed with newly identified TC organic constituents D018-D043), including soil and debris contaminated with mixed radioactive wastes.

EPA also is granting a one-year national capacity variance to allow the Class I injection facilities an appropriate lead time to identify and then manage their high TOC D001 and D012-D017 waste streams by developing practical and sound treatment and/or **disposal** options and ultimately to come into compliance with today's rule.

Table 1.--Capacity Variances for Newly Listed and Identified Wastes\1\

Waste type	Variance for surface-disposed wastes	Variance for deep well-disposed wastes
High TOC D001 Wastes	No	One year
D012-D017 Wastes\2\	No	One year
D018-D043 Nonwastewaters	No	N/A
K141-K145 Wastes	No	No
K147-K148 Wastes	No	No
K149-K151 Wastes	No	No
Soil (Phase II Wastes)	No	N/A
Debris (Phase II Wastes)	No	N/A
Mixed Radioactive	Two years	N/A
Mixed Radioactive Soil and Debris (with Phase II Wastes).	Two years	N/A

N/A=Not applicable.

\1\EPA is granting a three month national capacity variance for all the newly identified and listed wastes covered in this rule to handle logistical problems associated with complying with the new standards.

\2\Newly identified TC wastes that were not previously hazardous by the old EP Leaching Procedure.

B. Analysis of Available Capacity

The analysis of commercial capacity for newly identified and listed wastes is based primarily on data received in voluntary data submissions. These data include estimates of available capacity at commercial combustion facilities provided by the Hazardous Waste Treatment Council (HWTC) on incinerators and the Cement Kiln Recycling Coalition (CKRC) on cement kilns that burn hazardous wastes. Capacity for other conventional treatment processes (e.g., stabilization) is based on the 1990 TSDR Survey Capacity Data Set, which contains results from the National Survey of Hazardous Waste Treatment, Storage, **Disposal** and Recycling Survey (the TSDR Survey), and required capacity information from prior LDR rules.

Combustion Capacity. Combustion capacity for liquid hazardous wastes has historically been more readily available than capacity for sludges and solids. EPA estimates commercial combustion capacity for TC organic liquids to be about 1,267,000 tons per year. Commercial capacity for combustion of sludges and solids is available at both incinerators and industrial furnaces (primarily cement kilns that are authorized to burn hazardous wastes as fuel).

Cement kiln capacity for hazardous waste is limited by air emission limits (e.g., boiler and industrial furnace (BIF) limits under 40 CFR 266 subpart H), feed system limitations (e.g., particle size and viscosity limits), and product (i.e., cement clinker) quality considerations. For instance, cement quality considerations may require that wastes burned in cement kilns have a heating value of at least 5,000 BTU/lb to ensure adequate temperatures in the kiln. (Comments received by EPA, however, indicate that some kilns accept wastes below this heating value.) Incineration capacity is also limited by air emission limits, other permit limits (such as heat release limits), and feed system limits. EPA has taken these limitations into account in its estimates of available commercial combustion capacity.

Information available to EPA indicates that approximately 438,000 tons/year of commercial combustion capacity are available for newly identified TC organic sludges and solids, including soil and debris.\2\ EPA primarily derived this estimate primarily from survey data compiled by the Hazardous Waste Treatment Council (HWTC) and Cement Kiln Recycling Coalition (CKRC). These surveys contained detailed information on the amount and types of waste burned at each commercial facility in 1992, and the maximum amount of waste that could practically be burned in light of technical, operational, and regulatory constraints. In deriving this estimate, EPA first reviewed each survey response to confirm that the information provided was based on technically valid assumptions. To be conservative in its national estimate, EPA only included facilities and units that are presently capable of operating at or near full capacity under current permit and operational constraints. EPA then derived a national baseline estimate of available capacity by subtracting the amount of waste (hazardous and nonhazardous) burned in 1992 from the maximum practical capacity at each facility. Several cement kilns that burn hazardous waste were not included in the CKRC survey results. For these facilities, EPA obtained maximum practical capacity estimates from other sources (e.g., past data submittals or general trade literature), and derived available capacity estimates by assuming that these kilns are utilized at the average rate of those included in the CKRC survey. EPA's methodology for deriving its baseline capacity estimate is described in greater detail in the capacity background document for today's rule.

\2\This estimate includes solids and nonpumpable sludges, but excludes pumpable sludges. Pumpable sludge capacity in general is grouped with liquid capacity because of its limitations in particle size, solids content, and viscosity, and because pumpable sludges are often fed through the same feed ports that are used for liquids.

Once EPA obtained its baseline available commercial combustion capacity estimate, it estimated available capacity for wastes affected by today's rule by subtracting required capacity for routinely generated F037 and F038 (69,000 tons/year) from its baseline estimate. This adjustment was needed because these wastes were not regulated during most of the 1992 base year (refer to 57 FR 37194, August 18, 1992). EPA did not adjust its capacity estimate to account for one-time generation of F037 and F038 because the **Agency** understands that these wastes were generally removed prior to the June 1994 effective date of the LDR standards or are being left in place when the surface impoundments that contain them are being closed.

EPA's estimate of available capacity takes into account capacity that will be required for Phase I wastes that were granted a national capacity variance, ignitable and corrosive wastes whose treatment standards were vacated (58 FR 29860, May 24, 1993), waste characteristics that affect the ability for a particular facility(s) to treat the wastes, and other factors that may limit capacity.

EPA is also considering the capacity effects of recent court decisions regarding the regulation of hazardous constituents other than those for which the waste fails the TC test. EPA solicited comments on the treatment capacity effects of requiring facilities to treat the underlying hazardous constituents in TC organic hazardous wastes to meet the then-proposed universal treatment standards. Although several commenters submitted comments in support of or in opposition to requirements for treatment of underlying hazardous constituents, few comments were received on the specific issue of the effects of this requirement on treatment capacity. EPA has concluded that sufficient combustion capacity exists to treat underlying hazardous organic constituents. One commenter indicated that few facilities could achieve the universal treatment standards (UTS) for some metals (which may be present as underlying constituents) in incinerator ash without further treatment. However, EPA believes that stabilization should generally be able to achieve the UTS levels for metal underlying constituents present in residuals from the treatment of organic TC wastes.

Stabilization Capacity. Stabilization may be required to treat the residuals of wastes covered in today's rule that contain metal underlying constituents. EPA estimates that over 1 million tons of stabilization capacity is currently available. In analyzing alternative treatment capacity for stabilization of newly identified and listed wastes, the **Agency** built on the capacity analysis conducted for the Third Third LDR rule. This analysis was based on data contained in the TSDR Capacity Data Set.

Innovative (Non-combustion) Technologies. There are several non-combustion technologies for the treatment of soil contaminated with RCRA hazardous wastes, including hydrolysis, vacuum extraction, photolysis, and oxidation. To the extent that these technologies can be

used to treat hazardous soil on-site, the required capacity for combustion will decrease.

EPA has limited information on innovative technologies with regard to both available capacity and to limitations of the technologies or constraints on the use of these technologies. EPA solicited comments on the use of innovative technologies for the treatment of soil contaminated with RCRA hazardous wastes. Specifically, EPA requested information regarding constraints on the use of these technologies both on- and off-site, including physical or chemical characteristics of the soils, and logistical constraints such as permitting and scheduling. EPA also solicited data on volumes of contaminated soil currently being treated by these technologies, current available capacity, and estimates of future capacity. EPA received two comments regarding innovative technologies. One commenter noted that to treat soil on-site requires permitting and approval by local, state, and federal agencies, which may be a problem for some innovative technologies. Another commenter stated that the chemical concentration to which a soil can be biotreated is influenced by the particular chemical, the soil type, the age of the contaminated media, and the bioremediation process. EPA encourages the use of innovative technologies when feasible, and realizes that--in some cases--use of these technologies may be limited by technical and non-technical considerations. Sufficient conventional treatment capacity is available, however, such that these limitations do not affect capacity determinations.

C. Surface Disposed Newly Identified and Listed Wastes

1. Required Capacity for Newly Identified TC Organics (D018-D043)

The **Agency** is promulgating treatment standards for TC organic nonwastewaters based primarily on incineration performance data. Treatment standards for some newly identified organic TC wastewaters are also being promulgated in today's rule. (Organic TC wastewaters managed in systems regulated under the CWA, those injected into Class I injection wells as regulated under the SDWA, and those zero discharge facilities that engage in CWA-equivalent treatment prior to **land disposal** will be addressed in future rulemakings. EPA will make variance determinations for these wastes at that time.) For the proposed rule, the **Agency** did not have data indicating that facilities managing organic TC wastewaters would be impacted. Thus, EPA solicited comments in the proposed rule on the quantities of newly identified organic TC wastewaters affected by the rule. However, no comments were received on this issue. The **Agency** has concluded that facilities managing organic TC wastewaters will not be affected by this rule (i.e., no organic TC wastewaters will likely require alternative commercial treatment as a result of today's rule).

EPA developed estimates of the quantities of newly identified TC organic wastes based on current management options to comply with the LDR requirements. EPA did not receive any data in public comments on the quantities of organic TC nonwastewaters containing underlying metal constituents. EPA estimates that approximately 220,000 tons of organic TC nonwastewaters are subject to this rule. (See Table 2 which presents the quantities of TC nonwastewaters (except for liquid nonwastewaters) requiring off-site treatment by waste code.) Even if all this quantity contained underlying metal constituents, the residuals from the treatment of organics could not be higher than 220,000 tons. Underlying metal constituents are, by definition, at levels that are below TC levels for metals. Stabilization is an appropriate technology for

treating low level metal wastes. Given that ample treatment capacity exists for stabilization (over 1 million tons), EPA believes that sufficient treatment capacity exists for residuals of organic TC wastes containing underlying metal constituents.

Table 2.--Quantities of TC Nonwastewaters Requiring Off-Site Commercial Treatment
[Surface disposed wastes in tons]

Nonwastewaters Code	
D018	126,000
D019	8,700
D020	6,300
D021	8,500
D022	8,400
D023	3,900
D024	520
D025	310
D026	1,500
D027	1,200
D028	10,800
D029	3,800
D030	510
D031	200
D032	3,300
D033	450
D034	410
D035	4,200
D036	260
D037	600
D038	3,600
D039	6,900
D040	6,600
D041	110
D042	120
D043	16,500
TOTAL\1\	220,000

\1\Total may not sum due to rounding.

The **Agency** also developed estimates of available commercial treatment capacity. Table 3 summarizes available capacity for each alternative treatment technology required for the newly identified TC nonwastewaters. The table also summarizes the required capacity for each technology. A comparison of required and available treatment capacity indicates that adequate combustion capacity exists for TC nonwastewaters. Therefore, in the proposed rule, EPA indicated they would not be granting a national capacity variance for D018-D043

nonwastewaters. EPA requested comments and any additional data on its assessment that there is adequate treatment capacity for these wastes. EPA received one comment on this issue. The commenter supported EPA's determination that sufficient capacity exists to treat D018-D043 nonwastewaters. Thus, EPA has not changed its assessment and is not granting a variance for these nonwastewaters.

Table 3.--Required and Available Capacity for Newly Identified Organic TC Wastes\1\
[All quantities are in tons]

Treatment technology	Available capacity	Required capacity
Liquid Combustion	1,267,000	\2\11,000
Sludge/Solid Combustion	438,000	220,000
Stabilization	\3\1,127,000	(\4\)

\1\Does not include hazardous soil and debris, mixed radioactive wastes, or deep well injected wastes.
\2\These are liquid nonwastewaters.
\3\Capacity analysis for the Phase I Newly Listed and Newly Identified Waste rule.
\4\Stabilization capacity may be required to treat underlying metal constituents in organic TC wastes after combustion.

2. Used Oil

EPA's capacity assessment does not include specific quantities of used oil which might be subject to this rule. Absent data to the contrary, EPA believes that the quantities of used oil that are **land** disposed and hazardous for TC organics are relatively small. (Used oil that is recycled and that exhibits the TC is not subject to the **land disposal** restrictions. See 261.6(a)(4).)

EPA has requested information and conducted various studies of generation, management and characteristics of used oil. Although the data are not comprehensive, based on all indications, most used oil is either recycled or reused as fuel.

In its May 20, 1992 (57 FR 21524) final listing determination for used oil, the **Agency** concluded that only a small portion of used oil is **land** disposed (less than 10 percent of the amount generated). Although in general used oil could be hazardous for TC organics (benzene) and metals (lead), the **Agency** furthermore observed that the trend of increased recycling and the phase down of lead in gasoline under the Clean Air Act would decrease both the quantity of used oil that is **land** disposed and the proportion of it that is hazardous.

To update and refine its capacity analysis for this rule, EPA requested comments in the September 14, 1993 proposed rule (58 FR 48092) and reviewed available data sources. The **Agency** requested comments on the quantities of used oil that exhibit the toxicity characteristic and is subject to the LDRs. EPA received only one comment from a firm that collected over 113 million gallons of used oil

for re-refining in 1992, but did not receive any comments on the amounts of used oil subject to the LDRs.

To gain a broader perspective of used oil generation and management EPA examined 1991 data from the national Biennial Reporting System (BRS). EPA did not expect to obtain comprehensive total quantities of hazardous used oil generation and management; however, EPA was able to get the proportional management of reported waste oils. The BRS shows that less than one percent of all waste oil reported is landfilled. For example, in the `waste oil from changes' category of the 1991 BRS, approximately 1,400 tons was reported as landfilled. Although EPA believes the proportionate **disposal** (percent) is nationally representative, the total quantity was reported for waste streams from only a few states which indicates that the total is not comprehensive.

We have received preliminary data from the State of New Jersey Hazardous Waste Facilities Siting Commission. New Jersey treats used oil as state hazardous waste and the Commission tracks generation and shipping/manifest data. In the oil category, approximately 1 percent of used oil generated is identified as **land** disposed (landfilled). Of this 1 percent we do not know how much would be hazardous for TC organics.

Therefore, EPA believes that the quantities of used oil that are **land** disposed and are also hazardous for TC organics are small and sufficient reuse-as-fuel, energy recovery, and/or incineration capacity exists. EPA believes that a capacity variance is not warranted for these wastes.

3. Required Capacity for Other Newly Listed Organic Wastes

This section presents EPA's analysis of required capacity for other listed organic wastes including coke by-product wastes and chlorinated toluene production wastes.

a. Surface Disposed Coke By-Product Wastes

K141--Process residues from the recovery of coal tar, including, but not limited to, tar collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).
K142--Tar storage tank residues from the production of coke from coal or the recovery of coke by-products produced from coal.
K143--Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil units from the recovery of coke by-products produced from coal.
K144--Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.
K145--Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.
K147--Tar storage tank residues from coal tar refining.
K148--Residues from coal tar distillation, including but not limited to still bottoms.

For coke by-product nonwastewaters, EPA is promulgating concentration-based standards based on incineration. Under the authority of section 3007 of RCRA, EPA collected generation and management information concerning coke by-product wastes; this information was collected in 1985 and 1987. The majority of K141 to K145 nonwastewaters generated during that timeframe were recycled or used for energy recovery. Tar storage tank and tar distillation bottoms

may be removed periodically. The **Agency** identified the following annualized **land**-disposed quantities of wastes: 49 tons of K141 nonwastewaters, 2,750 tons of K142 nonwastewaters, 10 tons of K143 nonwastewaters, 304 tons of K144 nonwastewaters, 1,408 tons of K147 nonwastewaters, and less than 100 tons of K148 nonwastewaters. EPA identified no K145 nonwastewaters that were being **land** disposed. The **Agency** solicited comments on the above estimated quantities that may require alternative treatment as a result of the LDRs. However, no comments were received on this issue. Thus, EPA is using the estimates shown above for the quantities of these wastes that may require treatment capacity as a result of the LDRs.

Current management practices indicate that the majority of the newly listed coke by-product wastes are amenable to recycling, and therefore alternative treatment may not be required as a result of today's final rule. Thus, EPA believes that adequate capacity exists to treat the small amount of wastes that require alternative treatment.

EPA does not have any information that coke by-product wastewaters are currently generated. The quantity of these wastewaters is assumed to be zero. EPA solicited comments on changes of management practices or generation data on these wastes. No comments were received on this issue. Consequently, EPA concludes that the quantity of these wastewaters is zero.

As a result of this analysis, EPA is not granting a national capacity variance to K141, K142, K143, K144, K145, K147, and K148 nonwastewaters and wastewaters; however, the **Agency** is granting a three-month variance as described in Section A for the reason described therein.

b. Surface Disposed Chlorinated Toluene Wastes

K149--Distillation bottoms from the production of alpha (methyl) chlorinated toluene, ring-chlorinated toluene, benzoyl chlorides, and compound with mixtures of these functional groups. (This waste does not include still bottoms from the distillation of benzyl chloride.)
K150--Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha (methyl) chlorinated toluene, ring-chlorinated toluene, benzoyl chlorides and compounds with mixtures of these functional groups.
K151--Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha (methyl) chlorinated toluene, ring-chlorinated toluene, benzoyl chlorides and compounds with mixtures of these functional groups.

For wastes generated during the production of chlorinated toluene, EPA is promulgating concentration-based treatment standards based on incineration for nonwastewaters. EPA collected generation and management information on wastes generated from the production of chlorinated toluene. EPA collected this information under the authority of section 3007 of RCRA during engineering site visits in 1988. This capacity analysis incorporates data from the section 3007 information request and engineering site visits. EPA identified four facilities that produce chlorinated toluene wastes.

The **Agency** has identified no K149 nonwastewaters, no K150 nonwastewaters, and less than 100 tons of K151 nonwastewaters that were

being **land** disposed. For the capacity analysis, EPA assumes that these quantities are currently being **land** disposed and will require treatment capacity as a result of today's final rule.

EPA solicited comments on management practices and generation data on these wastes. One commenter requested a variance because high concentrations of salt and halogenated compounds make these wastes difficult to incinerate. EPA contacted a commercial incineration facility that stated that with proper management they could treat these wastes. Therefore, EPA believes that a capacity variance is not warranted for these wastes.

EPA does not have any information that chlorinated toluene wastewaters are currently generated. EPA solicited comments on changes of management practices or generation data on these wastes. No comments were received on this issue. Thus, EPA concludes that the quantity of these wastewaters is zero.

Because adequate capacity exists to treat these wastes, EPA is not granting a national capacity variance for K149, K150, and K151 nonwastewaters and wastewaters; however, like the other newly listed and identified wastes, EPA is granting a three-month variance as described in Section A for the reason described therein.

4. Newly Identified TC Wastes That Were Not Previously Hazardous by the Old EP Leaching Procedure

In the Third Third LDR rule (55 FR 22520, June 1, 1990), EPA promulgated treatment standards for D012 through D017 wastes, but only for those wastes that were previously hazardous by the old EP leaching procedure and remain hazardous under the new TCLP. D012 through D017 wastes that were not hazardous by the old EP leaching procedure but are now hazardous using the new TCLP are considered newly-identified D012 through D017 wastes.

In response to the ANPRM (56 FR 55160, October 24, 1991), EPA did not receive any estimates for additional waste quantities (or newly-identified wastes) due to the use of the TCLP rather than the EP leaching procedure. Similarly, no estimates were received in response to the proposed rule. EPA believes that the quantities of the newly-identified D012 through D017 wastes due to the use of the TCLP rather than the EP leaching procedure are small, if any, and, hence, expects little or no additional demand for commercial treatment capacity as a result of the LDRs. Because sufficient capacity exists to treat these wastes, EPA is not granting the newly-identified D012 through D017 wastes a national capacity variance. However, the **Agency** is granting a three-month variance as described in Section A of the preamble.

D. Required and Available Capacity for Newly Listed and Identified Wastes Mixed with Radioactive Components

EPA has defined a mixed RCRA/radioactive waste as any matrix containing a RCRA hazardous waste and a radioactive waste subject to the Atomic Energy Act (53 FR 37045-37046, September 23, 1988). These mixed wastes are subject to RCRA hazardous waste regulations, including the LDRs, regardless of the type of radioactive constituents contained in these wastes.

Radioactive wastes that are mixed with spent solvents, dioxins, California list wastes, First Third, Second Third, or Third Third wastes, and Phase I wastes, are subject to the LDRs already promulgated for these hazardous wastes. EPA granted national capacity variances for all of these mixed wastes because of a lack of national treatment capacity. Today's rule addresses the radioactive wastes that contain

newly listed and identified hazardous wastes being restricted in today's rulemaking.

Based on comments received by EPA in response to the proposed rule, the ANPRM (56 FR 55160, October 24, 1991), and previous rulemakings, the U.S. Department of Energy (DOE) is the primary generator of mixed RCRA/radioactive wastes. A variety of non-DOE facilities also generate mixed wastes, including nuclear power plants, academic and medical institutions, and industrial facilities.

1. Waste Generation

a. Non-soil and Non-debris Mixed Radioactive Wastes

In April 1993, DOE released the Interim Mixed Waste Inventory Report (IMWIR), which included a national inventory of all mixed wastes that were being stored or would be generated over the next five years and a national inventory of mixed waste treatment capacities and technologies. The report provides waste stream-specific and treatment facility-specific information for each site managing DOE wastes. This report is currently being updated; however the Final Mixed Waste Inventory Report (MWIR) Data Base that will be used to develop the Final MWIR was made public in May, 1994. This Data Base was used to determine the quantity of DOE-generated mixed waste requiring treatment.

Based on the MWIR data, EPA estimates that DOE generates 1,700 m<SUP>3/yr of non-soil, non-debris mixed radioactive waste contaminated with TC organic constituents. In addition, DOE currently has 19,000 m<SUP>3 of these wastes in storage. Table 4 lists the quantities of each category of non-soil, non-debris mixed waste that DOE expects to generate annually, as well as the amount currently in storage.

Table 4.--Quantities of DOE Non-soil, Non-debris Newly Identified TC Organic Mixed Radioactive Wastes

Mixed waste category	Current inventory (m<SUP>3)	Annual generation (m<SUP>3/yr)
High-level waste (HLW).....	11,000	1,300
Mixed transuranic waste (MTRU).....	4,700	1
Mixed low-level waste (MLLW).....	3,400	400

b. Mixed Radioactive Soil

EPA derived data on the quantities of DOE mixed radioactive soils using MWIR data. Table 5 lists the quantities of each category of mixed radioactive soil that is expected to be generated annually, as well as the amount currently in storage. The quantity of hazardous soil in storage, or projected to be generated annually, is very small. This can be attributed to the fact that the MWIR Data Base generally does not

include DOE **environmental** restoration wastes. When these wastes are generated they will increase the quantity of newly identified mixed wastes, particularly soil, that require treatment. Although these wastes are not included in the Final MWIR Data Base, the IMWIR estimates that DOE will generate a total of approximately 600,000 m<SUP>3 of mixed **environmental** restoration wastes over the period from 1993 to 1997. Some of these wastes will likely be newly identified organic TC mixed wastes.

Table 5.--Quantities of DOE Newly Identified TC Organic Mixed Radioactive Soils

Mixed waste category	Current inventory (m<SUP>3)	Annual generation (m<SUP>3/yr)
High-level waste (HLW).....	0	0
Mixed transuranic waste (MTRU).....	0	0
Mixed low-level waste (MLLW).....	20	10

c. Mixed Radioactive Debris

EPA derived data on quantities of DOE mixed radioactive debris using MWIR data. Table 6 lists the quantities of each category of mixed radioactive debris that is expected to be generated annually, as well as the quantity currently in storage.

Table 6.--Quantities of DOE Newly Identified TC Organic Mixed Radioactive Debris

Mixed waste category	Current inventory (m<SUP>3)	Annual generation (m<SUP>3/yr)
High-level waste (HLW).....	0	0
Mixed transuranic waste (MTRU).....	18,000	380
Mixed low-level waste (MLLW).....	14,000	650

2. Available Capacity and Capacity Implications

a. Non-soil and Non-debris Mixed Radioactive Wastes

EPA's review of IMWIR data indicates that 4,000 m<SUP>3 of treatment capacity are available annually for HLW at three DOE treatment systems. The available capacity appears sufficient to treat the estimated average annual generation. However, the IMWIR indicates that the current national inventory of HLW is greater than 280,000 m<SUP>3. This quantity dwarfs DOE's annual available treatment capacity for HLW. Consequently, DOE faces a treatment capacity shortfall for high-level radioactive wastes.

DOE is developing the Waste Isolation Pilot Project (WIPP) in New Mexico as a permanent repository for DOE TRU wastes, including MTRU wastes. However, DOE is not yet authorized to begin the placement of TRU wastes in the WIPP. In addition, wastes received at the WIPP must meet DOE's WIPP Waste Acceptance Criteria (WIPP-WAC). DOE is still in the planning stages for facilities designed to prepare MTRU wastes for shipment to the WIPP. As a result, DOE faces a capacity shortfall for treatment of MTRU wastes.

EPA's review of the IMWIR data indicates that 340 m<SUP>3/yr of currently available capacity exists at four DOE treatment systems for the treatment of alpha MLLW (i.e., MLLW with an alpha particle content between 10 and 100 nCi/g). However, the available capacity is greatly exceeded by the estimated quantity of alpha MLLW requiring treatment annually over the next five years, 3,700 m<SUP>3. Consequently, DOE faces a treatment capacity shortfall for non-soil, non-debris alpha MLLW.

According to IMWIR, 1,000,000 m<SUP>3/yr of treatment capacity among 26 systems are currently available to treat non-alpha MLLW. However, IMWIR states that most of DOE's currently available treatment capacity for MLLW is represented by facilities limited to the treatment of wastewaters (defined by DOE as less than 1 percent total suspended solids (TSS)). While these treatment facilities provide excess capacity for MLLW wastewaters, they cannot process wastes with high TSS and are not readily adaptable for other waste forms. Thus, although the quantity of MLLW treatment capacity is greater than the total quantity of mixed wastes, DOE faces a treatment capacity shortfall for nonwastewater MLLW, and thus non-alpha MLLW.

While DOE has provided its best available data on mixed waste generation, uncertainty remains about mixed waste generation at DOE (and non-DOE) facilities. For example, not all DOE Field Organizations responded to DOE's request for information following publication of the ANPRM. In addition, the data submitted to EPA generally did not include DOE **environmental** restoration wastes which, when generated, will increase the quantity of newly identified mixed wastes that require treatment. The IMWIR estimates that DOE will generate a total of 600,000 m<SUP>3 of mixed **environmental** restoration wastes over the period from 1993 to 1997. Although the IMWIR notes that the estimates of DOE **environmental** restoration wastes are preliminary, the quantities noted above will place additional strains on DOE's limited available mixed waste treatment capacity.

Although DOE is in the process of increasing its capacity to manage mixed RCRA/radioactive wastes, information supplied by DOE indicates that a significant capacity shortfall currently exists for the treatment of mixed RCRA/radioactive wastes, much of which are in storage facilities awaiting treatment. DOE has indicated that it will generally give treatment priority to mixed wastes that are already

restricted under previous LDR rules (e.g., radioactive wastes mixed with solvents, dioxins, California list wastes, First Third, Second Third, or Third Third wastes, and Phase I wastes). DOE is also concerned about the availability of treatment capacity for mixed wastes that will be generated as a result of site remediation activities. EPA's review of non-DOE data sources also showed a significant lack of commercial treatment capacity.

In response to the Phase II proposed rule, EPA received six comments concerning the proposal to grant a two-year national capacity variance for non-soil, non-debris TC organic mixed radioactive wastes. All six commenters, including DOE, were in favor of the two-year national capacity variance. Furthermore, none of the commenters identified any additional treatment capacity for the wastes. Thus, despite the uncertainty about the exact quantities of mixed radioactive wastes containing newly listed and identified wastes that will require treatment as a result of today's rule, the quantities appear to exceed available capacity. In addition, any new commercial capacity that does become available will be needed for mixed radioactive wastes that were regulated in previous LDR rulemakings and whose variances have already expired. Therefore, EPA has determined that sufficient alternative treatment capacity is not available for mixed radioactive wastes contaminated with newly listed and identified wastes whose standards are being promulgated today, and thus is granting a two-year national capacity variance for these wastes.

b. Mixed Radioactive Soil

EPA's review of IMWIR data indicates that no available treatment capacity exists at DOE facilities for mixed radioactive soils. As indicated earlier, a preliminary estimate of mixed radioactive soil is approximately 10 m<SUP>3/yr. Therefore, EPA is granting a two-year national capacity variance for mixed radioactive soils.

c. Mixed Radioactive Debris

EPA's review of IMWIR data indicates that less than 2 m\3\/yr of treatment capacity is available that can accept mixed low-level debris, an amount that exceeds the estimated annual generation. In addition, DOE has not yet been authorized to begin placement of MTRU wastes into the WIPP. As a result, DOE faces a treatment capacity shortfall for mixed transuranic debris. Therefore, EPA is granting a two-year national capacity variance to debris contaminated with mixed radioactive wastes.

E. Required and Available Capacity for High TOC Ignitable, TC Pesticide, and Newly Listed Wastes Injected Into Class I Deep Wells

As explained in previous rules concerning **land disposal** restrictions (see e.g., 52 FR 32450, August 27, 1987; 53 FR 30912, August 16, 1988; 55 FR 22520, June 1, 1990), EPA is allocating available capacity first to those wastes disposed in surface units, second to wastes resulting from CERCLA and RCRA clean ups, and finally to underground injected wastes. Based on this hierarchical approach, the **Agency** is promulgating the following effective dates for injected wastes.

EPA still has very limited information which differentiates high TOC D001 ignitable wastes from low TOC D001 ignitable wastes,

particularly with reference to the type of Class I injection well (i.e., nonhazardous versus hazardous) into which the wastes are disposed. The information the **Agency** does have indicates that both D001 ignitable wastes and D012-D017 TC pesticide wastes are deep well injected into Class I hazardous wells with no-migration variances. EPA is concerned that since these wastes are being generated, the potential exists that diluted D001 ignitable wastes and D012-D017 TC pesticide wastes are also being injected into Class I nonhazardous wells. In the proposed rule, EPA estimated that, based on management practices, low volumes of diluted high TOC ignitable waste were injected into Class I nonhazardous wells, and less than 420 tons of D012-D017 pesticide wastes are deep well injected into Class I nonhazardous wells. However, several commenters to the proposed rule, and other industries with Class I injection wells, have indicated that it would be extremely difficult to identify, segregate, treat, and/or arrange for **disposal** of these waste streams in a short time frame. This may be particularly true if waste volumes for high TOC D001 ignitable wastes are discovered to greatly exceed earlier estimates. The facilities, depending on their Class I injection wells, would have to reconfigure their **disposal** systems, which may include the construction or rearrangement of wastelines or piping.

To allow sufficient time to address these logistical problems, EPA is granting a one-year national capacity variance to allow the Class I injection facilities an appropriate lead time to identify their decharacterized high TOC D001 and D012-D017 waste streams and to create an infrastructure that allows their alternative management consistent with today's rule and the statute. This may include installation of equipment to segregate wastes. For operators applying for no-migration petitions, the variance will allow time for conducting the modelling or other analysis, for EPA review, and for the operators to make alternative arrangements if the petitions are not granted.

The following wastes are the newly listed wastes for which numerical standards are being promulgated, and which current data indicate are not being underground injected:

Coke By-Product Wastes: K141, K142, K143, K144, K145, K147, K148
Chlorotoluene Production Wastes: K149, K150, K151

The **Agency** requested further comment on whether any of these wastes are being injected. Comment was also requested on what quantities of wastes are being injected, and on the characteristics of these wastes. However, no comments were received on this issue. EPA is therefore not granting a national capacity variance for coke production wastes (K141-K145, K147, K148) and for chlorotoluene production wastes (K149-K151) injected into Class I deep wells.

F. Required and Available Capacity for Hazardous Soil and Debris Contaminated with Newly Listed and Identified Wastes

This capacity analysis focuses on hazardous soil and debris contaminated with wastes whose treatment standards are promulgated in today's rule.

EPA used several data sources to estimate the total quantity of **land**-disposed hazardous soil and debris. These sources include: responses to the Advance Notice to the Proposed Rulemaking (ANPRM) for the newly identified wastes (56 FR 55160); the TC Survey; information provided during a series of roundtable meetings held by the **Agency** in

May and June of 1991 with representatives of companies involved in the management and **disposal** of hazardous debris and soil; the Biennial Reporting System (BRS); Records of Decision (RODs) of Superfund sites; the TSDR Survey; and the National Survey of Hazardous Waste Generators.\3\

\3\EPA conducted the surveys during 1987 and 1988 to obtain comprehensive data on the nation's capacity for managing hazardous waste and the volumes of hazardous waste being **land** disposed as well as data on waste generation, waste characterization, and hazardous waste treatment capacity in units exempt from RCRA permitting.

---

1. Waste Generation

a. Hazardous Soil

The hazardous soil covered by this rule includes soil contaminated with D018-D043 organic TC wastes, and soils contaminated with coke by-product wastes and chlorinated toluene wastes. The largest quantity of hazardous soil affected by today's rulemaking is hazardous soil contaminated with D018-D043 organic TC wastes. At the time of the proposal, the **Agency** estimated that approximately 233,000 tons per year of TC soils would require off-site treatment and the majority of these TC soils was expected to be generated from surface impoundment closures. Based on new data received from owners/operators concerning surface impoundment closure practices, the **Agency** now estimates that the annual quantities of TC soil that is **land** disposed and subject to the LDRs ranges from 70,000 to 120,000 tons. Because TC soil generation from surface impoundment closures is somewhat discretionary, decisions by owners/operators of facilities concerning closure methods significantly changed the generation rates previously estimated in the TC Survey.

The **Agency** contacted facilities expected to generate TC soils from surface impoundment closures in 1993, 1994, and 1995 to confirm generation rates. Nearly all of the owners/operators revised their estimates for TC soil generation downward. Most owners/operators revised their closure practices to minimize or eliminate TC soil generation. Some facilities closed impoundments prior to today's rulemaking and other facilities are closing their impoundments as landfills. In closing as a landfill, a facility closes the impoundment with the waste in place. The facility owners/operators remove all free liquids, stabilize the sludges, cap the impoundment, and establish a ground water monitoring system. Therefore, for these facilities, no LDR treatment capacity would be necessary for TC soils. Of the facilities that predicted TC soil generation in 1994 and 1995, no facility currently expects to ship TC soils generated from a surface impoundment closure off-site for LDR treatment.

However, for at least two facilities, some uncertainty existed concerning the ability of these facilities to ship all of their TC soils off-site prior to today's rulemaking. Nevertheless, even if these facilities generated all their TC soils after today's rulemaking, the impact on LDR treatment capacity would be minimal because these facilities were expected to generate only 5,300 tons of TC soils.

Therefore, only 5,300 tons of TC soils generated by surface impoundment closures might require off-site treatment.

The **Agency** also reviewed the TC data base and public information on specific facilities to assess the TC soil generation rate from routine and sporadic activities that might require off-site **disposal**. For this analysis, the **Agency** assumed that routine activities and the quantity of soil generated should be considered constant over time when analyzing the generator population as a whole. However, for sporadic activities (e.g. surface impoundment closures), which by their nature occur infrequently, the year in which they occur is critically important in determining the required capacity for soil when the rule becomes effective.

In the TC Survey, some TC wastes were only characterized as a mixture of soil and debris. For the lower bound estimate (70,000 tons), the **Agency** assumed a 50-50 ratio of soil and debris in mixtures characterized as soil and debris. Using this assumption, EPA estimates that approximately 70,000 tons of TC soils generated by routine and sporadic activities will require additional treatment annually. In addition, in this lower bound estimate, the **Agency** assumed that all facilities were able to manage the TC soils generated from surface impoundment closures prior to the effective date of today's rule. Therefore, for the lower bound estimate, no TC soils from surface impoundment closures are expected to require additional treatment capacity. Based on these assumptions, the **Agency** calculates that the lower bound estimate is 70,000 tons of TC soils per year.

For the upper bound estimate, the **Agency** assigned the entire quantity of mixtures of soil and debris reported in the TC survey as TC soils. As a result, the TC soil generation rate for routine and sporadic activities increased by about 20,000 tons. The **Agency** conducted a similar review of facilities that submitted confidential business information (CBI) concerning TC soil generation rates. When assuming a 100 percent of mixtures were TC soils, these facilities were estimated to generate an additional 53,000 tons of TC soils for a total of 143,000 tons.

To verify the accuracy of the upper bound estimate, the **Agency** contacted individual facilities to determine actual TC soil generation rates. Based on these contacts, the TC data base overestimated TC soil generation from routine and sporadic activities. Many facilities stated that actual generation rates were lower or that the estimate included one time wastes from surface impoundment closures that already occurred. Therefore, when the **Agency** revised the upper bound estimates, TC soil generation rates for routine and sporadic activities at all facilities (non-CBI and CBI facilities) were approximately 114,000 tons. After adding the 5,300 tons of TC soils generated by surface impoundment closures, the estimated upper bound quantity of TC soil requiring additional treatment is approximately 120,000 tons per year.

Due to reduced generation of TC soils from surface impoundment closures in 1994 and 1995 and overestimations of TC soil generation rates from routine and sporadic activities, the **Agency** estimates that between 70,000 and 120,000 tons per year of TC soils will require off-site treatment.

At the time of the proposed rulemaking, the **Agency** was uncertain concerning the quantities of TC soil generated from manufactured gas plants (MGP). Most of the soil generated at these plants is expected to be contaminated with benzene. EPA requested updated information on the generation and management of these wastes and on whether there will be sufficient commercial treatment services to treat these wastes on-site.

No comments were received that specified quantities of soil generated or discussed commercial capacity for contaminated soils. While EPA acknowledges that generation of TC-contaminated soil from MGP will occur, the **Agency** expects that most of this quantity will be managed on-site and will not require off-site or commercial treatment capacity. Therefore, EPA has concluded that TC-contaminated soil from MGPs will not significantly affect the required treatment capacity for soil.

Similarly, several commenters to the ANPRM indicated that EPA may have underestimated the annual quantities of hazardous soil generated. Some commenters provided site specific data on the quantities of soil generated during remedial actions. The **Agency** incorporated these data in its analysis of the required capacity for hazardous soil.

In the proposed rule, EPA requested comments on the use of innovative technologies for hazardous soil. Specifically, EPA requested information on constraints to the use of these technologies both on- and off-site, including physical or chemical characteristics of the wastes, and logistical constraints such as permitting and scheduling. One commenter noted that to treat soil on-site requires permitting and approval by local, state, and federal agencies, which may be a problem for some innovative technologies. Another said that the chemical concentration to which a soil can be biotreated is influenced by the particular chemical, the soil type, the age of the contaminated media, and the bioremediation process. EPA has taken these comments into account in estimating the available capacity provided by innovative technologies for the treatment of hazardous soil.

b. Hazardous Debris

This rule covers debris contaminated with the newly listed and identified wastes covered in this rule. As shown in Table 7, data from the TC Survey indicates that approximately 34,000 tons of debris contaminated with D018-D043 wastes may be currently **land** disposed.

Table 7.--Quantities of TC-Contaminated Debris Requiring Off-Site Treatment
[Surface disposed wastes in tons]

Code	Debris
D018	26,400
D019	220
D020	20
D021	210
D022	80
D023	60
D024	60
D025	60

D026.....
700
D027.....
290
D028.....
280
D029.....
330
D030.....
90
D031.....
10
D032.....
70
D033.....
110
D034.....
40
D035.....
300
D036.....
70
D037.....
130
D038.....
570
D039.....
970
D040.....
890
D041.....
20
D042.....
20
D043.....
1,700

Total\1\	34,000

\1\Total may not sum due to rounding.

2. Current Management Practices

Waste generators and TSDFs report that most of the soils contaminated with D018-D043 newly identified organic TC wastes are currently landfilled without prior treatment. Incineration is the commercial off-site treatment technology reportedly available for these wastes.

Other than incineration for treating organic TC-contaminated soil, EPA has no information on the commercial off-site availability of other treatment technologies (e.g., low temperature thermal desorption, bioremediation, solvent extraction). Although several commenters to the ANPRM mentioned bioremediation as an alternative to incineration for the treatment of TC-contaminated soils, no commenter provided facility specific information on commercially available off-site treatment capacity for this technology. The lack of off-site commercial capacity

for technologies other than incineration was confirmed by responses to EPA's request for voluntary information from vendors of innovative technologies provided in the Vendor Information System for Innovative Treatment Technologies (VISITT). At the time of the proposed rule, EPA had received no information that special-handling problems may limit the quantity of hazardous soil that currently can be treated by incineration, and EPA requested information on special-handling concerns with managing these wastes. No comments were received on this issue. Thus, EPA has concluded that the quantity of hazardous soil that can be treated by incineration will not be limited by special-handling problems.

3. Available Capacity and Capacity Implications

a. Hazardous Soil

EPA is requiring that hazardous soil be treated prior to **land disposal**. EPA has determined that available destruction (e.g., incineration) and immobilization (e.g., stabilization) capacity exists. Some additional capacity also exists from many of the technologies in the extraction family (e.g., soil washing, chemical extraction). However, some of the capacity of extraction technologies currently used to decontaminate soils, such as soil washing, may not have received requisite permits by the effective date of this rule, although EPA is exploring the various opportunities for these technologies to become operational in an expedited manner. (Please contact the appropriate EPA regional office or the state hazardous waste program.) Thus, EPA anticipates that the off-site commercial capacity available to treat hazardous soils at the time this rule becomes effective will be limited to incineration and stabilization.

EPA recognizes that innovative technologies are also available to treat hazardous soil. Performance of these technologies also may be the basis for treatability variances pursuant to Sec. 268.44(h). EPA requested comments on the practicality and current availability of these technologies. EPA received comments that the proposed soil standards cannot be met by bioremediation, but may be met by innovative technologies such as thermal desorption and soil vapor extraction. However, EPA did not receive any comments on the current availability of these technologies. Thus, EPA has concluded that the off-site treatment capacity for hazardous soils will initially be limited to incineration and stabilization.

The **Agency** also solicited comments on the need for a capacity variance and on estimates of available treatment capacity. One commenter opposed the proposed capacity variance for soils and said that EPA should--at the very least--require treatment of ``hot spots.'' Several commenters supported the two-year national capacity variance. However, EPA has determined that a national capacity variance is unnecessary for hazardous soils.

b. Hazardous Debris

EPA estimates that approximately 34,000 tons of debris contaminated with newly identified organic TC wastes are currently **land** disposed and require off-site commercial treatment capacity. The capacity analysis conducted for debris contaminated with Phase II wastes indicates that sufficient capacity exists to treat debris contaminated with organics. Therefore, EPA is not granting a national capacity variance for hazardous debris contaminated with organic TC wastes and other listed

organic wastes covered in this rule.

XV. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA is implemented Federally in authorized States in the interim.

Certain portions of today's rule are being promulgated pursuant to sections 3004 (d) through (k), and (m), of RCRA (42 U.S.C. 6924 (d) through (k), and (m)). These will be added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA and that take effect in all States, regardless of their authorization status. States may apply for either interim or final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate that this rule is a self-implementing provision of HSWA.

B. Effect on State Authorization

As noted above, today's rule, with the exception of the changes in the definition of solid waste (see preamble section IX, and further discussion in this section, below), will be implemented in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. Because the rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. On December 18, 1992, EPA extended the period allowing interim authorization to January 1, 2003 (see 40 CFR 271.24(c) and 57 FR 60129).

Section 271.21(e)(2) requires that States that have final

authorization must modify their programs to reflect Federal program changes and must subsequently submit the modification to EPA for approval. The deadline by which the State would have to modify its program to adopt these regulations is specified in section 271.21(e). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being promulgated today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, states with existing standards could continue to administer and enforce their standards as a matter of State law. In the period between the effective date of today's rule and the approval of state program modifications, the regulated communities in authorized states generally must comply with state regulations in addition to the provisions in today's rule. The regulated community should continue to consult with state agencies authorized to administer LDRs. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. However, the State must modify its program by the deadline set forth in Sec. 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a state must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

The regulations promulgated today need not affect the State's Underground Injection Control (UIC) primacy status. A State currently authorized to administer the UIC program under the Safe Drinking Water Act (SDWA) could continue to do so without seeking authority to administer the amendments that will be promulgated at a future date. However, a State which wished to implement Part 148 and receive authorization to grant exemptions from the **land disposal** restrictions would have to demonstrate that it had the requisite authority to administer sections 3004 (f) and (g) of RCRA. The conditions under which such an authorization may take place are summarized below and are discussed in a July 15, 1985 final rule (50 FR 28728).

The modifications to the definition of solid waste in this rule (see preamble section IX) are based on non-HSWA authority. This portion of the rule, because it is not based on HSWA authority, will be applicable immediately only in those States that do not have final RCRA authorization. In authorized States, these requirements will not apply until the States revise their programs to adopt equivalent requirements under State law. In addition, this modification broadens the ``closed-loop'' recycling exclusion from the definition of solid waste. The modification to this rule is less stringent, or reduces the scope of, the Federal program. Therefore, although EPA strongly encourages timely adoption, authorized States are not required to modify their programs to adopt regulations consistent with and equivalent to this provision.

XVI. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ``significant.'' The Order defines a ``significant'' regulatory action as one that ``is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another **agency**; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The **Agency** estimated the costs of today's final rule to determine if it is a significant regulation as defined by the Executive Order. The incremental compliance costs for today's rule were estimated as a range from $194 to $219 million per year. Therefore, today's final rule is considered an economically significant rule, having an annual effect on the economy of over $100 million. The **Agency** prepared a regulatory impact analysis which analyzed the costs, economic impacts, and benefits of today's final rule.

This section of the preamble for today's final rule provides a discussion of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's final rule, followed by a presentation of the cost, economic impact and benefit results. Limitations to these estimates are described in the results section. More detailed discussions of the methodology and results may be found in the background document, ``Regulatory Impact Analysis of the **Land Disposal** Restrictions Final Rule for the Phase 2 Newly Listed and Identified Wastes,'' which has been placed in the docket for today's final rule.

1. Methodology Section

In today's final rule, the **Agency** is establishing treatment standards for newly identified and listed wastes, as well as any soils and debris which are contaminated with such wastes. (The **Agency** plans to develop alternative standards for hazardous soils as a part of the Hazardous Wastes Identification Rule (HWIR).) The newly identified wastes covered under today's rule include wastes displaying the organic toxicity characteristic (TC), and pesticide wastes that were not previously hazardous by the EP leaching procedure. The newly listed wastes are Coke By-product wastes and Chlorotoluene wastes.

Of the newly regulated hazardous soil in today's rule, the only existing volumes are soils contaminated with TC wastes. (Any volumes of soil contaminated with F037 and F038 listed wastes which exist are not covered in today's rule, but are being covered in a future **Agency** rulemaking.) Finally, the **Agency** is promulgating new testing and recordkeeping requirements, as well as reducing other recordkeeping requirements.

Furthermore, today's final rule proposes Universal Treatment Standards (UTS) for wastes already regulated under the LDRs. The **Agency**'s analysis includes an analysis of the volumes affected by this change in treatment levels. (In the switch to UTS levels there are

cases where the new UTS level is less stringent than the existing listing levels, as well as cases where the UTS is more stringent than existing levels. Either of these cases would have the potential to change the costs associated with treatment of these wastes.)

a. Methodology for Estimating the Affected Universe

In determining the costs, economic impacts, and benefits associated with today's rule, the **Agency** estimated the volumes of TC nonwastewaters, Coke By-Product wastes, and Chlorotoluene wastes affected by today's rule. For the TC wastes, the **Agency** employed the 1995 volume estimates presented for each affected waste in the **Agency**'s 1992 TC Census Database (hereafter referred to as the ``TC Survey''). (There are several ways in which the volumes employed for the capacity determinations differ from those used in the RIA.) The capacity determinations section of the preamble describes the methods used there to determine volumes. The scope of the RIA differs from that of the capacity determination in the ``time window'' analyzed. The RIA examines the short- and long-term impacts from the rule. Capacity determinations, on the other hand, are made for a two year time frame beginning at the promulgation of today's rule.

The **Agency** employed the volumes of Coke By-Products and Chlorotoluene wastes estimated in their respective listing analyses. For Coke By-Products, current management practices suggest that no volumes will be **land** disposed.

b. Cost Methodology

The cost analysis estimates the national level incremental costs which will be incurred as a result of today's rule. The cost estimates for both the baseline and post-regulatory scenarios are calculated employing: (i) The facility wastestream volume, (ii) the management practice (baseline or post-regulatory) assigned to that wastestream, and (iii) the unit cost associated with that practice. Summing the costs for all facilities produces the total costs for the given waste and scenario. Subtracting the baseline cost from the post-regulatory cost produces the national incremental cost associated with today's rule for the given waste. The unit costs include costs for Subtitle D and Subtitle C **disposal** (as appropriate), and transportation costs where necessary; all dollar estimates are in 1993 dollars (unless otherwise noted.)

Each section below summarizes the baseline and post-regulatory management practices assignments for each waste. The unit costs employed for the management practices are summarized in the RIA background document for today's rule.

The cost methodology section includes three sub-sections: (i) TC organic wastes, (ii) Other newly identified wastes, (iii) Testing, record-keeping, and permit modification costs.

i. Organic Toxicity Characteristic Wastes (D018-D043)

The standards established in today's rule for the organic TC wastes require the treatment of all underlying hazardous constituents. The affected TC wastes can be divided into three groups: TC nonwastewaters, TC soils, and TC debris. While TC wastewaters which are not managed in CWA or CWA-equivalent units are being regulated in today's rule, the current management practices for these volumes do not trigger **land**

disposal (RCRA exempt tanks, etc.), and therefore are not subject to the LDRs. Below, EPA describes the method of estimating the costs incurred in complying with the TC standards in today's rule.

In establishing a baseline for the TC nonwastewaters, TC hazardous soils, and TC hazardous debris affected by today's rule, the **Agency** assumed Subtitle C landfilling as the current management practice. The **Agency** believes that there are TC wastes which are not affected by today's rule because they are already being treated to comply with the standards established in today's rule (e.g.: wastes with high BTU value which are being used as fuel, etc.). The **Agency** assumed that landfilling was occurring on-site for noncommercial (company captive) facilities, and off-site for commercial facilities. Employing today's requirement of treating for all underlying constituents reasonably expected to be present, the **Agency** developed technology assignments for the wastes at each facility. The assignments include a treatment technology (or treatment train where required), and subsequent Subtitle D **disposal**. These assignments were based on waste characterization and constituent concentration data. Where little or no such data were available for a wastestream, the weighted average unit cost was assigned (the weighted average unit cost was calculated separately for nonwastewaters, soils, and debris).

The **Agency** allows a generator of hazardous soil to apply for a treatability variance. The **Agency**, however, has not analyzed the potential short-term savings which could be realized in the management of hazardous soil, and therefore may have overestimated the cost impacts of the rule in the short-term. There is also some uncertainty where certain technologies will be available to treat TC nonwastewaters. The **Agency** performed a sensitivity analysis to characterize this uncertainty, which is included in the RIA Background Document.

ii. Other Newly Identified Wastes

In addition to organic TC wastes, the wastes affected by today's final rule include coke by-product and chlorotoluene wastes. Based on an economic analysis conducted by the **Agency** for the listing of coke by-product waste, generators recycle these wastes rather than disposing of them in Subtitle C landfills. Therefore, EPA estimates that negligible volumes of coke by-product wastes would be affected by this rule. For the chlorotoluene waste volumes, EPA conducted a detailed cost analysis using site specific data.

iii. Testing, Recordkeeping, and Permit Modification Costs

In addition to the costs for treatment of wastes, EPA estimated the incremental costs of the testing and recordkeeping requirements in today's rule. Testing and recordkeeping costs were developed for all wastes addressed in today's rule.

The **Agency** examined the incremental cost of the testing requirements under today's rule. The **Agency** considered the baseline scenario to include testing for waste identification. The post-regulatory scenario would include testing for waste identification, testing to determine the number and concentration of constituents requiring treatment, and testing following treatment to ensure compliance with the standards.

For the analysis of recordkeeping costs, the **Agency** employed the estimates developed in the Information Collection Request (ICR) for

today's rule. These estimates were employed in a facility specific analysis to develop a total incremental cost associated with the testing and recordkeeping requirements in today's rule.

The **Agency** also performed a sensitivity analysis on potential permit modification costs for facilities which may switch to on-site treatment. EPA applied a schedule of payments based on the costs of permit modifications to a group of nine facilities. The results of this analysis are provided in the Background Document RIA.

c. Waste Minimization Methodology

Since reducing waste generation may be less costly than treating these wastes to LDR standards, the **Agency** performed an analysis examining the potential waste minimization alternatives available to facilities. The analysis followed a multi-step methodology which included: (1) Develop a profile of the industries which indicated plans for waste minimization in the 1992 TC Survey Database, (2) select industries to examine which would be representative of the TC waste universe, (3) make telephone data verification calls to facilities within these industries, (4) determine the cost components for the post-regulatory and waste minimization scenarios for all wastestreams for those facilities, (5) estimate whether potential total costs/cost savings for the waste minimization and the post-regulatory (i.e., without waste minimization) scenarios would be a profitable investment for the firms, and (6) extrapolate results to the TC waste universe, and determine overall cost/cost savings.

d. Economic Impact Methodology

The economic effects of today's final rule are defined as the difference between the industrial activity under post-regulatory conditions and the industrial activity in the absence of regulation (i.e., baseline conditions). It should be noted that the volumes used for the economic impacts analysis do not include the reduction in volumes, and thus in costs, from waste minimization practices.

The **Agency** has evaluated the economic impacts for facilities managing organic TC wastes on a facility specific basis, limited only by the extent that data were available. EPA estimated the economic effects by comparing incremental annual compliance costs to a number of company financial measures, such as revenues, cost of operations, operating income, and net income. Financial data were obtained from Standard & Poor's Corporation Descriptions for the last fiscal year reported.

Since EPA believes that no costs will be associated with the treatment standards for coke by-products in the final rule, no economic impacts will be associated with regulation of these wastes. Economic impacts of compliance for facilities currently **land** disposing chlorotoluenes were evaluated in aggregated form, as information relating to these wastes are proprietary.

e. Benefits Methodology

This section discusses the benefit estimates for today's rule. The section includes: i. Analysis of the universal treatment standards, ii. hazardous waste recycling exemption, iii. groundwater pathway benefits, and iv. air pathway benefits.

i. Analysis of the Impact of the Universal Treatment Standards

To determine the cost implications of the Universal Treatment Standards (UTS), the **Agency** compared the UTS levels for each constituent to those levels established for each constituent in each waste code in the **Land Disposal** Restrictions (LDR) program to date.

The **Agency** assumed that there would only be a cost impact when the levels were sufficiently different to require a change in the treatment technology used in order to meet the new UTS levels. The comparison of levels rendered three results: (a) No cost impact because the constituent levels were the same, (b) no cost impact because the constituent levels were within one order of magnitude of each other, or (c) a potential cost impact because the constituent levels were greater than one order of magnitude apart.

Upon identifying those waste code/constituent pairs which were significantly different (i.e., greater than one order of magnitude), the **Agency** developed an estimate of the costs/cost savings based on the incremental difference in the previous technology required and the new technology required to meet the specified levels.

ii. Hazardous Waste Recycling Exemption

The **Agency** also estimated the potential cost savings resulting from the hazardous waste recycling exemption for K069 wastes. Obtaining volumes data from the Biennial Reporting System (BRS), and employing unit cost data, the **Agency** calculated the cost savings associated with the change allowed in management practices. The **Agency** limited the analysis to K069 wastestreams that are not mixed with other hazardous waste codes, since these mixtures may not be amenable or legal for recycling.

iii. Human Health Risk Reduction--Groundwater Pathway

The **Agency** evaluated two types of human health benefits for today's rule: reduction in human health risks via the groundwater pathway, and reduction in human health risks via the air pathway. EPA's analysis of the benefits of today's rule covers TC wastes only. These wastes dominate the other wastestreams covered by today's rule in terms of volume. Moreover, these are the only wastes for which the **Agency** had the data necessary to conduct a benefits assessment, in terms of attributes such as constituent concentrations and facility-specific wastestream volumes.

The fundamental assumption underlying EPA's approach for assessing groundwater risk reduction is that Subtitle C containment is completely effective in the short-term, i.e., over a period of about 30 years, but that in the longer term, containment systems will fail. The benefits analysis performed for today's rule examines this potential long-term risk which would be avoided under today's rule (i.e., only occurring at least 30 years into the future). The difference in risks from the baseline to the post-regulatory condition is the measure of incremental benefit associated with today's rule.

The basic approach involves the following steps (which are elaborated upon in the RIA background document, which has been placed in the docket for today's rule). (1) The **Agency** employed waste concentration data from the TC Survey to represent waste concentrations. (2) EPA calculated the mean concentration of each constituent at each facility, weighted across the volume of all TC

wastes managed at that facility. (3) EPA calculated the risk that would be posed by consumption of leachate, for both cancer and non-cancer effects, at each facility. (4) EPA developed a set of dilution/attenuation factors (DAF) to represent the effect of fate and transport processes in a homogeneous ground-water system. For each facility, the **Agency** divided the risk posed by the consumption of leachate by the DAF (expressed as a probability distribution) to yield the risk posed by predicted concentrations in water from hypothetical exposure wells. (5) EPA then summed the predicted risks across all facilities to develop an estimate of the distribution of individual risk at facilities managing untreated TC wastes. In addition, the **Agency** simulated the post-regulatory scenario, and summed the predicted risks across facilities, and developed the incremental risk reduction attributable to today's rule. (6) EPA subsequently developed an estimate of the potential incremental population risk using 1990 population estimates around each site. The **Agency** used standard assumptions for body weight (70 kg) and water intake (2 liters per day) for 9 years.

v. Human Health Risk Reduction--Air Pathway

Constituents contained in TC waste, soil, and debris may be emitted to air through volatilization and dust entrainment. Reducing the concentrations of TC constituents through the treatment standards set in today's rule reduces the potential for air emissions, and the risks posed by those air emissions. The goal of the air pathway risk analysis was to characterize baseline (pre-LDR) risk and the reduction in baseline risk resulting from regulatory requirements in today's rule.

The **Agency**'s basic approach for the air pathway risk analysis involves the following steps (which are elaborated upon in the RIA background document, which has been placed in the docket for today's rule). (1) EPA used bulk waste concentration data from the TC Survey to represent waste concentrations. (2) the **Agency** calculated the mean concentration of each constituent at each facility, weighted across the volume of all TC wastes managed at that facility. (3) EPA calculated the unit area managing TC wastes. (4) EPA estimated emissions due to volatilization and dust entrainment for each constituent at each facility. (5) The **Agency** evaluated the atmospheric transport for each constituent. EPA then estimated exposure concentrations at several downwind points corresponding to potential exposure locations. The **Agency** employed standard high-end assumptions of body weight (70 kg) and 70-year lifetime. (6) The **Agency** calculated individual cancer risk and non-cancer risk across the facilities, using the modeled exposure assumptions. (7) EPA calculated population risk for exposed populations. (8) The **Agency** then simulated the risk under the regulatory requirements in today's rule, and determined the incremental risk reduction.

2. Results Section

a. Volume Results

The **Agency** has estimated the volumes affected by today's rule. A total of 295,000 tons per year of organic TC wastes (D018-D043) are affected by today's rule; this volume includes 167,000 tons per year of nonwastewaters, 94,000 tons per year of hazardous soil, and 34,000 tons per year of hazardous debris. The volume estimates used in the capacity analysis differ, as described above, from those estimates employed in the regulatory analysis. See the regulatory analysis background

document for a more detailed discussion of these differences.

In addition, there are 30 tons per year of Chlorotoluene wastes affected by today's rule. The **Agency** also estimates that 9,760 tons per year of K069 waste will be affected as a result of the hazardous waste recycling exemption.

b. Cost Results

Exhibit XVI-1 summarizes the results of the cost analysis for today's final rule. In total, today's final rule would have an incremental annual cost of between $194 and $219 million. The lower bound cost estimate represents the effects of waste minimization compliance cost savings. In addition, there is a potential cost savings associated with the UTS standards and the hazardous waste recycling exemption of $2.1 million per year.

Exhibit XVI-1.--Summary of Cost Impacts

Waste type	Post-regulatory cost (million $/yr)	Baseline cost (million $/yr)	Incremental cost (million $/yr)
Organic TC Wastes (D018-D043):			
Nonwastewaters	175	30	145
Soil	52	17	35
Debris	44	8	36
Waste Minimization	.....	.....	(25)
Chlorotoluenes	0.1	<0.1	<0.1
Test & Recordkeeping	.....	.....	3
Subtotal for All Newly Regulated Wastes	272	56	194 to 219
Previously Regulated Wastes Affected by Rule:			
K069 Recycling Wastes	0	2.0	(2.0)
Cyanide Wastes (UTS Analysis)	66.5	66.6	(0.1)
Subtotal for All Previously Regulated Wastes	66.5	68.6	(2.1)

Note: The cost impact shown for waste minimization reflects a potential compliance cost savings, and therefore is shown as a range. See the write up of the waste minimization results for more details.

i. Organic TC Wastes

As described above, EPA conducted a facility specific cost analysis for those facilities managing organic TC waste. The incremental costs for the TC wastes, presented in Exhibit XVI-1, are between $191 and $216 million per year. Sixty-seven percent of the total cost, in the upper bound, is for the treatment of organic TC nonwastewaters, and 16 percent and 17 percent is for the treatment of organic TC contaminated soil and debris, respectively.

ii. Other Newly Regulated Wastes

Since current management practices show that no coke by-product wastes are landfilled, as a result of the coke by-product listing rule (August 18, 1992, at 57 FR 37284), EPA estimates that there are no cost impacts associated with the treatment standards for coke by-product wastes. The incremental cost for chlorinated toluenes is estimated to be less than $0.1 million annually.

iii. Testing, Recordkeeping, Permit Modification Costs

The analysis of the testing requirements in today's rule estimates incremental costs of approximately $3 million per year. The costs for the recordkeeping requirements were estimated to be approximately $490,000 per year. These costs are described in more detail in the Regulatory Impact Analysis background document developed for today's rule, which has been placed in the **Agency**'s docket.

c. Waste Minimization

Through the methodology outlined above, the **Agency** analyzed the cost implications of waste management alternatives involving waste minimization in today's rule. The analysis shows that there is a potential savings of $25 million per year quantifiable in comparing current management practices to waste minimization activities which could be implemented. The **Agency** presents the cost impact of today's rule as a range from $0 to $25 million per year, representing the cost savings possible through waste minimization activities.

In performing the waste minimization analysis, the **Agency** focused on specific process for two industries for which data were available. This approach allowed the analysis to be detailed in nature, providing a close examination of facility compliance alternatives. However, in doing so, the **Agency** believes it has underestimated the potential savings due to waste minimization. In addition, the **Agency** has not attempted to address any further source reduction, waste minimization, or innovative technology development which may result from today's rule.

d. Economic Impact Results

For the 14 companies with non-commercial, or captive, landfills that receive the company's waste (from the TC Survey), only one company would have a ratio of incremental compliance cost to cost of operations greater than one-half percent; all other facilities would experience even lower economic impacts resulting from today's rule.

Since no costs are associated with the treatment standards for coke by-products, no economic impacts are expected. Based on a ratio analysis of incremental cost to total sales, none of the chlorinated

toluene generating facilities is expected to experience significant impacts as a result of the final rule.

e. Benefit Estimate Results

The benefit estimates for today's rule include both reduction in risk to human health, as well as incremental cost savings. Cost savings are estimated for the Universal Treatment Standards (UTS), cost savings resulting from changes to the hazardous waste recycling exemptions. Human health benefits are estimated for cancer and non-cancer risks.

However, there are some benefits which the **Agency** has not attempted to quantify which are potentially attributable to today's rule. For example, the **Agency** has not attempted to quantify any potential non-use value benefits from **protection** of resources through treatment of hazardous wastes.

Furthermore, the risk analysis performed by the **Agency** for today's rule does not account for many other potential benefits from today's rule. Ecological risk reduction from treatment of wastes under today's rule has not been quantified. Nor do the **Agency**'s air and groundwater benefit estimates account for karst terrain, complex flow situations, or other factors which could contribute to underestimates of benefits. These unquantified benefits are discussed at greater length in the regulatory impact background document for today's rule.

i. Universal Treatment Standards Analysis

The **Agency**'s analysis of the cost impacts realized due to the Universal Treatment Standards requiring/allowing a change in treatment technology from that required under the existing standards produced a cost savings of approximately $100,000 per year. The only wastes for which the **Agency** found that the UTS standards required/allowed a change in treatment were the cyanide wastes.

The **Agency** received a number of favorable comments on the adoption of the UTS standards. These commenters stated that the UTS would allow them to save much more in operation costs than the **Agency** has quantified in the above analysis. One commenter stated that they would save approximately $366,000 annually and 1736 hours per year in manhour savings associated with the UTS for F024. And another commenter stated that they would save approximately $740,000 per year as a result of the UTS. A more thorough description of these cost savings is shown in the Regulatory Impact Analysis background document developed for today's rule, which has been placed in the **Agency**'s docket.

ii. Hazardous Waste Recycling Exemption

The analysis performed by the **Agency** for the cost impacts associated with the recycling exemption for K069 produced a savings of approximately $2 million per year. A detailed description of the cost savings for K069 is shown in the Regulatory Impact Analysis background document developed for today's rule, which has been placed in the **Agency**'s docket.

iii. Results--Groundwater Pathway

This section presents results for the baseline and post-regulatory risk analyses. For each case, results for individual cancer and non-cancer risk are presented for both high end (i.e. the 90th percentile

of the distribution) and central tendency (i.e. 50th percentile of the distribution) risk estimates. The section concludes with population risk estimates for cancer risks.

The results, presented in full in the RIA background document which is included in the docket for today's rule, show that the central tendency cancer risk estimate is expected to be zero. The high-end individual cancer risk is 4 x 10<SUP>-7. For the post-regulatory scenario, EPA assumed that all constituents would be treated to universal standards. For the post-regulatory case, the central tendency risk estimate is zero, and the high-end risk estimate is 3 x 10<SUP>-6.

Using the distribution of individual risks, the **Agency** calculated baseline and post-regulatory cancer population risks. Based on these assumptions, EPA estimates the baseline population cancer risk to be 0.24 cases per year in the central tendency. The post-regulatory population cancer risk is about 0.02 cases per year in the central tendency. In other words, the regulatory option reduces 0.22 cases per year in the central tendency.

For the non-cancer risks, the analysis shows that the 99th percentile baseline exposure level is less than the reference dose, using central tendency assumptions. The population risk estimates show 2000 people, in the central tendency scenario, who are exposed to non-cancer risk above the threshold.

There are a number of limitations to the groundwater pathway analysis. The timeframe to which these benefits are attributable begins 30 years following promulgation of the rule. The analysis does not account for any existing regulations which would mitigate risks from groundwater (e.g., Clean Water Act). In addition, one of the wastestreams which contributes a large proportion of the groundwater population risk is made up primarily of PCBs, which are not expected to migrate any appreciable distance in groundwater. The DAF used in the analysis was calculated based on drinking wells being within one mile of the facility, and was not adjusted to accord with the population estimates used in the analysis which are based on a two-mile distance. The DAF distribution is not constituent-specific and accounts only for homogeneous flow situations.

iv. Results--Air Pathway

This section provides results for the air pathway, for the baseline and post-regulatory scenarios.

It should be noted that the high end scenario models hypothetical receptors. Approximately 26 of the 35 modeled facilities (74 percent) have individual cancer risks exceeding 10<SUP>-6 for the high end scenario in the baseline. For the high end scenario, the non-cancer risk ratio exceeds one at one facility.

In the post-regulatory scenario, individual cancer risk is lowered considerably, indicating that at most of the facilities risk is driven by TC constituents. In the high end scenario, eight facility(s) have risks exceeding 10<SUP>-6. Doses of all non-carcinogens are well below reference doses.

For the population risk estimates, the **Agency** determined that the central tendency incremental benefits are approximately 0.037. For the incremental benefits of today's rule, the **Agency** performed a sensitivity analysis, described in the RIA background document, which examines the risk implications of changing volatilization rates under different assumptions of landfill cover and frequency of waste

placement.

There are a number of limitations to the air pathway analysis. Facilities which were modeled in the analysis were assumed to continue to dispose of treated waste on-site, which, for some facilities, may not be the case. In addition, due to limitations in the model employed, wastes were assumed to be disposed of only one time per year. A sensitivity analysis was conducted and is included in the RIA Background Document, which examines the effect on the emissions rate from this assumption. Finally, only wastestreams with all the necessary information were analyzed. This limitation could have the effect of either under- or overestimating the risks from the air pathway.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 et seq., when an **agency** publishes a notice of rulemaking, for a rule that will have a significant effect on a substantial number of small entities, the **agency** must prepare and make available for public comment a regulatory flexibility analysis that considers the effect of the rule on small entities (i.e.: small businesses, small organizations, and small governmental jurisdictions). Under the **Agency**'s Revised Guidelines for Implementing The Regulatory Flexibility Act, dated May 4, 1992, the **Agency** committed to considering regulatory alternatives in rulemakings when there were any economic impacts estimated on any small entities. Previous guidance required regulatory alternatives to be examined only when significant economic effects were estimated on a substantial number of small entities.

In assessing the regulatory approach for dealing with small entities in today's final rule, for both surface **disposal** of wastes and underground injection control, the **Agency** considered two factors. First, data on potentially affected small entities are unavailable. Second, due to the statutory requirements of the RCRA LDR program, no legal avenues exist for the **Agency** to provide relief from the LDR's for small entities. The only relief available for small entities is the existing small quantity generator provisions and conditionally exempt small quantity generator exemptions found in 40 CFR 262.11-12, and 261.5, respectively. These exemptions basically prescribe 100 kilograms (kg) per calendar month generation of hazardous waste as the limit below which one is exempted from complying with the RCRA standards.

Given these two factors, the **Agency** was unable to frame a series of small entity options from which to select the lowest cost approach; rather, the **Agency** was legally bound to regulate the **land disposal** of the hazardous wastes covered in today's rule without regard to the size of the entity being regulated.

C. Paperwork Reduction Act

The information collection requirements in this rule have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and have been assigned control number 2050-0085. This rule will reduce the average reporting burden an estimated 0.75 hours per response, due to decreased paperwork requirements. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Information Policy Branch; EPA; 401 M St., S.W. (Mail Code 2138); Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget,

Washington, DC 20503, marked ``Attention: Desk Officer for EPA.''

List of Subjects

40 CFR Part 148

Environmental protection, Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 260

Administrative practice and procedure, Hazardous waste.

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 264

Hazardous waste, Packaging and containers, Reporting and recordkeeping requirements.

40 CFR Part 265

Hazardous waste, Packaging and containers.

40 CFR Part 266

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: July 29, 1994.

Carol M. Browner,
Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148--HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Section 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.

2. Section 148.17 is amended by redesignating paragraph (b) as (d), redesignating paragraph (c) as (e), and by adding paragraphs (b) and (c) to read as follows:

Sec. 148.17 Waste specific prohibitions; newly listed wastes.

* * * * *

(b) Effective December 19, 1994 the wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151, are prohibited from underground injection.

(c) Effective September 19, 1995 the wastes specified in 40 CFR 261.23 as D001 (High TOC Subcategory as specified at 40 CFR 268.40), and in 40 CFR 261.24 as EPA Hazardous waste numbers D012, D013, D014, D015, D016, and D017 are prohibited from underground injection.

* * * * *

PART 260--HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

3. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

4. In Sec. 260.30, the introductory text and paragraph (b) are revised to read as follows:

Sec. 260.30 Variances from classification as a solid waste.

In accordance with the standards and criteria in Sec. 260.31 and the procedures in Sec. 260.33, the Administrator may determine on a case-by-case basis that the following recycled materials are not solid wastes:

* * * * *

(b) Materials that are reclaimed and then reused within the original production process in which they were generated; and

* * * * *

5. In Sec. 260.31, the introductory text of both paragraph (a) and (b), is revised to read as follows:

Sec. 260.31 Standards and criteria for variances from classification as a solid waste.

(a) The Administrator may grant requests for a variance from classifying as a solid waste those materials that are accumulated speculatively without sufficient amounts being recycled if the applicant demonstrates that sufficient amounts of the material will be recycled or transferred for recycling in the following year. If a variance is granted, it is valid only for the following year, but can be renewed, on an annual basis, by filing a new application. The Administrator's decision will be based on the following criteria:

* * * * *

(b) The Administrator may grant requests for a variance from classifying as a solid waste those materials that are reclaimed and then reused as feedstock within the original production process in which the materials were generated if the reclamation operation is an essential part of the production process. This determination will be based on the following criteria:

* * * * *

6. In Sec. 260.32, the introductory text is revised to read as follows:

Sec. 260.32 Variance to be classified as a boiler.

In accordance with the standards and criteria in Sec. 260.10 (definition of ``boiler''), and the procedures in Sec. 260.33, the Administrator may determine on a case-by-case basis that certain enclosed devices using controlled flame combustion are boilers, even though they do not otherwise meet the definition of boiler contained in Sec. 260.10, after considering the following criteria:

* * * * *

7. Sec. 260.33 is revised to read as follows:

Sec. 260.33 Procedures for variances from classification as a solid waste or to be classified as a boiler.

The Administrator will use the following procedures in evaluating applications for variances from classification as a solid waste or applications to classify particular enclosed controlled flame combustion devices as boilers:

(a) The applicant must apply to the Administrator for the variance. The application must address the relevant criteria contained in Sec. 260.31 or Sec. 260.32.

(b) The Administrator will evaluate the application and issue a draft notice tentatively granting or denying the application. Notification of this tentative decision will be provided by newspaper advertisement or radio broadcast in the locality where the recycler is located. The Administrator will accept comment on the tentative decision for 30 days, and may also hold a public hearing upon request or at his discretion. The Administrator will issue a final decision after receipt of comments and after the hearing (if any).

PART 261--IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

8. The authority citation for Part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

9. Section 261.2 is amended by revising paragraph (e)(1)(iii) to read as follows:

Sec. 261.2 Definition of solid waste.

* * * * *

(e) * * *

(1) * * *

(iii) Returned to the original process from which they are generated, without first being reclaimed or **land** disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the **land**.

* * * * *

PART 264--STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND **DISPOSAL** FACILITIES

10. The authority citation for Part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6925.

11. In Sec. 264.1, paragraph (g)(6) is revised to read as follows:

Sec. 264.1 Purpose, scope and applicability.

* * * * *

(g) * * *

(6) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in Sec. 260.10 of this chapter, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Sec. 268.40 of this chapter, Table Treatment Standards for Hazardous Wastes), or reactive (D003) waste, to remove the characteristic before **land disposal**, the owner/operator must comply with the requirements set out in Sec. 264.17(b).

* * * * *

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND **DISPOSAL** FACILITIES

12. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, 6935, and 6936.

13. In Sec. 265.1, paragraph (c)(10) is revised to read as follows:

Sec. 265.1 Purpose, scope, and applicability.

* * * * *

(c) * * *

(10) The owner or operator of an elementary neutralization unit or a wastewater treatment unit as defined in Sec. 260.10 of this chapter, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes (other than the D001 High TOC Subcategory defined in Sec. 268.40 of this chapter, Table Treatment Standards for Hazardous Wastes), or reactive (D003) waste, to remove the characteristic before **land disposal**, the owner/operator must comply with the requirements set out in Sec. 265.17(b).

* * * * *

PART 266--STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES

14. The authority citation for part 266 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6934.

Subpart C--Recyclable Materials Used in a Manner Constituting **Disposal**

15. In Sec. 266.23, paragraph (a) is revised to read as follows:

Sec. 266.23 Standards applicable to users of materials that are used in a manner that constitutes **disposal**.

(a) Owners or operators of facilities that use recyclable materials in a manner that constitutes **disposal** are regulated under all applicable provisions of subparts A through N of parts 124, 264, 265, 268, and 270 of this chapter and the notification requirement under section 3010 of RCRA. (These requirements do not apply to products which contain these recyclable materials under the provisions of Sec. 266.20(b) of this chapter.)

* * * * *

Subpart H--Hazardous Waste Burned in Boilers and Industrial Furnaces

16. In Sec. 266.100, the introductory text in paragraphs (c)(1), (c)(3), (c)(3)(i), and (c)(3)(ii); and paragraph (c)(3)(i)(A) are revised to read as follows:

Sec. 266.100 Applicability

* * * * *

(c) * * *

(1) To be exempt from Secs. 266.102 through 266.111, an owner or operator of a metal recovery furnace or mercury recovery furnace, must comply with the following requirements, except that an owner or operator of a lead or a nickel-chromium recovery furnace, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, must comply with the requirements of paragraph (c)(3) of this section:

* * * * *

(3) To be exempt from Secs. 266.102 through 266.111, an owner or operator of a lead or nickel-chromium or mercury recovery furnace, or a metal recovery furnace that burns baghouse bags used to capture metallic dusts emitted by steel manufacturing, must provide a one-time written notice to the Director identifying each hazardous waste burned and specifying whether the owner or operator claims an exemption for each waste under this paragraph or paragraph (c)(1) of this section. The owner or operator must comply with the requirements of paragraph (c)(1) of this section for those wastes claimed to be exempt under that

paragraph and must comply with the requirements below for those wastes claimed to be exempt under this paragraph (c)(3).

(i) The hazardous wastes listed in appendices XI, XII, and XIII, part 266, and baghouse bags used to capture metallic dusts emitted by steel manufacturing are exempt from the requirements of paragraph (c)(1) of this section, provided that:

(A) A waste listed in appendix IX of this part must contain recoverable levels of lead, a waste listed in appendix XII of this part must contain recoverable levels of nickel or chromium, a waste listed in appendix XIII of this part must contain recoverable levels of mercury and contain less than 500 ppm of 40 CFR part 261, appendix VIII organic constituents, and baghouse bags used to capture metallic dusts emitted by steel manufacturing must contain recoverable levels of metal; and

* * * * *

(ii) The Director may decide on a case-by-case basis that the toxic organic constituents in a material listed in appendix XI, XII, or XIII of this part that contains a total concentration of more than 500 ppm toxic organic compounds listed in appendix VIII, part 261 of this chapter, may pose a hazard to human health and the environment when burned in a metal recovery furnace exempt from the requirements of this subpart. In that situation, after adequate notice and opportunity for comment, the metal recovery furnace will become subject to the requirements of this subpart when burning that material. In making the hazard determination, the Director will consider the following factors:

* * * * *

Appendix XIII to Part 266 [Added]

17. Appendix XIII is added to read as follows:

Appendix XIII to Part 266--Mercury Bearing Wastes That May Be Processed in Exempt Mercury Recovery Units

These are exempt mercury-bearing materials with less than 500 ppm of 40 CFR Part 261, appendix VIII organic constituents when generated by manufacturers or users of mercury or mercury products.

1. Activated carbon
2. Decomposer graphite
3. Wood
4. Paper
5. Protective clothing
6. Sweepings
7. Respiratory cartridge filters
8. Cleanup articles
9. Plastic bags and other contaminated containers
10. Laboratory and process control samples
11. K106 and other wastewater treatment plant sludge and filter cake
12. Mercury cell sump and tank sludge
13. Mercury cell process solids
14. Recoverable levels or mercury contained in soil

PART 268--**LAND DISPOSAL** RESTRICTIONS

18. The authority citation for Part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A--General

19. In Sec. 268.1, paragraphs (c)(3)(ii), (e)(4), and (e)(5) are revised, and paragraph (c)(3)(iii) is added, to read as follows:

Sec. 268.1 Purpose, scope and applicability.

* * * * *

(c) * * *

(3) * * *

(ii) Do not exhibit any prohibited characteristic of hazardous waste at the point of injection; and

(iii) If at the point of generation the injected wastes include D001 High TOC subcategory wastes or D012-D017 pesticide wastes that are prohibited under Sec. 148.17(c) of this chapter, those wastes have been treated to meet the treatment standards of Sec. 268.40 before injection.

* * * * *

(e) * * *

(4) De minimis losses to wastewater treatment systems of commercial chemical product or chemical intermediates that are ignitable (D001), corrosive (D002), or are organic constituents that exhibit the characteristic of toxicity (D012-D043), and that contain underlying hazardous constituents as defined in Sec. 268.2(i), are not considered to be prohibited wastes. De minimis is defined as losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing; or

(5) **Land disposal** prohibitions for hazardous characteristic wastes do not apply to laboratory wastes displaying the characteristic of ignitability (D001), corrosivity (D002), or organic toxicity (D012--D043), that are mixed with other plant wastewaters at facilities whose ultimate discharge is subject to regulation under the CWA (including wastewaters at facilities which have eliminated the discharge of wastewater), provided that the annualized flow of laboratory wastewater into the facility's headworks does not exceed one per cent, or provided that the laboratory wastes' combined annualized average concentration does not exceed one part per million in the facility's headworks.

20. In Sec. 268.2, paragraphs (g) and (i) are revised to read as follows:

Sec. 268.2 Definitions applicable in this part.

* * * * *

(g) Debris means solid material exceeding a 60 mm particle size that is intended for **disposal** and that is: A manufactured object; or plant or animal matter; or natural geologic material. However, the

following materials are not debris: Any material for which a specific treatment standard is provided in Subpart D, Part 268, namely lead acid batteries, cadmium batteries, and radioactive lead solids; Process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and Intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume. A mixture of debris that has not been treated to the standards provided by Sec. 268.45 and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.
* * * * *

(i) Underlying hazardous constituent means any constituent listed in Sec. 268.48, Table UTS--Universal Treatment Standards, except zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standard.

21. Section 268.7 is amended by revising paragraphs (a) and (b)(4)(ii), and by adding paragraph (b)(5)(iv) to read as follows:

Sec. 268.7 Waste analysis and recordkeeping.

(a) Except as specified in Sec. 268.32, if a generator's waste is listed in 40 CFR part 261, subpart D, the generator must test his waste, or test an extract using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846 as incorporated by reference in Sec. 260.11 of this chapter), or use knowledge of the waste, to determine if the waste is restricted from **land disposal** under this part. Except as specified in Sec. 268.32, if a generator's waste exhibits one or more of the characteristics set out at 40 CFR part 261, subpart C, the generator must test an extract using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'' (SW-846)), or use knowledge of the waste, to determine if the waste is restricted from **land disposal** under this Part. If the generator determines that his waste exhibits the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by CMBST or RORGS of Sec. 268.42, Table 1), or the characteristic of corrosivity (D002), and is prohibited under Sec. 268.37; and/or the characteristic of organic toxicity (D012-D043), and is prohibited under Sec. 268.38, the generator must determine the underlying hazardous constituents (as defined in Sec. 268.2, in the D001, D002, or D012-D043 wastes.

(1) If a generator determines that he is managing a restricted waste under this part and the waste does not meet the applicable treatment standards set forth in Subpart D of this part or exceeds the applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d), with each shipment of waste the generator must notify the treatment or storage facility in writing of the appropriate treatment standards set forth in Subpart D of this part and any applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d). The notice must include the following information:

(i) EPA Hazardous Waste Number;

(ii) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001-F005, F039, D001, D002, and D012-D043. Generators must also

include whether the waste is a nonwastewater or wastewater (as defined in Sec. 268.2(d) and (f), and indicate the subcategory of the waste (such as ``D003 reactive cyanide''), if applicable;

(iii) The manifest number associated with the shipment of waste;

(iv) For hazardous debris when using the alternative treatment technologies provided by Sec. 268.45:

(A) The contaminants subject to treatment, as described in Sec. 268.45(b); and

(B) An indication that these contaminants are being treated to comply with Sec. 268.45.

(v) For hazardous debris when using the treatment standards for the contaminating waste(s) in Sec. 268.40: the requirements described in paragraphs (a)(1) (i), (ii), (iii), and (vi) of this section.

(2) If a generator determines that he is managing a restricted waste under this Part, and determines that the waste can be **land** disposed without further treatment, with each shipment of waste he must submit, to the treatment, storage, or **land disposal** facility, a notice and a certification stating that the waste meets the applicable treatment standards set forth in subpart D of this part and the applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d). Generators of hazardous debris that is excluded from the definition of hazardous waste under Sec. 261.3(e)(2) of this chapter (i.e., debris that the Director has determined does not contain hazardous waste), however, are not subject to these notification and certification requirements.

(i) The notice must include the following information:

(A) EPA Hazardous Waste Number;

(B) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001-F005, F039, D001, D002, and D012-D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in Sec. 268.2 (d) and (f)), and indicate the subcategory of the waste (such as ``D003 reactive cyanide''), if applicable;

(C) The manifest number associated with the shipment of waste;

(D) Waste analysis data, where available.

(ii) The certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

(3) If a generator's waste is subject to an exemption from a prohibition on the type of **land disposal** method utilized for the waste (such as, but not limited to, a case-by-case extension under Sec. 268.5, an exemption under Sec. 268.6, or a nationwide capacity variance under subpart C of this part), with each shipment of waste he must submit a notice to the facility receiving his waste stating that the waste is not prohibited from **land disposal**. The notice must include the following information:

(i) EPA Hazardous Waste Number;

(ii) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001-F005, F039, D001, D002, and D012-D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in Sec. 268.2 (d) and (f)), and indicate the subcategory of the waste (such as ``D003 reactive cyanide''), if applicable;

(iii) The manifest number associated with the shipment of waste;

(iv) Waste analysis data, where available;

(v) For hazardous debris when using the alternative treatment technologies provided by Sec. 268.45:

(A) The contaminants subject to treatment, as described in Sec. 268.45(b); and

(B) An indication that these contaminants are being treated to comply with Sec. 268.45.

(vi) For hazardous debris when using the treatment standards for the contaminating waste(s) in Sec. 268.40: the requirements described in paragraphs (a)(1) (i), (ii), (iii), and (vi) of this section.

(4) If a generator is managing prohibited waste in tanks, containers, or containment buildings regulated under 40 CFR 262.34, and is treating such waste in such tanks, containers, or containment buildings to meet applicable treatment standards under subpart D of this part, the generator must develop and follow a written waste analysis plan which describes the procedures the generator will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1, Sec. 268.45, however, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

(i) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain all information necessary to treat the waste(s) in accordance with the requirements of this Part, including the selected testing frequency.

(ii) Such plan must be filed with the EPA Regional Administrator (or his designated representative) or State authorized to implement Part 268 requirements a minimum of 30 days prior to the treatment activity, with delivery verified.

(iii) Wastes shipped off-site pursuant to this paragraph must comply with the notification requirements of Sec. 268.7(a)(2).

(5) If a generator determines whether the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. If a generator determines whether the waste is restricted based on testing this waste or an extract developed using the test method described in Appendix I of this part, all waste analysis data must be retained on-site in the generator's files.

(6) If a generator determines that he is managing a restricted waste that is excluded from the definition of hazardous or solid waste or exempt from Subtitle C regulation, under 40 CFR 261.2 through 261.6 subsequent to the point of generation, he must place a one-time notice stating such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from RCRA Subtitle C regulation, and the disposition of the waste, in the facility's file.

(7) Generators must retain on-site a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to this section for at least five years from the date that the waste that is the subject of such documentation

was last sent to on-site or off-site treatment, storage, or **disposal**. The five year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator. The requirements of this paragraph apply to solid wastes even when the hazardous characteristic is removed prior to **disposal**, or when the waste is excluded from the definition of hazardous or solid waste under 40 CFR 261.2 through 261.6, or exempted from RCRA Subtitle C regulation, subsequent to the point of generation.

(8) If a generator is managing a lab pack waste and wishes to use the alternative treatment standard under Sec. 268.42(c), with each shipment of waste the generator must submit a notice to the treatment facility in accordance with paragraph (a)(1) of this section, except that underlying hazardous constituents need not be determined. The generator must also comply with the requirements in paragraphs (a)(5) and (a)(6) of this section and must submit the following certification, which must be signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes which have not been excluded under appendix IV to 40 CFR part 268 or solid wastes not subject to regulation under 40 CFR part 261. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

(9) [Reserved]

(10) Small quantity generators with tolling agreements pursuant to 40 CFR 262.20(e) must comply with the applicable notification and certification requirements of paragraph (a) of this section for the initial shipment of the waste subject to the agreement. Such generators must retain on-site a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

(b) * * *

(4) * * *

(ii) The waste constituents to be monitored, if monitoring will not include all regulated constituents, for wastes F001-F005, F039, D001, D002, and D012-D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in Sec. 268.2 (d) and (f), and indicate the subcategory of the waste (such as D003 reactive cyanide), if applicable.

* * * * *

(5) * * *

(iv) For characteristic wastes D001, D002, and D012-D043 that are: subject to the treatment standards in Sec. 268.40 (other than those expressed as a required method of treatment); that are reasonably expected to contain underlying hazardous constituents as defined in Sec. 268.2(i); are treated on-site to remove the hazardous characteristic; and are then sent off-site for treatment of underlying hazardous constituents, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the

hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.
* * * * *

22. In Sec. 268.9, paragraph (a), (d)(1)(i), and (d)(1)(ii) are revised, (d)(1)(iii) is removed and (d)(2) (i) and (ii) are added to read as follows:

Sec. 268.9 Special rules regarding wastes that exhibit a characteristic.

(a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subpart D of this part. For purposes of part 268, the waste will carry the waste code for any applicable listing under 40 CFR part 261, subpart D. In addition, the waste will carry one or more of the waste codes under 40 CFR part 261, subpart C, where the waste exhibits a characteristic, except in the case when the treatment standard for the waste code listed in 40 CFR part 261, subpart D operates in lieu of the treatment standard for the waste code under 40 CFR part 261, subpart C, as specified in paragraph (b) of this section. If the generator determines that his waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by CMBST, or RORGS), or the waste code listed in 40 CFR part 261, subpart D operates in lieu of the treatment standard for the waste code under 40 CFR part 261, subpart C, as specified in paragraph (b) of this section. If the generator determines that his waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by CMBST, or RORGS), or the characteristic of corrosivity (D002), and is prohibited under Sec. 268.37; or that his waste displays the characteristic of toxicity (D012-D043), and is prohibited under Sec. 268.38, the generator must determine the underlying hazardous constituents (as defined in Sec. 268.2), in the D001, D002, or D012-D043 wastes.
* * * * *

(d) * * *

(1) * * *

(i) Name and address of the RCRA Subtitle D facility receiving the waste shipment; and

(ii) A description of the waste as initially generated, including the applicable EPA Hazardous Waste Number(s), treatability group(s), and underlying hazardous constituents (as defined in Sec. 268.2(i) in D001 and D002 wastes prohibited under Sec. 268.37, or D012-D043 wastes under Sec. 268.38.

(2) * * *

(i) If treatment removes the characteristic but does not treat underlying hazardous constituents, then the certification found in Sec. 268.7 (b)(5)(v) apply.

(ii) [Reserved]

Subpart C--Prohibitions on **Land Disposal**

23. In subpart C, Sec. 268.38 is added to read as follows:

Sec. 268.38 Waste specific prohibitions--newly identified organic toxicity characteristic wastes and newly listed coke by-product and chlorotoluene production wastes.

(a) Effective December 19, 1994, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151 are prohibited from **land disposal**. In addition, debris contaminated with EPA Hazardous Waste numbers F037, F038, K107-K112, K117, K118, K123-K126, K131, K132, K136, U328, U353, U359, and soil and debris contaminated with D012-D043, K141-K145, and K147-K151 are prohibited from **land disposal**. The following wastes that are specified in 40 CFR 261.24, Table 1 as EPA Hazardous Waste numbers: D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043 that are not radioactive, or that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that are zero dischargers that do not engage in CWA-equivalent treatment before ultimate **land disposal**, or that are injected in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), are prohibited from **land disposal**. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies.

(b) On September 19, 1996, radioactive wastes that are mixed with D018-D043 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate **land disposal**, are prohibited from **land disposal**. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies. Radioactive wastes mixed with K141-K145, and K147-K151 are also prohibited from **land disposal**. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from **land disposal**.

(c) Between December 19, 1994 and September 19, 1996, the wastes included in paragraphs (b) of this section may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in Sec. 268.5(h)(2) of this Part.

(d) The requirements of paragraphs (a), (b), and (c) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in Subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under Sec. 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under Sec. 268.44;

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to Sec. 268.5, with respect to these wastes covered by the extension.

(e) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in Sec. 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Subpart D levels, the waste is prohibited from **land disposal**, and all requirements of part 268 are applicable, except as otherwise specified.

Subpart D--Treatment Standards

24. Section 268.40 is revised to read as follows:

Sec. 268.40 Applicability of Treatment Standards.

(a) A waste identified in the table ``Treatment Standards for Hazardous Wastes'' may be **land** disposed only if it meets the requirements found in the table. For each waste, the table identifies one of three types of treatment standard requirements:

(1) All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste (``total waste standards''); or

(2) The hazardous constituents in the extract of the waste or in the extract of the treatment residue must be at or below the values found in the table (``waste extract standards''); or

(3) The waste must be treated using the technology specified in the table (``technology standard''), which are described in detail in Sec. 268.42, Table 1--Technology Codes and Description of Technology-Based Standards.

(b) For wastewaters, compliance with concentration level standards is based on maximums for any one day, except for D004 through D011 wastes for which the previously promulgated treatment standards based on grab samples remain in effect. For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered by the waste extract standards, the test Method 1311, the Toxicity Characteristic Leaching Procedure found in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW-846, as incorporated by reference in Sec. 260.11, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: Method 1311, or Method 1310, the Extraction Procedure Toxicity Test. For wastes covered by a technology standard, the wastes may be **land** disposed after being treated using that specified technology or an equivalent treatment technology approved by the Administrator under the procedures set forth in Sec. 268.42(b).

(c) When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.

(d) Notwithstanding the prohibitions specified in paragraph (a) of this section, treatment and **disposal** facilities may demonstrate (and certify pursuant to 40 CFR 268.7(b)(5)) compliance with the treatment standards for organic constituents specified by a footnote in the table ``Treatment Standards for Hazardous Wastes'' in this section, provided the following conditions are satisfied:

(1) The treatment standards for the organic constituents were established based on incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or based on combustion in fuel substitution units operating in accordance with applicable technical requirements;

(2) The treatment or **disposal** facility has used the methods referenced in paragraph (d)(1) of this section to treat the organic constituents; and

(3) The treatment or **disposal** facility may demonstrate compliance with organic constituents if good-faith analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude.

(e) For characteristic wastes (D001, D002, and D012-D043 that are subject to treatment standards in the following table ``Treatment Standards for Hazardous Wastes,'' all underlying hazardous constituents (as defined in Sec. 268.2(i)) must meet Universal Treatment Standards, found in Sec. 268.48, Table UTS, prior to **land disposal**.

(f) The treatment standards for F001-F005 nonwastewater constituents carbon disulfide, cyclohexanone, and/or methanol apply to wastes which contain only one, two, or three of these constituents. Compliance is measured for these constituents in the waste extract from test Method 1311, the Toxicity Characteristic Leaching Procedure found in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW-846, as incorporated by reference in Sec. 260.11. If the waste contains any of these three constituents along with any of the other 25 constituents found in F001-F005, then compliance with treatment standards for carbon disulfide, cyclohexanone, and/or methanol are not required.

Treatment Standards for Hazardous Wastes

Note: The treatment standards that heretofore appeared in tables in Secs. 268.41, 268.42, and 268.43 of this part have been consolidated into the table ``Treatment Standards for Hazardous Wastes'' in this section.

BILLING CODE 6560-50-P

<GRAPHIC><TIF5>TR19SE94.005

<GRAPHIC><TIF6>TR19SE94.006

<GRAPHIC><TIF7>TR19SE94.007

<GRAPHIC><TIF8>TR19SE94.008

<GRAPHIC><TIF9>TR19SE94.009

<GRAPHIC><TIF10>TR19SE94.010

<GRAPHIC><TIF11>TR19SE94.011

<GRAPHIC><TIF12>TR19SE94.012

<GRAPHIC><TIF13>TR19SE94.013

<GRAPHIC><TIF14>TR19SE94.014

<GRAPHIC><TIF15>TR19SE94.015

<GRAPHIC><TIF16>TR19SE94.016

<GRAPHIC><TIF17>TR19SE94.017

<GRAPHIC><TIF18>TR19SE94.018

<GRAPHIC><TIF19>TR19SE94.019

<GRAPHIC><TIF20>TR19SE94.020

<GRAPHIC><TIF21>TR19SE94.021

<GRAPHIC><TIF22>TR19SE94.022

<GRAPHIC><TIF23>TR19SE94.023

<GRAPHIC><TIF24>TR19SE94.024

<GRAPHIC><TIF25>TR19SE94.025

<GRAPHIC><TIF26>TR19SE94.026

<GRAPHIC><TIF27>TR19SE94.027

<GRAPHIC><TIF28>TR19SE94.028

<GRAPHIC><TIF29>TR19SE94.029

<GRAPHIC><TIF30>TR19SE94.030

<GRAPHIC><TIF31>TR19SE94.031

<GRAPHIC><TIF32>TR19SE94.032

<GRAPHIC><TIF33>TR19SE94.033

<GRAPHIC><TIF34>TR19SE94.034

<GRAPHIC><TIF35>TR19SE94.035

<GRAPHIC><TIF36>TR19SE94.036

<GRAPHIC><TIF37>TR19SE94.037

<GRAPHIC><TIF38>TR19SE94.038

<GRAPHIC><TIF39>TR19SE94.039

<GRAPHIC><TIF40>TR19SE94.040

<GRAPHIC><TIF41>TR19SE94.041

<GRAPHIC><TIF42>TR19SE94.042

<GRAPHIC><TIF43>TR19SE94.043

<GRAPHIC><TIF44>TR19SE94.044

<GRAPHIC><TIF45>TR19SE94.045

<GRAPHIC><TIF46>TR19SE94.046

<GRAPHIC><TIF47>TR19SE94.047

<GRAPHIC><TIF48>TR19SE94.048

<GRAPHIC><TIF49>TR19SE94.049

<GRAPHIC><TIF50>TR19SE94.050

<GRAPHIC><TIF51>TR19SE94.051

<GRAPHIC><TIF52>TR19SE94.052

<GRAPHIC><TIF53>TR19SE94.053

<GRAPHIC><TIF54>TR19SE94.054

<GRAPHIC><TIF55>TR19SE94.055

<GRAPHIC><TIF56>TR19SE94.056

<GRAPHIC><TIF57>TR19SE94.057

<GRAPHIC><TIF58>TR19SE94.058

<GRAPHIC><TIF59>TR19SE94.059

<GRAPHIC><TIF60>TR19SE94.060

BILLING CODE 6560-50-C

25. Section 268.41 is revised to read as follows:

Sec. 268.41 Treatment standards expressed as concentrations in waste extract.

For the requirements previously found in this section and for treatment standards in Table CCWE--Constituent Concentrations in Waste Extracts, refer to Sec. 268.40.

26. Section 268.42 is amended by removing Table 2 and Table 3; revising paragraphs (a) introductory text, (c)(2), and (d); adding a note before paragraph (a); and adding the entry ``CMBST'' into Table 1.--Technology Codes and Description of Technology-Based Standards in alphabetical order, to read as follows:

Sec. 268.42 Treatment standards expressed as specified technologies.

Note: For the requirements previously found in this section in Table 2--Technology-Based Standards By RCRA Waste Code, and Table

3--Technology-Based Standards for Specific Radioactive Hazardous Mixed Waste, refer to Sec. 268.40.

(a) The following wastes in paragraphs (a)(1) and (a)(2) of this section and in the table in Sec. 268.40 ``Treatment Standards for Hazardous Wastes,'' for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in paragraphs (a)(1) and (a)(2) and Table 1 of this section.

* * * * *

Table 1.--Technology Codes and Description of Technology-Based Standards

Technology code	Description of technology-based standards
	*****
CMBST.....	Combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264, subpart O, or 40 CFR part 266, subpart H.
	*****

* * * * *

(c) * * *

(2) The lab pack does not contain any of the wastes listed in Appendix IV to part 268.

* * * * *

(d) Radioactive hazardous mixed wastes are subject to the treatment standards in Sec. 268.40. Where treatment standards are specified for radioactive mixed wastes in the Table of Treatment Standards, those treatment standards will govern. Where there is no specific treatment standard for radioactive mixed waste, the treatment standard for the hazardous waste (as designated by EPA waste code) applies. Hazardous debris containing radioactive waste is subject to the treatment standards specified in Sec. 268.45.

28. Section 268.43 is revised to read as follows:

Sec. 268.43 Treatment standards expressed as waste concentrations.

For the requirements previously found in this section and for treatment standards in Table CCW--Constituent Concentrations in Wastes, refer to Sec. 268.40.

29. Section 268.45(b)(2) is revised to read as follows:

Sec. 268.45 Treatment standards for hazardous debris.

* * * * *

(b) * * *

(2) Debris contaminated with listed waste. The contaminants subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which treatment standards are established for the waste under Sec. 268.40.

30. Section 268.46 is revised to read as follows:

Sec. 268.46 Alternative treatment standards based on HTMR.

For the treatment standards previously found in this section, refer to Sec. 268.40.

31. In Subpart D, Sec. 268.48 is added to read as follows:

Sec. 268.48 Universal Treatment Standards

(a) Table UTS identifies the hazardous constituents, along with the nonwastewater and wastewater treatment standard levels, that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in Sec. 268.2(i), these treatment standards may not be exceeded. Compliance with these treatment standards is measured by an analysis of grab samples, unless otherwise noted in the following Table UTS.

Sec. 268.48 Table UTS--Universal Treatment Standards

Regulated constituent--common name	CAS\1\ No.	Wastewater standard. Concentration in mg/kg\3\ unless noted as ``mg/l TCLP''	Nonwastewater standard. Concentration in mg/\2\
Acenaphthylene	208-96-8	0.059	3.4
Acenaphthene	83-32-9	0.059	3.4
Acetone	67-64-1	0.28	160
Acetonitrile	75-05-8	5.6	1.8
Acetophenone	96-86-2	0.010	9.7
2-Acetylaminofluorene	53-96-3	0.059	140
Acrolein	107-02-8	0.29	NA
Acrylamide	79-06-1	19	23

Acrylonitrile	107-13-1	0.24	84
Aldrin	309-00-2	0.021	0.066
4-Aminobiphenyl	92-67-1	0.13	NA
Aniline	62-53-3	0.81	14
Anthracene	120-12-7	0.059	3.4
Aramite	140-57-8	0.36	NA
alpha-BHC	319-84-6	0.00014	0.066
beta-BHC	319-85-7	0.00014	0.066
delta-BHC	319-86-8	0.023	0.066
gamma-BHC	58-89-9	0.0017	0.066
Benzene	71-43-2	0.14	10
Benz(a)anthracene	56-55-3	0.059	3.4
Benzal chloride	98-87-3	0.055	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205-99-2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207-08-9	0.11	6.8
Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
Benzo(a)pyrene	50-32-8	0.061	3.4
Bromodichloromethane	75-27-4	0.35	15
Methyl bromide (Bromomethane)	74-83-9	0.11	15
4-Bromophenyl phenyl ether	101-55-3	0.055	15
n-Butyl alcohol	71-36-3	5.6	2.6
Butyl benzyl phthalate	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56-23-5	0.057	6.0
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16

Chlorobenzene..... 108-90-7
0.057 6.0
Chlorobenzilate..... 510-15-6
0.10 NA
2-Chloro-1,3-butadiene..... 126-99-8
0.057 0.28
Chlorodibromomethane..... 124-48-1
0.057 15
Chloroethane..... 75-00-3
0.27 6.0
bis(2-Chloroethoxy)methane..... 111-91-1
0.036 7.2
bis(2-Chloroethyl)ether..... 111-44-4
0.033 6.0
Chloroform..... 67-66-3
0.046 6.0
bis(2-Chloroisopropyl)ether..... 108-60-1
0.055 7.2
p-Chloro-m-cresol..... 59-50-7
0.018 14
2-Chloroethyl vinyl ether..... 110-75-8
0.062 NA
Chloromethane (Methyl chloride)..... 74-87-3
0.19 30
2-Chloronaphthalene..... 91-58-7
0.055 5.6
2-Chlorophenol..... 95-57-8
0.044 5.7
3-Chloropropylene..... 107-05-1
0.036 30
Chrysene..... 218-01-9
0.059 3.4
o-Cresol..... 95-48-7
0.11 5.6
m-Cresol (difficult to distinguish from p-cresol).... 108-39-4
0.77 5.6
p-Cresol (difficult to distinguish from m-cresol).... 106-44-5
0.77 5.6
Cyclohexanone..... 108-94-1
0.36 0.75 mg/l TCLP
1,2-Dibromo-3-chloropropane..... 96-12-8
0.11 15
Ethylene dibromide (1,2-Dibromoethane)..... 106-93-4
0.028 15
Dibromomethane..... 74-95-3
0.11 15
2,4-D (2,4-Dichlorophenoxyacetic acid)..... 94-75-7
0.72 10
o,p'-DDD..... 53-19-0
0.023 0.087
p,p'-DDD..... 72-54-8
0.023 0.087
o,p'-DDE..... 3424-82-6
0.031 0.087
p,p'-DDE..... 72-55-9
0.031 0.087

o,p'-DDT..... 789-02-6
0.0039 0.087
p,p'-DDT..... 50-29-3
0.0039 0.087
Dibenz(a,h)anthracene..... 53-70-3
0.055 8.2
Dibenz(a,e)pyrene..... 192-65-4
0.061 NA
m-Dichlorobenzene..... 541-73-1
0.036 6.0
o-Dichlorobenzene..... 95-50-1
0.088 6.0
p-Dichlorobenzene..... 106-46-7
0.090 6.0
Dichlorodifluoromethane..... 75-71-8
0.23 7.2
1,1-Dichloroethane..... 75-34-3
0.059 6.0
1,2-Dichloroethane..... 107-06-2
0.21 6.0
1,1-Dichloroethylene..... 75-35-4
0.025 6.0
trans-1,2-Dichloroethylene..... 156-60-5
0.054 30
2,4-Dichlorophenol..... 120-83-2
0.044 14
2,6-Dichlorophenol..... 87-65-0
0.044 14
1,2-Dichloropropane..... 78-87-5
0.85 18
cis-1,3-Dichloropropylene..... 10061-01-5
0.036 18
trans-1,3-Dichloropropylene..... 10061-02-6
0.036 18
Dieldrin..... 60-57-1
0.017 0.13
Diethyl phthalate..... 84-66-2
0.20 28
2-4-Dimethyl phenol..... 105-67-9
0.036 14
Dimethyl phthalate..... 131-11-3
0.047 28
Di-n-butyl phthalate..... 84-74-2
0.057 28
1,4-Dinitrobenzene..... 100-25-4
0.32 2.3
4,6-Dinitro-o-cresol..... 534-52-1
0.28 160
2,4-Dinitrophenol..... 51-28-5
0.12 160
2,4-Dinitrotoluene..... 121-14-2
0.32 140
2,6-Dinitrotoluene..... 606-20-2
0.55 28
Di-n-octyl phthalate..... 117-84-0
0.017 28

p-Dimethylaminoazobenzene..... 60-11-7
0.13 NA
Di-n-propylnitrosamine..... 621-64-7
0.40 14
1,4-Dioxane..... 123-91-1
NA 170
Diphenylamine (difficult to distinguish from 122-39-4
0.92 13
diphenylnitrosamine).
Diphenylnitrosamine (difficult to distinguish from 86-30-6
0.92 13
diphenylamine).
1,2-Diphenylhydrazine..... 122-66-7
0.087 NA
Disulfoton..... 298-04-4
0.017 6.2
Endosulfan I..... 939-98-8
0.023 0.066
Endosulfan II..... 33213-6-5
0.029 0.13
Endosulfan sulfate..... 1-31-07-8
0.029 0.13
Endrin..... 72-20-8
0.0028 0.13
Endrin aldehyde..... 7421-93-4
0.025 0.13
Ethyl acetate..... 141-78-6
0.34 33
Ethyl cyanide (Propanenitrile)..... 107-12-0
0.24 360
Ethyl benzene..... 100-41-4
0.057 10
Ethyl ether..... 60-29-7
0.12 160
bis(2-Ethylhexyl) phthalate..... 117-81-7
0.28 28
Ethyl methacrylate..... 97-63-2
0.14 160
Ethylene oxide..... 75-21-8
0.12 NA
Famphur..... 52-85-7
0.017 15
Fluoranthene..... 206-44-0
0.068 3.4
Fluorene..... 86-73-7
0.059 3.4
Heptachlor..... 76-44-8
0.0012 0.066
Heptachlor epoxide..... 1024-57-3
0.016 0.066
Hexachlorobenzene..... 118-74-1
0.055 10
Hexachlorobutadiene..... 87-68-3
0.055 5.6
Hexachlorocyclopentadiene..... 77-47-4
0.057 2.4

HxCDDs (All Hexachlorodibenzo-p-dioxins)..... NA
0.000063 0.001
HxCDFs (All Hexachlorodibenzofurans)..... NA
0.000063 0.001
Hexachloroethane..... 67-72-1
0.055 30
Hexachloropropylene..... 1888-71-7
0.035 30
Indeno (1,2,3-c,d) pyrene..... 193-39-5
0.0055 3.4
Iodomethane..... 74-88-4
0.19 65
Isobutyl alcohol..... 78-83-1
5.6 170
Isodrin..... 465-73-6
0.021 0.066
Isosafrole..... 120-58-1
0.081 2.6
Kepone..... 143-50-8
0.0011 0.13
Methacrylonitrile..... 126-98-7
0.24 84
Methanol..... 67-56-1
5.6 0.75 mg/l TCLP
Methapyrilene..... 91-80-5
0.081 1.5
Methoxychlor..... 72-43-5
0.25 0.18
3-Methylcholanthrene..... 56-49-5
0.0055 15
4,4-Methylene bis(2-chloroaniline)..... 101-14-4
0.50 30
Methylene chloride..... 75-09-2
0.089 30
Methyl ethyl ketone..... 78-93-3
0.28 36
Methyl isobutyl ketone..... 108-10-1
0.14 33
Methyl methacrylate..... 80-62-6
0.14 160
Methyl methansulfonate..... 66-27-3
0.018 NA
Methyl parathion..... 298-00-0
0.014 4.6
Naphthalene..... 91-20-3
0.059 5.6
2-Naphthylamine..... 91-59-8
0.52 NA
o-Nitroaniline..... 88-74-4
0.27 14
p-Nitroaniline..... 100-01-6
0.028 28
Nitrobenzene..... 98-95-3
0.068 14
5-Nitro-o-toluidine..... 99-55-8
0.32 28

o-Nitrophenol..... 88-75-5
0.028 13
p-Nitrophenol..... 100-02-7
0.12 29
N-Nitrosodiethylamine..... 55-18-5
0.40 28
N-Nitrosodimethylamine..... 62-75-9
0.40 2.3
N-Nitroso-di-n-butylamine..... 924-16-3
0.40 17
N-Nitrosomethylethylamine..... 10595-95-6
0.40 2.3
N-Nitrosomorpholine..... 59-89-2
0.40 2.3
N-Nitrosopiperidine..... 100-75-4
0.013 35
N-Nitrosopyrrolidine..... 930-55-2
0.013 35
Parathion..... 56-38-2
0.014 4.6
Total PCBs (sum of all PCB isomers, or all Aroclors). 1336-36-3
0.10 10
Pentachlorobenzene..... 608-93-5
0.055 10
PeCDDs (All Pentachlorodibenzo-p-dioxins)..... NA
0.000063 0.001
PeCDFs (All Pentachlorodibenzofurans)..... NA
0.000035 0.001
Pentachloroethane..... 76-01-7
0.055 6.0
Pentachloronitrobenzene..... 82-68-8
0.055 4.8
Pentachlorophenol..... 87-86-5
0.089 7.4
Phenacetin..... 62-44-2
0.081 16
Phenanthrene..... 85-01-8
0.059 5.6
Phenol..... 108-95-2
0.039 6.2
Phorate..... 298-02-2
0.021 4.6
Phthalic acid..... 100-21-0
0.055 28
Phthalic anhydride..... 85-44-9
0.055 28
Pronamide..... 23950-58-5
0.093 1.5
Pyrene..... 129-00-0
0.067 8.2
Pyridine..... 110-86-1
0.014 16
Safrole..... 94-59-7
0.081 22
Silvex (2,4,5-TP)..... 93-72-1
0.72 7.9

2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)..... 93-76-5
0.72 7.9
1,2,4,5-Tetrachlorobenzene..... 95-94-3
0.055 14
TCDDs (All Tetrachlorodibenzo-p-dioxins)..... NA
0.000063 0.001
TCDFs (All Tetrachlorodibenzofurans)..... NA
0.000063 0.001
1,1,1,2-Tetrachloroethane..... 630-20-6
0.057 6.0
1,1,2,2-Tetrachloroethane..... 79-34-6
0.057 6.0
Tetrachloroethylene..... 127-18-4
0.056 6.0
2,3,4,6-Tetrachlorophenol..... 58-90-2
0.030 7.4
Toluene..... 108-88-3
0.080 10
Toxaphene..... 8001-35-2
0.0095 2.6
Bromoform (Tribromomethane)..... 75-25-2
0.63 15
1,2,4-Trichlorobenzene..... 120-82-1
0.055 19
1,1,1-Trichloroethane..... 71-55-6
0.054 6.0
1,1,2-Trichloroethane..... 79-00-5
0.054 6.0
Trichloroethylene..... 79-01-6
0.054 6.0
Trichloromonofluoromethane..... 75-69-4
0.020 30
2,4,5-Trichlorophenol..... 95-95-4
0.18 7.4
2,4,6-Trichlorophenol..... 88-06-2
0.035 7.4
1,2,3-Trichloropropane..... 96-18-4
0.85 30
1,1,2-Trichloro-1,2,2-trifluoroethane..... 76-13-1
0.057 30
tris-(2,3-Dibromopropyl) phosphate..... 126-72-7
0.11 0.10
Vinyl chloride..... 75-01-4
0.27 6.0
Xylenes-mixed isomers (sum of o-, m-, and p-xylene 1330-20-7
0.32 30
concentrations).
Antimony..... 7440-36-0
1.9 2.1 mg/l TCLP
Arsenic..... 7440-38-2
1.4 5.0 mg/l TCLP
Barium..... 7440-39-3
1.2 7.6 mg/l TCLP
Beryllium..... 7440-41-7
0.82 0.014 mg/l TCLP
Cadmium..... 7440-43-9
0.69 0.19 mg/l TCLP

Chromium (Total).....	7440-47-3	
2.77	0.86 mg/l TCLP	
Cyanides (Total)\4\.....	57-12-5	
1.2	590	
Cyanides (Amenable)\4\.....	57-12-5	
0.86	30	
Fluoride.....	16964-48-8	
35	NA	
Lead.....	7439-92-1	
0.69	0.37 mg/l TCLP	
Mercury--Nonwastewater from Retort.....	7439-97-6	
NA	0.20 mg/l TCLP	
Mercury--All Others.....	7439-97-6	
0.15	0.025 mg/l TCLP	
Nickel.....	7440-02-0	
3.98	5.0 mg/l TCLP	
Selenium.....	7782-49-2	
0.82	0.16 mg/l TCLP	
Silver.....	7440-22-4	
0.43	0.30 mg/l TCLP	
Sulfide.....	8496-25-8	
14	NA	
Thallium.....	7440-28-0	
1.4	0.078 mg/l TCLP	
Vanadium.....	7440-62-2	
4.3	0.23 mg/l TCLP	
Zinc\5\.....	7440-66-6	
2.61	5.3 mg/l TCLP	

\1\CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

\2\Concentration standards for wastewaters are expressed in mg/l are based on analysis of composite samples.

\3\Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

\4\Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

\5\Zinc is not an ``underlying hazardous constituent'' in characteristic wastes, according to the definition at

268.2(i).
Note: NA means not applicable.

Appendix IV to Part 268 [Revised]

32. Appendix IV to part 268 is revised to read as follows:

Appendix IV to Part 268--Wastes Excluded From Lab Packs Under the Alternative Treatment Standards of Sec. 268.42(c)

Hazardous waste with the following EPA Hazardous Waste Codes may not be placed in lab packs under the alternative lab pack treatment standards of Sec. 268.42(c): D009, F019, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, U151.

Appendix V to Part 268 [Removed]

33. Appendix V to part 268 is removed and reserved.

Appendix X to Part 268 [Added]

34. Appendix X to part 268 is added to read as follows:

Appendix X to Part 268--Recordkeeping, Notification, and/or Certification Requirements

Recipient of Entity	Scenario	Recordkeeping, notification, and/or certification requirements	Frequency
I. Generator..... Treatment or storage facility.	A. Waste does not meet applicable treatment standards or exceeds applicable prohibition levels (see Sec. 268.7(a)(1)).	Notice must include: <bullet>EPA hazardous waste number. <bullet>Constituents of concern. <bullet>Treatability group. <bullet>Manifest number. <bullet>Waste analysis data (where available).	Each shipment.....

	B. Waste can be disposed of without further treatment (meets applicable treatment standards or applicable prohibition treatment levels.	Each shipment.....	**Land disposal** facility.	Notice and certification statement that waste meets applicable treatment standards or applicable prohibition levels. Notice must include: <bullet>EPA hazardous waste number. <bullet>Constituents of concern. <bullet>Treatability group. <bullet>Manifest number. <bullet>Waste analysis data (where available). Certification statement required under Sec. 268.7(a)(2)(ii) that waste complies with treatment standards and prohibitions.
	C. Waste is subject to exemption from a prohibition on the type of **land disposal** utilized for the waste,	Each shipment.....	Receiving facility.	Notice must include: <bullet>Statement that waste is not prohibited from **land disposal**. <bullet>EPA hazardous waste number.

such as a case-by-
<bullet>Constituents of
case extension
concern.
under Sec. 268.5,
<bullet>Treatability
an exemption under
group.
Sec. 268.6, or a
<bullet>Manifest number.
nationwide
<bullet>Waste analysis
capacity variance
data (where available).
(see Sec.
<bullet>Date the waste is
268.7(a)(3)).
subject to the
prohibitions.

	D. Waste is being accumulated in tanks or containers regulated under 40 CFR 262.34 and is being treated in such tanks or containers to meet applicable treatment standards (see Sec. 268.7(a)(4)).	Minimum of 30 days prior to treatment activity.	EPA Regional Administrator (or designated representative) or authorized State. Delivery must be verified. If waste is shipped off-site, generator also must comply with notification requirement of Sec. 268.7(a)(2).
	E. Generator is managing a lab pack containing certain wastes and wishes to use an alternative	Each shipment.....	Treatment facility. Notice in accordance with Sec. 268.7(a)(1), (a)(5), and (a)(6), where applicable. Certification in accordance with Sec.

		treatment standard (see Sec. 268.7(a)(8)).	268.7(a)(8).
	F. Small quantity generators with applicable notification and certification requirements in Sec. 268.7(a). Generator also must retain copy of the notification and certification together with tolling agreement on-site for at least 3 years after termination or expiration of agreement.	Initial shipment..... Must comply with tolling agreements (pursuant to 40 CFR 262.20(e)) (see Sec. 268.7(a)(9)).	Treatment facility.
	G. Generator has determined waste is restricted based solely on his knowledge of the waste (see Sec. 268.7(a)(5)).	N/A..... All supporting data must be retained on-site in generator's files.	Generator's file...
	H. Generator has determined waste is restricted based on testing waste or an extract (see Sec. 268.7(a)(5)).	N/A..... All waste analysis data must be retained on-site in generator's files.	Generator's file...
	I. Generator has determined that	One-time..... Notice of generation and subsequent exclusion	Generator's file...

waste is excluded from the definition of hazardous or solid waste, or exemption from Subtitle C regulation, and information regarding the disposition of the waste.

J. Generator (or treater) claims that hazardous debris is excluded from the definition of hazardous waste under 40 CFR 261.3(f)(1) (see Sec. 268.7(d)).

One-time..... Notice must include:
<bullet>Name and address of Subtitle D facility receiving treated debris.
<bullet>EPA hazardous waste number and description of debris as initially generated.
<bullet>Technology used to treat the debris (Table 1 of Sec. 268.45).
Certification and recordkeeping in accordance with Sec. 268.7(d)(3).

EPA Regional Administrator or authorized State. Notification must be updated as necessary under Sec. 268.7(d)(2).

K. Generator (or treater) claims that hazardous debris is excluded from the definition of hazardous waste under 40 CFR 261.3(f)(1) (see Sec. 268.7(d)).

One-time..... Notice must include:
<bullet>Name and address of Subtitle D facility

Generator's (or treater's) files and EPA Regional

characteristic
Administrator or receiving the waste.
wastes are no
authorized State. <bullet>EPA hazardous
longer hazardous
Notification must waste number and
(see Sec. be
updated as description of waste as
268.9(d)).
necessary under initially generated.
Sec.
268.9(d). <bullet>Treatability

group.

<bullet>Underlying

hazardous constituents.

Certification in

accordance with Sec.

268.9(d)(2).

L. Other N/A.....
Generator's file... Generator must retain a
recordkeeping
copy of all notices,
requirements (see
certifications,
Sec. 268.7(a)(7)).
demonstrations, waste

analysis data, and other

documentation produced

pursuant to Sec. 268.7

on-site for at least 5

years from the date that

the waste was last sent

to on-site or off-site

treatment, storage, or

disposal. This period is

automatically extended

during enforcement

actions or as requested

by the Administrator.

II. Treatment Facility.	A. Waste shipped from treatment facility.	Each shipment.....	**Land disposal** facility (see Sec. 268.7(b)(4), (b)(5)).	Notice must include: <bullet>EPA hazardous waste number. <bullet>Constituents of concern. <bullet>Treatability group. <bullet>Manifest number. <bullet>Waste analysis data (where available). Applicable certification, in accordance with Sec. 268.7(b)(5)(i), (ii) or (iii), stating that the waste or treatment residue has been treated in compliance with applicable treatment standards and prohibitions.
	B. Waste treatment Receiving facility.	Each shipment.....	Treatment, storage, or **disposal** facility must comply with all notice and certification requirements applicable to generators.	Treatment, storage, or residue from a treatment or storage facility will be further managed at a different treatment or storage facility

	(see Sec. 268.7(b)(6)).		
	C. Where wastes are recyclable materials used in a manner constituting **disposal** subject to Sec. 266.20(b) (see Sec. 268.7(b)(7)).	Each shipment.....	Regional Administrator (or delegated representative).
	No notification to receiving facility required pursuant to Sec. 268.7(b)(4).		
Certification as described in Sec. 268.7(b)(5) and notice with information listed in Sec. 268.7(b)(4), except manifest number. Recycling facility must keep records of the name and location of each entity receiving hazardous waste-derived products.			
III. **Land Disposal** Facility.	A. Wastes accepted by **land disposal** facility (see Sec. 268.7(c)).	N/A.....	N/A.....
	Maintain copies of notice and certifications specified in Sec. 268.7(a) and (b).		

Certification Statements

A. I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268, subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (Sec. 268.7(a)(2)(ii))

B. I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack does not contain any wastes identified at Sec. 268.42(c)(2). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment. (Sec. 268.7(a)(8))

C. I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR part 268, subpart D, and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (Sec. 268.7(b)(5)(i))

D. I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (Sec. 268.7(b)(5)(ii))

E. I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents, despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (Sec. 268.7(b)(5)(iii))

F. I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (Sec. 268.7(b)(5)(iv))

G. I certify under penalty of law that the debris have been treated in accordance with the requirements of 40 CFR 268.45. am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment. (Sec. 268.7(d)(3)(iii))

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

35. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

Subpart A--Requirements for Final Authorization

36. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by date of publication in the Federal Register, and by adding the following entries to Table 2 in chronological order by effective date in the Federal Register:

Sec. 271.1 Purpose and scope.

* * * * *

(j) * * *

Table 1.--Regulations Implementing the Hazardous and Solid Waste Amendments of 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* * * * *			
September 19, 1994.....	**Land Disposal** Restrictions Phase II--Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes\4\ in Sec. 268.38.	[Insert FR **page** numbers].....	December 19, 1994.
* * * * *			

*****

\4\The following portions of this rule are not HSWA regulations: Secs. 260.30, 260.31, 261.2.

Table 2.--Self-Implementing Provisions of the Solid Waste Amendments of 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference

---
---

*

* * * * *

December 19, 1994	Prohibition on **land disposal** of newly listed and identified wastes.	3004(g)(4)(C) and 3004(m)	September 19, 1994. 59 FR [insert **page** numbers].
September 19, 1995	Establishment of treatment standards for D001 and D012-D017 wastes injected into nonhazardous deep wells.	3004(m)	Do.
September 19, 1996	Prohibition on **land disposal** of radioactive waste mixed with the newly listed or identified wastes, including soil and debris.	3004(g)(4)(C) and 3004(m)	Do.

*

* * * * *

---

* * * * *

[FR Doc. 94-22493 Filed 9-16-94; 8:45 am]
BILLING CODE 6560-50-P

[Federal Register: January 3, 1995 (Volume 60, Number 1)]
[Rules and Regulations]
[Page 241-302]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr03ja95-22]

[[Page 241]]

Part V
Environmental Protection Agency

---

40 CFR Part 268

Land Disposal Restrictions Phase II--Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes; Final Rule

[[Page 242]]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[FRL-5129-2]

Land Disposal Restrictions Phase II--Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Wastes

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; technical amendments.

SUMMARY: On September 19, 1994, EPA published regulations promulgating congressionally-mandated prohibitions on land disposal of certain hazardous wastes. This notice corrects errors and clarifies the language in the preamble and regulation of the September 19, 1994 final rule.

EFFECTIVE DATE: This rule is effective on December 19, 1994.

ADDRESSES: Copies of the rule can be obtained from the RCRA Docket (5305), U.S. Environmental Protection Agency, Room 2616, 401 M Street, S.W., Washington, D.C. 20460. The RCRA Docket is open from 9:00 am to 4:00 pm Monday through Friday, except for federal holidays. The public must make an appointment to review docket materials by calling (202)

260-9327. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424-9346 (toll free) or (703) 920-9810 in the Washington, DC metropolitan area. For technical information contact Doug Heimlich (5302W), Office of Solid Waste, 401 M Street, S.W., Washington, DC 20460, (703) 308-8489.

SUPPLEMENTARY INFORMATION:

I. Reasons and Basis for Today's Amendment

The Agency has received comments from the regulated community and State agencies requesting clarification on certain aspects of the September 19, 1994 Phase II final rule (59 FR 47982). Today's amendment responds to these comments.

II. Amendments to the Phase II Final Rule

A. Section 268.2

Like zinc, vanadium is not considered to be an ``underlying hazardous constituent'' in characteristic wastes. In the definition of underlying hazardous constituent at 268.2(i), vanadium was inadvertently left out as an exception to the definition. It is being placed as an exception in the definition at 268.2(i) in today's amendment.

B. Section 268.7

In the preamble of the Phase II final rule, EPA stated that, as a simplifying measure, it was amending the LDR notification requirements to minimize the amount of information that must be placed on the LDR notification in certain circumstances (see 59 FR 48004). Prior to promulgation of the Phase II rule, the hazardous constituents in F001-F005 spent solvents, F039, wastes subject to the California list provisions of Sec. 268.32 or RCRA section 3004(d), and underlying hazardous constituents in certain characteristic wastes had to be listed on the LDR notification. In Phase II, this language was changed

so that if the generator/treater monitors for all the hazardous constituents in F001-F005 spent solvents, F039, and underlying hazardous constituents in certain characteristic wastes, then there would be no need to list any of the constituents on the LDR notification. If, however, the generator/treater is monitoring for a subset of these constituents, the subset of constituents in the waste (or, in the case of underlying hazardous constituents in certain characteristic wastes, the ones reasonably expected to be present at point of generation) would be required to be listed on the LDR notification. In making this change, EPA inadvertently left out language in Secs. 268.7(a)(1)(ii), 268.7(a)(2)(i)(B), and 268.7(b)(4)(ii) applying this provision to California list wastes prohibited pursuant to Sec. 268.32 or RCRA section 3004(d). A reference to these California list wastes is therefore being added to the sections mentioned above in today's amendment.

An error was also found in Sec. 268.7(a)(1). In this section, EPA explained that before the Phase II final rule a generator managing a restricted waste that did not meet the applicable treatment standards set forth in Subpart D of Part 268, or exceeds the prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d), was required, with each shipment of waste, to notify the treatment or storage facility in writing of the appropriate treatment standards set forth in Subpart D of this part and any applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d).

As explained on page 48004 of the Phase II preamble, EPA dropped the requirement to include the treatment standard or the reference to the treatment standard on the LDR notification. EPA overlooked the regulatory language above (in italics) when modifications were made in the Phase II rule. Thus it is being removed in this technical amendment. The statement is changed to read, ``* * * notify the treatment or storage facility in writing.''

Another error was made in Sec. 268.7(a)(1). Paragraph (v) should have been redesignated as paragraph (vi), and a new paragraph (v) added. Although paragraph (v) was revised with the new language, the existing language that should have been included in paragraph (vi) was inadvertently deleted. Paragraph (vi), with the language that appeared as paragraph (v) before the Phase II rule, is being added in today's amendments. Also, in order for the new paragraph to read properly, paragraph (iv) was changed to delete the final word ``and,'' and paragraph (v) was changed to add the word ``and'' at the end.

The same error described in the previous paragraph was also made in Sec. 268.7(a)(3): paragraph (vi) should have been redesignated as paragraph (vii), and a new paragraph (vi) added. Paragraph (vii), with the language that appeared as paragraph (vi) before the Phase II rule, is being reinserted today. Also, paragraph (a)(3)(vi) is being revised today because it had been merely reproduced (incorrectly) from paragraph (a)(1)(v).

In addition, in Sec. 268.7(a)(8), EPA modified the alternative treatment standards for lab packs from identifying the wastes that can be included in lab packs to specifying those wastes that are prohibited from being placed in lab packs. EPA made this change in order to simplify and clarify this provision. The certification language required under this section is being changed in this technical amendment to say that the lab pack ``contains only wastes which have not been excluded under appendix IV to 40 CFR part 268.'' The

certification language that reads ``or solid wastes not [[Page 243]] subject to regulation under 40 CFR part 261'' is being removed and is no longer considered necessary, because the regulated community has in appendix IV a list of wastes that are prohibited from placement in a lab pack. The Agency believes that deleting this statement is not a substantive change, but rather alleviates unnecessary language.

Finally, in the introductory paragraph of Sec. 268.7(d) and in Sec. 268.7(d)(1), generators or treaters who claim an exemption for hazardous debris from the definition of hazardous waste under Sec. 261.3(e) are subject to notification and certification requirements that, previously, were to be submitted to the ``Director or authorized State.'' EPA recognizes that this designation is vague, and is specifying in today's amendment that the notification and certification requirements of Sec. 268.7(d) be submitted to the Regional Administrator (or his designated representative) or State authorized to implement Part 268 requirements, and in Sec. 268.7(d)(1) to be submitted to the EPA Regional hazardous waste management division director (or his designated representative) or State authorized to implement part 268 requirements.

C. Section 268.9

A typesetting error was made in Sec. 268.9(a), which repeated language that already was in the paragraph. The paragraph is located in the middle column of 59 FR 48045, starting with, If the generator determines that his waste displays the characteristic of ignitability * * * and finishes with, as specified in paragraph (b) of this section. This redundant portion of the paragraph is deleted in today's amendment. Additionally, in section 268.9(d)(2)(i), it states that in treating wastes that exhibit a characteristic, the underlying hazardous constituents must also be treated, and if not, the certification in Sec. 268.7(b)(5)(v) applies. There is no section 268.7(b)(5)(v), and instead the intent was to reference the certification under section 268.7(b)(5)(iv). The erroneous reference is changed in today's amendment.

D. Section 268.40

EPA established that for certain characteristic wastes managed in non-Clean Water Act (CWA) wastewater treatment systems, non-CWA-equivalent systems, or non-Class I injection wells, the underlying hazardous constituents reasonably expected to be present in the waste at point of generation should be treated as well as the hazardous characteristic. For D018-D043, characteristic wastes, this applies to both wastewaters and nonwastewaters. While in the consolidated treatment table in Sec. 268.40 it is noted that the D018-D043 nonwastewaters need to meet Sec. 268.48 standards, this is not indicated for the wastewaters. The corrected table will include the requirements for wastewaters that are managed in non-CWA wastewater treatment systems, non-CWA-equivalent systems, or non-Class I deep injection wells.

An improvement in the Phase II final rule was the simplification of

two equivalent technology-specific combustion standards in: Table 1--Technology Codes and Description of Technology-Based Standards in 40 CFR 268.42. The Agency consolidated the descriptions of INCIN

(incineration) and FSUBS (fuel substitution), by combining them into one term, CMBST (combustion). In prior rulemakings, the treatment standard for both wastewaters and nonwastewaters of Acetaldehyde (U001) was listed as ``FSUBS or INCIN;'' In the Phase II final rule, a typographical error left out ``FSUBS'' and only listed the treatment standard, ``INCIN.'' The treatment standard for U001 is thus changed from ``FSUBS or INCIN'' to ``CMBST.''

The following changes are also made:

<bullet> For Ethyl acetate, under F001, F002, F003, F004, and F005, the CAS number is corrected to read, ``141-78-6;''

<bullet> For Tetrachloroethylene under K043, the CAS number is corrected to read, ``127-18-4;''

<bullet> For Diphenylamine under K022 and K083, the CAS number is corrected to read, ``122-39-4;''

<bullet> For bis(2-Chloroisopropyl)ether under U027, the CAS number is corrected to read, ``39638-32-9.''

<bullet> For Phthalic anhydride under K023, K024, K093, K094, and U190, it is clarified that Phthalic anhydride is measured as ``Terephthalic acid,'' or ``Phthalic acid,'' which are synonymous terms for the same substance.

These changes are all made in the consolidated treatment table in section 268.40 in today's amendment.

E. Section 268.42

The definition of combustion (CMBST), as stated in Sec. 268.42 Table 1, is: ``combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264 subpart O, and part 266, subpart H.'' The definition inadvertently deleted the management of hazardous waste during the period of interim status, covered in part 265, subpart O. At 59 FR 48003, EPA affirmed that combining INCIN (incineration) and FSUBS (fuel substitution) into one term, CMBST (combustion) made no substantive change to the promulgated standards, and, therefore, did not require notice and comment. The Agency's leaving out part 265, subpart O in the definition of CMBST (combustion), therefore, was an oversight that is being corrected in today's amendment. Furthermore, the parenthetical statement on page 48002 about part 265 interim status standards was not intended to be in the preamble, and should be disregarded.

F. Section 268.48

In the table of Universal Treatment Standards, it was footnoted that zinc was not considered an ``underlying hazardous constituent'' in characteristic wastes, according to the definition at 268.2(i). Vanadium also is not considered an underlying hazardous constituent in characteristic wastes, and thus, is appropriately footnoted in this
table in today's amendment.

G. Appendix X to Part 268

As was mentioned in the amendment for 268.7(a)(8), EPA modified the alternative treatment standards for lab packs from identifying the wastes that can be included in lab packs to specifying those wastes that are prohibited from being placed in lab packs. As explained earlier in this rule, the language of the Sec. 268.7(a)(8) certification is being changed in today's rule. Appendix X is also being changed to include the revised certification language for the convenience of the reader.

III. Clarifications

A. Clarification of State Authority Policy for UTS

The Universal Treatment Standards (UTS) were promulgated in the Phase II final rule pursuant to HSWA authority. In most cases UTS are the same levels as the previous LDR treatment standards, while about forty percent of the levels went up or down. In most of these cases, the change in the limits actually reflect adjustments in the limits of analytical detection, thus actual treatment will likely continue to destroy or remove organics to nondetectable levels. Even in those cases where the level has changed, the technology basis of the treatment standard has not. Therefore the changes to the treatment standards should not be viewed as more or less stringent.

Concern has been raised regarding how the UTS should apply in States authorized for the LDRs; specifically, what treatment standards must be met [[Page 244]] by a facility located in a LDR-authorized State: the Phase II UTS levels, or the treatment standards in a State's authorized RCRA program? An additional concern is whether the authorized States would lose their ability to implement their LDR treatment standards if they were superseded by the UTS.

A memorandum from Michael Shapiro, Director of the Office of Solid Waste, to the EPA Regional Waste Management Division Directors, announced that the new UTS are neither more nor less stringent than the previous standards. Therefore, the new standards do not supersede existing standards in States authorized. States authorized for the LDRs for some or all waste streams would continue to implement the treatment standards for the streams for which they are authorized. The new UTS do not apply, for those waste streams, until the State has incorporated them into State law. EPA strongly urges States to implement the new UTS standards as soon as possible, both for simplicity of implementation and national consistency. In any case, State law (as interpreted by the State) would determine which standards applied. This approach would avoid the dual regulatory problem which would occur during the time before new HSWA requirements are adopted and authorized in the State.

EPA has a strong interest in uniformity and consistency of regulations and believes that the improvements in the UTS meet these objectives. Thus, States are encouraged to adopt and apply for authorization of the Phase II LDR rule. States that are currently authorized for portions of the LDRs may submit an abbreviated authorization revision application for the UTS. Details about what would be required for this abbreviated authorization are in the memorandum, which can be obtained by calling the RCRA docket.

It should be noted that the Agency, generally, is not relinquishing its statutory responsibility to implement significant new HSWA rules in States as soon as the rules become effective. The new approach set out

in the memorandum is reserved only for areas of the hazardous waste program already authorized and regulated by the States, not new areas of the HSWA regulations. For example, the Phase II rule established
treatment standards for several newly listed wastes; these new requirements are immediately effective in the States and will be enforced by EPA.

B. Flowchart Clarification

EPA is clarifying in today's amendment the Phase II flowchart entitled, ``Implementation of Key Phase II LDRs,'' at 59 FR 48018. The second block from the bottom left poses the question, ``Is the waste a mixture of a newly identified TC organic waste (D012-43) with a prohibited listed waste . . .'' This language is not correct and should read in full: ``Is the waste a prohibited listed waste, or one of the newly listed Phase II wastes, that also exhibits an organic toxicity
characteristic?''

Another clarification is being made on page 48021, in the first diamond. Questions have been raised as to whether the ``constituents'' mentioned there include underlying hazardous constituents. No, ``constituents'' does not include UHCs. The wording inside the diamond should say ``Does the treatment standard for the listed waste include the treatment standard for the constituent that causes the waste to exhibit the characteristic?''

C. Telephone Number Correction

At 59 FR 47983, Richard Kinch's name appeared as an EPA contact for ``other information'' about the Phase II final rule. The phone number provided in the Phase II rule, (703) 308-8414, is incorrect; Mr. Kinch's telephone number is (703) 308-8434.

IV. Rationale for Immediate Effective Date

Today's notice does not create any new regulatory requirements; rather, it restates and clarifies requirements already in effect by correcting a number of errors in the September 19, 1994 final rule (59 FR 47982). For these reasons, EPA finds that good cause exists under section 3010(b)(3) of RCRA, 42 U.S.C. 9903(b)(3), to provide for an immediate effective date. In addition, there already was full opportunity to comment on all of these issues during the rulemaking so that further comment is unnecessary. For the same reasons, EPA finds that there is good cause under 5 U.S.C. 553(b)(3) to promulgate today's corrections in final form and that there is good cause under 5 U.S.C. 553(b)(3) to waive the requirement that regulations be published at
least 30 days before they become effective. Finally, EPA notes that although it is not withdrawing any existing regulatory language, all of today's revisions operate prospectively.

V. Executive Order 12866

Under Executive Order 12866, EPA must judge whether a regulation is ``significant'' and, therefore, subject to review under the Executive Order. Due to the nature of this regulation (technical correction), it

is not ``significant''; therefore, no Executive Order 12866 review is required.

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

Dated: December 16, 1994.
Peter Roberts,
Acting Assistant Administrator for Solid Waste and Emergency Response.

For the reasons set out in the preamble, title 40 chapter I of the Code of Federal Regulations is amended to read as follows:

PART 268--LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A--General

2. In Sec. 268.2, paragraph (i) is revised to read as follows:

Sec. 268.2 Definitions applicable in this part.

* * * * *

(i) Underlying hazardous constituent means any constituent listed in Sec. 268.48, Table UTS--Universal Treatment Standards, except vanadium and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standards.

3. Section 268.7 is amended by revising the introductory text of paragraphs (a)(1) and (d); revising paragraphs (a)(1)(ii); (a)(1)(iv), (a)(1)(v), (a)(2)(i)(B); (a)(3)(vi); (a)(8); (b)(4)(ii); and (d)(1); and by adding paragraphs (a)(1)(vi) and (a)(3)(vii) to read as follows:

Sec. 268.7 Waste analysis and recordkeeping.

(a) * * *

(1) If a generator determines that he is managing a restricted waste under this part and the waste does not meet the applicable treatment standards set forth in subpart D of this part or it exceeds the applicable prohibition levels set forth in Sec. 268.32 or RCRA section 3004(d), with each shipment of waste the generator must notify the treatment or storage facility in writing. The notice must include the following information:

* * * * *

(ii) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, [[Page 245]] for wastes F001-F005, F039, D001, D002, D012-D043 and in Sec. 268.32 or RCRA section 3004(d). Generators must also include whether the waste is a nonwastewater or wastewater (as defined in

Sec. 268.2 (d) and (f)), and indicate the subcategory of the waste (such as ``D003 reactive cyanide''), if applicable;
* * * * *

(iv) For hazardous debris, the contaminants subject to treatment as provided by Sec. 268.45(b) and the following statement: ``This hazardous debris is subject to the alternative treatment standards of 40 CFR 268.45;''

(v) The waste analysis data, where available; and,

(vi) The date the waste is subject to the prohibitions.

(2) * * *

(i) * * *

(B) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001-F005, F039, D001, D002, D012-D043 and Sec. 268.32 or RCRA section 3004(d). Generators must also include whether the waste is a nonwastewater or wastewater (as defined in Sec. 268.2 (d) and (f)), and indicate the subcategory of the waste (such as ``D003 reactive cyanide''), if applicable;
* * * * *

(3) * * *

(vi) For hazardous debris when using the treatment standards for the contaminating waste(s) in Sec. 268.40: the requirements described in paragraphs (a)(3) (i), (ii), (iii), (iv), and (vii) of this section; and,

(vii) The date the waste is subject to the prohibitions.
* * * * *

(8) If a generator is managing a lab pack that contains none of the wastes specified in appendix IV of part 268, and wishes to use the alternative treatment standard under Sec. 268.42(c), with each shipment of waste the generator must submit a notice to the treatment facility in accordance with paragraph (a)(1) of this section, except that underlying hazardous constituents need not be determined. The generator must also comply with the requirements in paragraphs (a)(5) and (a)(6) of this section and must submit the following certification, which must be signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack does not contain any wastes identified at Appendix IV to part 268. I am aware that there are significant penalties for submitting a false certification including possibility of fine or imprisonment.
* * * * *

(b) * * *

(4) * * *

(ii) The waste constituents to be monitored, if monitoring will not include all regulated constituents, for wastes F001-F005, F039, D001, D002, D012-D043 and in Sec. 268.32 or RCRA section 3004(d). Generators must also include whether the waste is a nonwastewater or wastewater (as defined in Sec. 268.2 (d) and (f), and indicate the subcategory of the waste (such as D003 reactive cyanide), if applicable.
* * * * *

(d) Generators or treaters who first claim that hazardous debris is excluded from the definition of hazardous waste under Sec. 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, Sec. 268.45, and debris that the EPA Regional Administrator (or his designated representative) or State authorized to implement part 268 requirements has determined does not

contain hazardous waste) are subject to the following notification and certification requirements:

(1) A one-time notification, including the following information, must be submitted to the EPA Regional hazardous waste management division director (or his designated representative) or State authorized to implement part 268 requirements, or State authorized to implement part 268 requirements:

* * * * *

4. Section 268.9 is amended by revising paragraph (a) and paragraph (d)(2)(i) to read as follows:

Sec. 268.9 Special rules regarding wastes that exhibit a characteristic.

(a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subpart D of this part. For purposes of part 268, the waste will carry the waste code for any applicable listing under 40 CFR 261, subpart D. In addition, the waste will carry one or more of the waste codes under 40 CFR 261, subpart C, where the waste exhibits a characteristic, except in the case when the treatment standard for the waste listed in part 261, subpart D operates in lieu of the treatment standard for the waste under part 261, subpart C, as specified in paragraph (b) of this section. If the generator determines that his waste displays the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by CMBST, or RORGS), or the characteristic of corrosivity (D002), and is prohibited under Sec. 268.37; or that his waste displays the characteristic of toxicity (D012-D043), and is prohibited under Sec. 268.38, the generator must determine the underlying hazardous constituents (as defined in Sec. 268.2), in the D001, D002, or D012-D043 wastes.

* * * * *

(d) * * *

(2) * * *

(i) If treatment removes the characteristic but does not treat underlying hazardous constituents, then the certification found in Sec. 268.7(b)(5)(iv) applies.

* * * * *

Subpart D--Treatment Standards

5. Section 268.40 is amended by revising the table ``Treatment Standards for Hazardous Wastes'' to read as follows:

Sec. 268.40 Applicability of Treatment Standards.

* * * * *

BILLING CODE 6560-50-P

[GRAPHIC][TIFF OMITTED]TR03JA95.005

[[Page 247]]

[GRAPHIC][TIFF OMITTED]TR03JA95.006

[[Page 248]]

[GRAPHIC][TIFF OMITTED]TR03JA95.007

[[Page 249]]

[GRAPHIC][TIFF OMITTED]TR03JA95.008

[[Page 250]]

[GRAPHIC][TIFF OMITTED]TR03JA95.009

[[Page 251]]

[GRAPHIC][TIFF OMITTED]TR03JA95.010

[[Page 252]]

[GRAPHIC][TIFF OMITTED]TR03JA95.011

[[Page 253]]

[GRAPHIC][TIFF OMITTED]TR03JA95.012

[[Page 254]]

[GRAPHIC][TIFF OMITTED]TR03JA95.013

[[Page 255]]

[GRAPHIC][TIFF OMITTED]TR03JA95.014

[[Page 256]]

[GRAPHIC][TIFF OMITTED]TR03JA95.015

[[Page 257]]

[GRAPHIC][TIFF OMITTED]TR03JA95.016

[[Page 258]]

[GRAPHIC][TIFF OMITTED]TR03JA95.017

[[Page 259]]

[GRAPHIC][TIFF OMITTED]TR03JA95.018

[[Page 260]]

[GRAPHIC][TIFF OMITTED]TR03JA95.019

[[Page 261]]

[GRAPHIC][TIFF OMITTED]TR03JA95.020

[[Page 262]]

[GRAPHIC][TIFF OMITTED]TR03JA95.021

[[Page 263]]

[GRAPHIC][TIFF OMITTED]TR03JA95.022

[[Page 264]]

[GRAPHIC][TIFF OMITTED]TR03JA95.023

[[Page 265]]

[GRAPHIC][TIFF OMITTED]TR03JA95.024

[[Page 266]]

[GRAPHIC][TIFF OMITTED]TR03JA95.025

[[Page 267]]

[GRAPHIC][TIFF OMITTED]TR03JA95.026

[[Page 268]]

[GRAPHIC][TIFF OMITTED]TR03JA95.027

[[Page 269]]

[GRAPHIC][TIFF OMITTED]TR03JA95.028

[[Page 270]]

[GRAPHIC][TIFF OMITTED]TR03JA95.029

[[Page 271]]

[GRAPHIC][TIFF OMITTED]TR03JA95.030

[[Page 272]]

[GRAPHIC][TIFF OMITTED]TR03JA95.031

[[Page 273]]

[GRAPHIC][TIFF OMITTED]TR03JA95.032

[[Page 274]]

[GRAPHIC][TIFF OMITTED]TR03JA95.033

[[Page 275]]

[GRAPHIC][TIFF OMITTED]TR03JA95.034

[[Page 276]]

[GRAPHIC][TIFF OMITTED]TR03JA95.035

[[Page 277]]

[GRAPHIC][TIFF OMITTED]TR03JA95.036

[[Page 278]]

[GRAPHIC][TIFF OMITTED]TR03JA95.037

[[Page 279]]

[GRAPHIC][TIFF OMITTED]TR03JA95.038

[[Page 280]]

[GRAPHIC][TIFF OMITTED]TR03JA95.039

[[Page 281]]

[GRAPHIC][TIFF OMITTED]TR03JA95.040

[[Page 282]]

[GRAPHIC][TIFF OMITTED]TR03JA95.041

[[Page 283]]

[GRAPHIC][TIFF OMITTED]TR03JA95.042

[[Page 284]]

[GRAPHIC][TIFF OMITTED]TR03JA95.043

[[Page 285]]

[GRAPHIC][TIFF OMITTED]TR03JA95.044

[[Page 286]]

[GRAPHIC][TIFF OMITTED]TR03JA95.045

[[Page 287]]

[GRAPHIC][TIFF OMITTED]TR03JA95.046

[[Page 288]]

[GRAPHIC][TIFF OMITTED]TR03JA95.047

[[Page 289]]

[GRAPHIC][TIFF OMITTED]TR03JA95.048

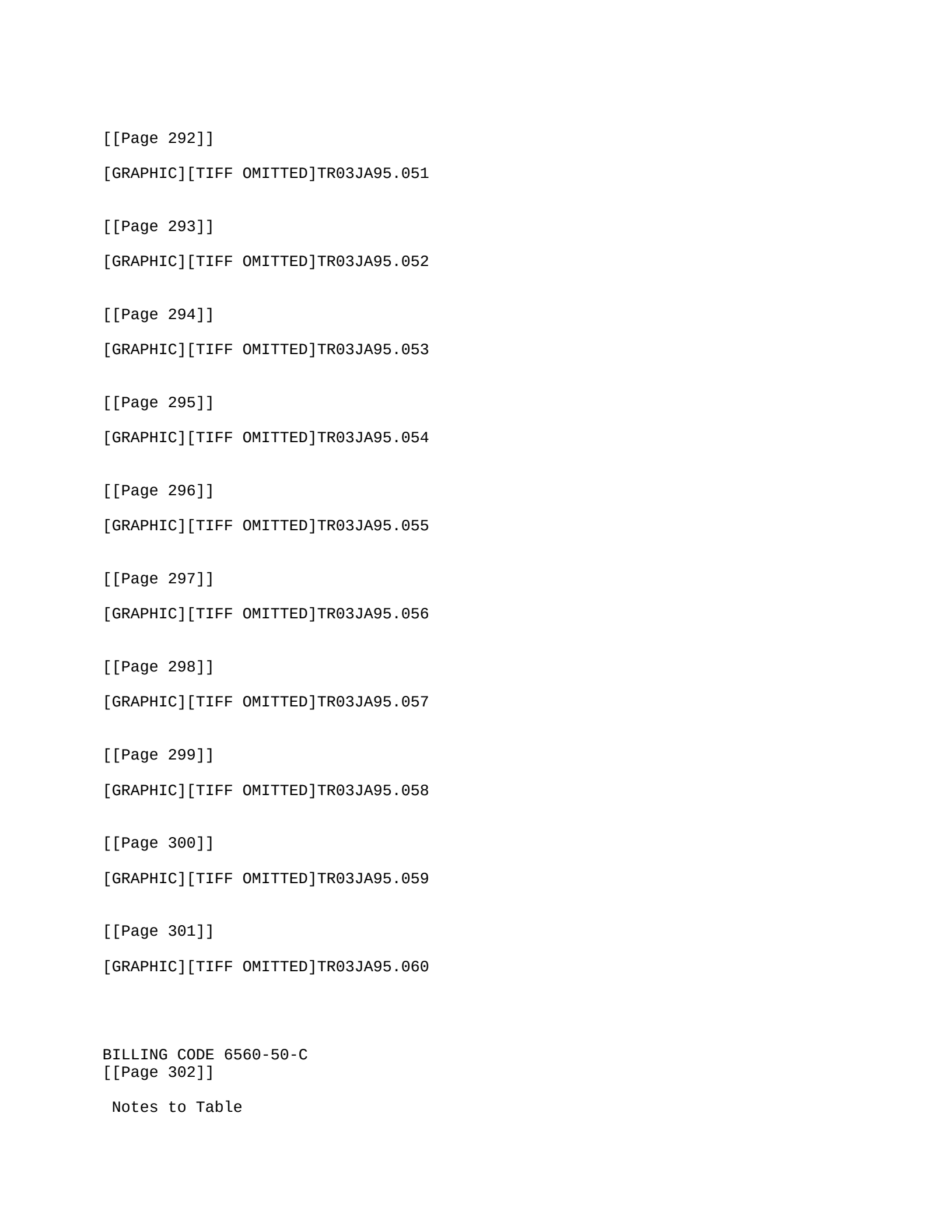
[[Page 290]]

[GRAPHIC][TIFF OMITTED]TR03JA95.049

[[Page 291]]

[GRAPHIC][TIFF OMITTED]TR03JA95.050

[[Page 292]]



[GRAPHIC][TIFF OMITTED]TR03JA95.051

[[Page 293]]

[GRAPHIC][TIFF OMITTED]TR03JA95.052

[[Page 294]]

[GRAPHIC][TIFF OMITTED]TR03JA95.053

[[Page 295]]

[GRAPHIC][TIFF OMITTED]TR03JA95.054

[[Page 296]]

[GRAPHIC][TIFF OMITTED]TR03JA95.055

[[Page 297]]

[GRAPHIC][TIFF OMITTED]TR03JA95.056

[[Page 298]]

[GRAPHIC][TIFF OMITTED]TR03JA95.057

[[Page 299]]

[GRAPHIC][TIFF OMITTED]TR03JA95.058

[[Page 300]]

[GRAPHIC][TIFF OMITTED]TR03JA95.059

[[Page 301]]

[GRAPHIC][TIFF OMITTED]TR03JA95.060

BILLING CODE 6560-50-C
[[Page 302]]

Notes to Table

\1\ The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/ Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

\2\ CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

\3\ Concentration standards for wastewaters are expressed in mg/ l are based on analysis of composite samples.

\4\ All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR part 268.42, Table 1--Technology Codes and Descriptions of Technology-Based Standards.

\5\ Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

\6\ Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

\7\ Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

Note: NA means not applicable.

* * * * *

6. Section 268.42 is amended by revising the entry, ``CMBST'' in Table 1 to read as follows:

Sec. 268.42 Treatment standards expressed as specified technologies.

* * * * *

Table 1.--Technology Codes and Description of Technology-Based Standards

Technology code	Description of technology-based standards
*	* * * *
CMBST	Combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264, subpart O; 40 CFR part

265, subpart O; or 40 CFR part 266, subpart H.

* * * * *

---

* * * * *

7. Section 268.48 is amended by adding footnote 5 to the entry for Vanadium and revising the footnote to read as follows:

Sec. 268.48 Universal Treatment Standards.

* * * * *

Sec. 268.48 Table UTS--Universal Treatment Standards

* * * * *

\5\ Vanadium and zinc are not ``underlying hazardous constituents'' in characteristic wastes, according to the definition
at 268.2(i).

Note: NA means not applicable.

8. Appendix X to part 268 is amended by revising Certification Statement B to read as follows:

Appendix X to Part 268--Recordkeeping, Notification, and/or Certification Requirements.

* * * * *

Certification Statements

* * * * *

B. I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack does not contain any wastes identified at Appendix IV to part 268. I am aware that there are significant penalties for submitting a false certification including possibility of fine or imprisonment.

* * * * *

[FR Doc. 94-32118 Filed 12-30-94; 8:45 am]
BILLING CODE 6560-50-P

</pre>
</body>
</html>

Federal Register

Monday
April 8, 1996

Part II

Environmental Protection Agency

40 CFR Part 148, et al.

Land Disposal Restrictions Phase III; Final Rule and Partial Withdrawal and Amendment of Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 268, 271, and 403

RIN 2050–AD38

[EPA # 530–Z–96–002; FRL–5438–3]

Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is promulgating treatment standards for hazardous wastes from the production of carbamate pesticides and from primary aluminum production under its Land Disposal Restrictions (LDR) program. The purpose of the LDR program, authorized by the Resource Conservation and Recovery Act (RCRA), is to minimize short- and long-term threats to human health and the environment due to land disposal of hazardous wastes.

The Agency is also amending the treatment standards for hazardous wastes that exhibit the characteristic of reactivity. The rule also begins the process of amending existing treatment standards for wastewaters which are hazardous because they display the characteristic of ignitability, corrosivity, reactivity, or toxicity. These wastes are sometimes treated in lagoons whose ultimate discharge is regulated under the Clean Water Act, and sometimes injected into deepwells which are regulated under the Safe Drinking Water Act. Prior to today's rule, the treatment standard for these wastes required only removal of the characteristic property. Today's revised treatment standards require treatment, not only to remove the characteristic, but also to treat any underlying hazardous constituents which may be present in the wastes. Therefore, these revised treatment standards will minimize threats from exposure to hazardous constituents which may potentially migrate from these lagoons or wells.

Finally, EPA is codifying as a rule its existing Enforcement Policy that combustion of inorganic wastes is an impermissible form of treatment because hazardous constituents are being diluted rather than effectively treated.

EFFECTIVE DATE: This final rule is effective on April 8, 1996, except:

Sections 148.18(a), 268.39(a), (b), and (f), which are effective on July 1, 1996; and

Sections 148.18(b) and 268.39(c), which are effective on January 8, 1997; and

Sections 148.1 (a), (b), and (d), 148.3, 148.4, 148.18 (c) and (d), 148.20(a), 268.1(e), 268.2 (k) and (l), 268.3 (a) and (b), 268.9 (d), (e), (f), and (g), 268.39 (d) and (e), 268.44(a), and 403.5 (c) and (d), which are effective on April 8, 1998.

ADDRESSES: Supporting materials are available for viewing in the RCRA information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–PH3F–FFFFF. The RCRA Docket is open from 9 a.m. to 4 p.m. Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information on the LDR program, contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For general information on today's rule, contact Peggy Vyas in the Office of Solid Waste, phone 703–308–8594.

SUPPLEMENTARY INFORMATION:

Glossary of Acronyms

BAT—Best Available Technology
BDAT—Best Demonstrated Available Technology
BIFs—Boilers and Industrial Furnaces
CAA—Clean Air Act
CWA—Clean Water Act
EP—Extraction Procedure
HON—Hazardous Organic NESHAPs
HSWA—Hazardous and Solid Waste Amendments
HWIR—Hazardous Waste Identification Rule
ICR—ignitable, corrosive, and reactive wastes, or, Information Collection Request (in section IX.D.)
ICRT—ignitable, corrosive, reactive, and TC wastes
LDR—Land Disposal Restrictions
NESHAPs—National Emission Standards for Hazardous Air Pollutants
NPDES—National Pollutant Discharge Elimination System
POTW—Publicly-Owned Treatment Works
PSES—Pretreatment Standards for Existing Sources
PSNS—Pretreatment Standards for New Sources
RCRA—Resource Conservation and Recovery Act
RIA—Regulatory Impact Analysis
SDWA—Safe Drinking Water Act
TC—toxicity characteristic
TCLP—Toxicity Characteristic Leaching Procedure
TRI—Toxic Release Inventory
UIC—Underground Injection Control
UTS—Universal Treatment Standards

Outline

I. Background

A. Summary of the Statutory Requirements of the 1984 Hazardous and Solid Waste Amendments, and Requirements of the 1993 Consent Decree With the Environmental Defense Fund

The Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), enacted on November 8, 1984, largely prohibit the land disposal of untreated hazardous wastes that do not meet treatment standards established by EPA under section 3004(m). Once a hazardous waste is prohibited, the statute provides only two options for legal land disposal: meet the treatment standard for the waste prior to land disposal, or dispose of the waste in a land disposal unit that has been found to satisfy the statutory no migration test. A no migration unit is one from which there will be no migration of hazardous constituents for as long as the waste remains hazardous. RCRA sections 3004 (d), (e), (f), (g)(5).

The amendments also require the Agency to set levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short term and long term threats to human health and the environment are minimized. RCRA section 3004(m)(1). To date, the Agency has implemented this provision by establishing treatment standards for chemical constituents in hazardous wastes based on the performance of the best demonstrated available technology (BDAT) to treat the waste. EPA may establish treatment standards as specified technologies, as constituent concentration levels in treatment residuals, or both. When treatment standards are set as levels, the regulated community may use any technology not otherwise prohibited (such as impermissible dilution) to treat the waste.

It should be noted that the Agency has proposed risk-based exit levels—levels at which wastes are no longer considered hazardous for purposes of RCRA subtitle C—for the majority of hazardous constituents found in listed hazardous wastes in the Hazardous Waste Identification Rule (HWIR) (60 FR 66344, December 21, 1995). Wastes meeting these levels either before or after treatment consequently could be disposed in units not subject to RCRA hazardous waste management requirements (e.g., landfills without subtitle C permits). A consent decree approved by the U.S. District Court for the District of Columbia requires EPA to finalize the HWIR exit levels by December 15, 1996. In the same notice, the Agency proposed to allow the exit levels for some constituents to serve as alternative, risk-based LDR treatment standards satisfying the ''minimize threat'' standard of section 3004(m). Where these risk-based levels are higher (less restrictive) than current BDAT treatment standards, they will effectively supersede the BDAT requirements. See *Hazardous Waste Treatment Council* v. *EPA,* 886 F.2d 355, 362–63 (D.C. Cir. 1989).

EPA was required to promulgate land disposal prohibitions and treatment standards by May 8, 1990 for all wastes that were either listed or identified as hazardous at the time of the 1984 amendments (RCRA sections 3004 (d), (e), and (g)(5)), a task EPA completed within the statutory timeframe. EPA was also required to promulgate prohibitions and treatment standards for wastes identified or listed as hazardous after the date of the 1984 amendments within six months after the listing or identification takes effect (RCRA section 3004(g)(4)).

The Agency did not meet this latter statutory deadline for all of the wastes identified or listed after the 1984 amendments. As a result, a suit was filed by the Environmental Defense Fund (EDF). EPA and EDF signed a consent decree that establishes a schedule for adopting prohibitions and treatment standards for newly identified and listed wastes. (*EDF* v. *Reilly*, Cir. No. 89–0598, D.D.C.). EPA also entered into a settlement agreement with the environmental petitioners in *Chemical Waste Management* v. *EPA*, 976 F.2d 2 (D.C. Cir. 1992), cert. denied 113 S. Ct. 1961 (1993) regarding the procedural effect of the mandate entered in that case. This settlement calls for EPA to take action to implement the portions of the opinion dealing with centralized management of wastewaters that initially exhibit a hazardous waste characteristic within specified timeframes.

Today's rule fulfills several provisions of the settlement agreement and proposed consent decree. First, the rule amends the treatment standards for initially characteristic wastewaters managed in centralized wastewater management systems containing land disposal units. Three specific fact patterns are covered by the rule: (1) Where the wastewaters are ultimately discharged and are subject to limitations or standards established under the Clean Water Act (CWA) and the treatment system preceding discharge includes a surface impoundment; (2) where a facility with initially characteristic wastes treats those wastes with CWA-equivalent treatment but ultimately uses a form of land disposal (such as spray irrigation) that is not regulated under the CWA as the final means of disposing of the treated wastewaters; and (3) the initially characteristic wastes are injected into Class 1 non-hazardous deep wells subject to regulation under the Safe Drinking Water Act (SDWA). In all cases, the wastewaters no longer exhibit a characteristic at the point of land disposal. The amended treatment standards require treatment that destroys, immobilizes, or removes the hazardous constituents present in the initially characteristic wastewaters (referred to as ''underlying hazardous

constituents'' because these constituents are not typically the reason the waste is classified as hazardous). Treatment of the underlying hazardous constituents is nevertheless required in order to minimize the long-term threats land disposal of these wastes can cause. 976 F.2d at 16–17.

EPA is fulfilling provisions of the consent decree by promulgating prohibitions and treatment standards for two ''newly listed wastes'' wastes from production of carbamate pesticides, and spent aluminum potliners from primary aluminum production.

That being said, the risks addressed by the portion of the rule dealing with centralized wastewater management, particularly UIC wells, are very small relative to the risks presented by other environmental conditions or situations. In a time of limited resources, common sense dictates that we deal with higher risk activities first, a principle on which EPA, members of the regulated community, and the public can all agree. For this reason, the Administration is supporting HR 2036, legislation which passed the House of Representatives, that would remove the mandate to automatically apply LDR treatment standards to decharacterized wastes managed in centralized wastewater management situations regulated by the CWA or the SDWA. If this legislation passes in its current form, it would affect the regulations discussed in sections III., IV., and VI.B. of the preamble. It would not affect the other sections of the preamble and rule. The sections of preamble and rule that are affected by the legislation have been granted 2-year national capacity variance (see §§ 148.18 (c) and (d) and 268.39 (c) and (d)). The sections of preamble and rule not affected by the legislation have more immediate effective dates. If the legislation does pass into law, the Agency could issue an immediately effective final rule remanding the affected portions.

Nevertheless, the Agency is presently required to set treatment standards for these relatively low risk wastes and disposal practices, although there are other actions and projects with which the Agency could provide greater protection of human health and the environment. At the same time, however, EPA has sought to exercise the full extent of its authority under current law to implement these mandates with significantly lower cost while ensuring protectiveness, such as giving credit for up-stream reductions in hazardous constituents, and crafting limited exemptions for wastewaters containing de minimis amounts of hazardous constituents.

B. Treatment Standards for Hazardous Wastes That Exhibit a Characteristic—The D.C. Circuit's Opinion in Chemical Waste Management v. EPA

In *Chemical Waste Management* v. *EPA*, 976 F.2d 2 (D.C. Cir. 1992) cert. denied 113 S. Ct. 1961 (1993), the court made a number of far-reaching rulings pertaining to treatment standards for hazardous wastes that are hazardous because they exhibit a characteristic. First, the court held that land disposal restriction requirements can continue to apply to characteristic hazardous wastes even after they no longer exhibit a characteristic. 976 F.2d at 12–14. Second, to satisfy the requirement in RCRA section 3004(m) that treatment address both short-term and long-term threats posed by a waste's land disposal, it is not enough that characteristic hazardous wastes be treated to remove the short-term property (viz. ignitability, corrosivity, or reactivity) that makes them hazardous. Long-term threats, in the form of toxic underlying hazardous constituents, also must be addressed. 976 F.2d at 16–17. Third (as EPA reads the opinion), the court held that dilution was ordinarily not a permissible means of treating hazardous constituents. Such constituents generally must be destroyed, immobilized, or removed from the waste to satisfy the requirements of section 3004(m), specifically, the requirement that long-term threats be minimized. 976 F.2d at 23, 25 and n. 8; 60 FR at 11706–11708 (March 2, 1995). Fourth, centralized wastewater management systems whose discharge is ultimately regulated under the Clean Water Act, and which dilute characteristic hazardous wastes before treatment in surface impoundments, may continue to do so provided the wastewater treatment system destroys, immobilizes, or removes the same volume of hazardous constituents as would be removed, immobilized, or destroyed if the wastes were treated separately. 976 F.2d at 22–24. In other words, notwithstanding that these wastes are disposed in impoundments without being fully treated, the practice is permissible provided equivalent treatment occurs before the waste is ultimately discharged. Fifth, this option of demonstrating equivalent treatment across a treatment system is not available for Class I nonhazardous deep well injection systems because such units are permanent disposal rather than treatment units. 976 F.2d at 24–6.

These portions of the opinion are addressed in various sections of today's rule.

The Agency is also addressing the issue of equivalent treatment by Clean Water Act treatment systems managing de-characterized wastes in impoundments by promulgating treatment standards and related requirements that would be used to measure this so-called end-of-pipe equivalence. Finally, EPA is implementing the court's mandate with respect to Class I nonhazardous injection wells by requiring treatment of underlying hazardous constituents in ignitable, and corrosive characteristic wastes being injected into such wells, and prohibiting dilution as a means of achieving those standards.

Responses to the comments on EPA's reading of the court's opinion are found in the Response to Comment Background Document which is part of the administrative record for this rule. In general, however, the Agency adheres to the reading set out in the proposed rule's preamble at 60 FR 11706–11708.

EPA is also amending the treatment standards for reactive wastes (other than reactive sulfide and cyanide reactive wastes) so that treatment addresses both the property of reactivity and the threat posed by disposal of underlying hazardous constituents in these wastes (with an exception for ordnance and other explosives which are the subject of an emergency response, as explained in the next paragraph). The Agency is taking this action despite the fact that the court found reactive wastes did not contain sufficient concentrations of hazardous constituents to require any treatment beyond that of removing the characteristic. The Agency believes that it is as likely that reactive wastes contain underlying hazardous constituents at levels that may create a threat as do ignitable and corrosive wastes, and consequently, proposed to regulate reactive wastes in the Phase III proposal. Commenters submitted no data suggesting that reactive wastes do not contain the same types and concentrations of underlying hazardous constituents. Therefore, EPA is promulgating treatment standards for reactive wastes (other than reactive sulfides and cyanides) in this rule that require treatment of all underlying hazardous constituents reasonably expected to be present in the reactive wastes at the point of generation.

EPA is, however, temporarily deferring application of these amended LDR treatment standards for reactive wastes with respect to unexploded ordnance and other explosive devices which are the subject of an emergency response. An emergency response is an action taken to prevent imminent risk of explosion. (See 40 CFR 264.1(g)(8)

setting out circumstances where such responses are exempt from RCRA permitting requirements.) During the development of the proposed Military Munitions Rule: Hazardous Waste Identification and Management; Explosives Emergencies; Redefinition of On-site proposed rule (60 FR 56468, November 8, 1995), the Department of Defense, the military services, and other Federal agencies raised concerns that LDR requirements requiring treatment of underlying hazardous constituents might impede the most effective emergency responses involving these materials. If a responding team had to determine LDR applicability before deactivating an explosive subject to an emergency response, the response could be significantly delayed or complicated. Furthermore, concern about LDR applicability might discourage the team from responding at all. This discussion serves as EPA's initial response to these comments.

EPA agrees that the primary goal in emergency responses to explosives is the safe and prompt elimination of immediate threats to human life and property, and the Agency would be concerned if LDR or other regulatory requirements complicated these responses. The issue is too important and potentially complicated to resolve in today's rule. Therefore, EPA is temporarily deferring final action while it considers this issue further.

In deferring action for this limited class of reactive wastes, EPA notes that emergency responses present issues different from routine management of reactive wastes, where there is no competing consideration of need for immediate action to prevent an imminent threat. In non-emergency response management situations, as discussed earlier, the Agency believes these wastes can be fully treated to minimize both short and long-term threats posed by land disposal of wastes.[1] EPA also is amending the treatment standards for wastes exhibiting the toxicity characteristic to include standards for underlying hazardous constituents.

Toxic wastes can also contain underlying hazardous constituents in the same potentially harmful concentrations as ICR wastes. 60 FR at 11706. Today's final rule consequently conforms standards for toxic characteristic hazardous wastes to assure treatment of underlying hazardous constituents as well, when such constituents are present at levels exceeding the minimize threat level (as established either by the current technology-based standards or, if risk-based levels are established, exceeding a risk-based level.) Thus, the prohibitions and standards in today's rule will apply to ignitable, corrosive, reactive and toxic characteristic wastes, as just discussed.

II. Miscellaneous Issues for Which EPA Is Not Finalizing an Approach in This Final Rule

A. Treatment Standards for Organobromine Wastes

Organobromine wastes are not yet listed as hazardous. EPA anticipates making a final listing determination in a future rulemaking.

Although EPA proposed treatment standards for organobromine wastes, it clearly would be putting the cart before the horse to promulgate treatment standards in advance of a determination of whether the wastes are hazardous. The Agency intends to establish treatment standards for organobromine wastes should these wastes are listed in the future.

B. Potential Prohibition of Nonamenable Wastes From Land-Based Biological Treatment Systems

The proposed rule contained an extensive discussion of whether certain wastes should be prohibited from placement in biological treatment surface impoundments because they are not amenable to biological treatment. To allow more time to gather comments, the Agency has decided to address this issue in the LDR Phase IV rule, which was proposed on August 22, 1995 (60 FR 43654) and is scheduled to be finalized in June of 1996.

C. Certain Sections of Completing Universal Treatment Standards

The LDR Phase III proposed rule included a section on the completion of universal treatment standards (60 FR at 11727, March 2, 1995). Possible nonwastewater universal treatment standards (UTS) for eleven constituents were discussed in the proposal, and comments and data were solicited. In general, commenters felt more data should be gathered before EPA proposes nonwastewater standards for these constituents, and EPA agrees. EPA had also solicited comment and data on extending certain universal treatment standards to fill gaps in the § 268.40 table of universal treatment standards where ''NA'' appeared for either the wastewater or nonwastewater form of a regulated hazardous constituent. Commenters were opposed to this, stating that it would be arbitrary to add a standard to a waste code where before there was none without supporting data. The Agency again agrees. Therefore, EPA is not taking final action at this time.

D. Prohibition of Hazardous Waste as Fill Material

EPA proposed to prohibit use of hazardous waste as fill material. 60 FR at 11732. Because issues raised in the proposal are related to those in a number of other pending rulemakings, including the Hazardous Waste Identification Rule, and the proposed rule relating to land-based uses of hazardous waste K061 (59 FR 67256 (Dec. 29, 1994)), EPA is not taking final action on the proposal at this time.

E. Point of Generation

The Agency discussed possible changes that could be made to the ''point of generation''—or point at which LDR requirements attach to a hazardous waste (see 60 FR 11717, March 2, 1995). The Agency is still considering the options discussed in the proposal and potentially other options not discussed. The Agency will reopen the point of generation issue for further comment, and is intending to finalize an option in a future rulemaking.

F. Prohibition on Using Iron Filings to Stabilize Spent Foundry Sand

The Agency proposed designating the practice of adding iron dust/filings to spent foundry sand as impermissible dilution (60 FR 11731, March 2, 1995). The Agency is gathering data on the stability of the chemical bond formed between the iron and lead in the spent foundry sand. After the Agency analyzes these data, as well as further studies the public comments on this issue, it may take final action on the proposal.

III. End-of-Pipe Equivalence: Treatment Standards for Clean Water Act (CWA) and CWA-Equivalent Wastewater Treatment Systems

A. Types of Facilities to Which Treatment Standards Apply

As explained above, the D.C. Circuit established a standard of so-called end-of-pipe equivalence, allowing CWA treatment systems with surface impoundments to dilute characteristic wastes before land disposal in those impoundments without violating LDR requirements, provided the treatment system destroys, immobilizes, or removes an equivalent amount of hazardous constituent as if the characteristic waste were treated separately to meet RCRA standards. EPA

[1] EPA also notes that it is not reopening the issue of open burning/open detonation of reactive wastes. In 1986, EPA determined that such activities are not a form of land disposal. See 51 FR at 40580 (Nov. 7, 1986).

is establishing in this rule the treatment standards that must be satisfied in order to demonstrate that equivalent treatment is occurring.

These treatment standards apply to the following types of facilities: (1) facilities treating formerly characteristic wastes in surface impoundments whose ultimate discharge is subject to regulation under either section 402 or 307 of the CWA. The rule thus encompasses both direct dischargers (facilities discharging to navigable waters) and indirect dischargers (those discharging to POTWs); and, (2) permitted and unpermitted zero dischargers engaging in treatment that is equivalent to that of the CWA-regulated facilities (see 40 CFR 268.37(a) defining CWA-equivalent treatment), including facilities treating formerly characteristic wastes in tanks prior to release on the land for such purposes as irrigation or land treatment.

EPA also wishes to make clear the types of wastewater management situations to which these standards do not apply. First, the standards do not apply to facilities that discharge to navigable waters or POTWs and that manage decharacterized wastes in treatment systems without surface impoundments. Consequently, if a facility generates a characteristic waste, dilutes it so that it no longer exhibits a characteristic, and then treats the waste in tanks before ultimate discharge to a navigable water or a POTW, this rule does not apply. There is no land disposal of a prohibited waste occurring and consequently no RCRA requirement that the characteristic waste be pretreated. Applicable CWA limitations and standards would, of course, continue to apply (as would a one-time recordkeeping requirement under RCRA (see § 268.9).

Second, the standards do not apply in situations where RCRA hazardous waste (subtitle C) impoundments are used. The statute already sets out the requirements for subtitle C impoundments receiving wastes which may not yet have met a treatment standard. RCRA section 3005(j)(11). These requirements are not altered by the Third Third opinion. 976 F. 2d at 24 n. 10.

Finally, in response to comment, EPA has determined that the end-of-pipe treatment standards should not apply to stormwater impoundments. Stormwater impoundments are used by treatment facilities to catch stormwater during rain events, because their biological treatment systems cannot adequately handle such sudden, large volumes of water. At some treatment facilities, however, because they have a combined wastewater system, stormwater impoundments also receive process water containing decharacterized wastes.

The Agency agrees with commenters who stated that stormwater impoundments are necessary to maintain the efficacy of biological treatment units. In addition, such impoundments are empty most of the time because they are designed for emergency rain events. In the Third Third opinion, the court focused on wastewater treatment surface impoundments. It seems likely that stormwater impoundments were outside the court's consideration. Furthermore, imposing treatment standards on such impoundments could require treatment of the stormwater/decharacterized waste before it could permissibly go into the impoundment, not a practical alternative during a major storm event. Alternatively, imposing LDR treatment standards might require the facility to replace its combined wastewater system, which would be a major disruption to most of these facilities and hardly seems justified when stormwater impoundments are used only on an emergency basis. These are the very types of disruptions that the integration clause in RCRA 1006(b) is intended to prevent. Consequently, EPA is indicating that today's rule does not apply to stormwater impoundments.

B. End-of-Pipe Treatment Standards

The treatment standards that EPA is promulgating for characteristic wastewaters are found in the table of LDR treatment standards at 40 CFR 268.40 and 268.48. As explained more fully in the following section, these treatment standards generally adopt the limitations or standards that apply to the facility's discharge as the RCRA treatment standards. The reason EPA is taking this approach is that the CWA industry category or case-by-case industrial POTW limitations and standards represent specific determinations of what Best Available Treatment (BAT) technology is capable of achieving for that plant's wastewater, or, in the case of Water Quality Criteria-based limitations, what an appropriate limit is based on BAT treatment plus risk-based considerations. In the event a hazardous constituent present in the wastewater at point of generation of the original characteristic hazardous waste is not already regulated pursuant to a CWA limitation or standard, the RCRA Universal Treatment Standard for that constituent would apply.

These treatment standards may be met at the CWA point of compliance, typically the point the wastewater is discharged to a navigable water or a POTW. For CWA-equivalent facilities, the treatment standards must be met at the point where the wastewater is sprayed onto the land in irrigation (or similar) activities, or injected into a non-Class I injection well. This accords with the equivalence standard established by the court: ''hazardous constituents are [to be] removed from the waste before it enters the environment.'' 976 F. 2d at 24; see also id. at 23 and n. 8. Most commenters likewise agreed with an end-of-pipe measuring point. Indeed, requiring full treatment before ultimate discharge could destroy the very accommodation with the CWA regime that the court thought critical. See 60 FR at 13677 (Aug. 22, 1995).

However, EPA also agrees with commenters that there is no reason to impede individual facilities from choosing an alternative point of compliance (i.e. other than end-of-pipe) provided the facility can demonstrate that the prohibited waste (the decharacterized portion of the combined effluent) has been treated by means other than dilution to remove an equivalent mass of hazardous constituents. This is specifically consistent with the principle announced in the Administration's report on ''Reinventing Environmental Regulation'' to ''provid[e] maximum flexibility in the means of achieving our environmental goals, but requiring accountability for the results''. Consequently, the Agency is allowing a facility to designate any compliance point downstream of treatment that destroys, immobilizes, or removes hazardous constituents as the point for demonstrating that equivalent treatment occurs. This point can, but need not be, the NPDES or pretreatment point of compliance. Examples of alternative points of compliance that would be permissible (assuming the treatment standard is being satisfied) would be prior to initial placement in an impoundment, or after treatment in an impoundment but before final discharge.

The Agency also agrees with commenters that there can be alternative points of compliance for different underlying hazardous constituents. Again, the reason is to allow flexibility of compliance alternatives when a facility can demonstrate that it is destroying, immobilizing, or removing an equivalent mass of hazardous constituents through wastewater treatment as would be achieved by segregating the characteristic wastestream for separate RCRA treatment. Thus, if a facility generated a

characteristic waste containing metal and organic underlying hazardous constituents and the waste was treated sequentially by means not involving impermissible dilution, there could be different compliance points for the metal and organic hazardous constituents.

EPA notes, however, that if alternative points of compliance are utilized, enforcement would normally be pursuant to RCRA, not the Clean Water Act. This is by necessity, since CWA permits (or, for indirect dischargers, control mechanisms) would not normally apply to effluent quality before final discharge. See further discussion on means of implementing today's standards below in this preamble.

C. Why CWA Limitations and Standards Can Also Be RCRA Treatment Standards

As explained above, when a hazardous constituent is already subject to a CWA industry category or Water Quality Criteria-based limitation, or a case-by-case industrial POTW limitation or standard, the Agency believes (and the final rule provides) that the CWA limitations and standards satisfy RCRA section 3004(m) requirements and consequently become the RCRA treatment standard for purposes of demonstrating equivalent treatment. EPA believes that this is an obvious and effective means of integrating CWA and RCRA requirements, in accord with the court's objective. 976 F. 2d at 22; RCRA section 1006(b). This approach was generally supported by commenters as a reasonable means of satisfying the court's mandate and the underlying policy of integration of the two statutes.

Several commenters, however, argued that CWA limitations and standards could not be equivalent to RCRA because such standards can reflect (among other things) ''the cost of achieving such effluent reduction'', and ''the age of equipment and facilities involved''. CWA section 304(b)(2)(B) (factors to be considered in determining Best Available Technology). EPA disagrees. While it is true that technology-based standards developed to address toxic pollutants from various industrial categories are developed after consideration of levels that can be achieved through application of the best available technology economically achievable, the CWA limitations and standards nevertheless represent the best evaluation of what technically advanced wastewater treatment is capable of achieving for a particular industry's (or, in some cases, particular plant's) wastewater. Although there is no requirement that a particular treatment technology must be used to achieve the facility's limits, it is expected that plants utilizing BAT will have treated their effluent so that there are substantial reductions in concentration and mass of hazardous constituents. As the Agency has stated many times, EPA believes that section 3004(m) is satisfied by treatment that substantially destroys, immobilizes, and removes the hazardous constituents that are present in the waste, notwithstanding that minor amounts of hazardous constituents remain after treatment. Put another way, the statute does not require that every conceivable threat posed by land disposal be eliminated by treatment. 55 FR at 6641 and n. 1 (Feb. 26, 1990); 56 FR at 12355 (March 25, 1991); 57 FR 37259 (August 18, 1992); 55 FR at 22596 (June 1, 1990). In fact, the legislative history states explicitly that the treatment standards are not to be technology forcing, but rather are to utilize the available effective treatment technologies. 130 Cong. Rec. S. 1978 (daily ed. July 25, 1984) (statement of Sen. Chaffee); 56 FR at 12355. That is precisely what EPA has done here.

Second, with specific regard to use of CWA limitations, EPA notes that virtually all of the current LDR treatment standards for wastewaters are already drawn from CWA limitations and standards. See 55 FR at 22601 (wastewater standards for U and P wastes and F039, which essentially became the universal treatment standards, were transferred from treatment data from CWA programs), and see also the Final BDAT Background Document for U and P Wastes and Multi-Source Leachate (F039) Volume C (documenting that most of existing RCRA wastewater standards were transferred from CWA limitations and standards). Moreover, the technologies that are often used to achieve CWA limitations and standards are, in most cases, the same technologies upon which the RCRA Universal Treatment Standards are based. As EPA has already stated, ''because most treatment technologies cannot be so precisely calibrated as to achieve, for example, 3.5 ppm rather than 2.7 ppm, the likely result is that the same amount of treatment will occur.'' 59 FR at 47989 (Sept. 19, 1994). Since frequently the same technologies are used to treat wastewaters, EPA expects the degree of treatment to be comparable.

EPA also emphasizes that RCRA section 1006(b) requires EPA (among other things) to integrate provisions of RCRA and the CWA when implementing RCRA, and to avoid duplication to the maximum extent possible with CWA requirements. The Agency feels it is accomplishing this requirement by allowing a constituent-specific, CWA treatment standard to satisfy RCRA 3004(m). The Agency reiterates that a technology-based CWA limitation or standard for a hazardous constituent satisfies RCRA because such a limitation or standard directly reflects the capability of BAT technologies to treat a specific industry's or facility's wastewater, whereas the RCRA UTS for wastewaters were developed by transferring performance data from various industries, and thus EPA need not make that same transfer when industry-specific (or plant-specific) wastewater treatment data is available.

A water-quality based limitation would also satisfy RCRA section 3004(m). A CWA water quality-based limitation must be at least as stringent as the limitations required to implement an existing technology-based standard. (See CWA section 301(b)(1)(c).) Even where there is no existing BAT limitation for a toxic or nonconventional pollutant, a permit writer must determine whether BAT would be more stringent than the applicable water quality-based limitation, and again, must apply the more stringent of the two potential limitations. (40 CFR 125.3(c)(2).)

If a facility has received a Fundamentally Different Factors (FDF) variance, the limitations established by that variance also satisfy RCRA requirements. Limitations established by the FDF variance process are technology-based standards reflecting facility-specific circumstances, and hence can appropriately be viewed as BDAT as well, just as with RCRA treatability variance standards. See 51 FR at 40605 (Nov. 7, 1986).

EPA also believes that there are adequate constraints in the CWA implementing rules to prevent these end-of-pipe standards from being achieved by means of simple dilution. First, many of the effluent limitation guidelines and standards regulate the mass of pollutants discharged, and thus directly regulate not only the concentration of pollutant discharged but the degree of wastewater flow as well. Even where rules are concentration-based, NPDES permit writers can set requirements which preclude excessive water use, and EPA has so instructed permit writers. (See 58 FR 66151, December 17, 1993, encouraging permit writers to estimate reasonable rate of flow per facility and factor that flow limit into the permit.) These permit conditions can take the form of best management practices,

explicit mass limitations, and conditions on internal waste streams. 40 CFR 122.44(k); 122.45 (f), (g) and (h).

Indirect dischargers are also subject to specific CWA dilution rules in both the general pretreatment rules and the Combined Wastestream Formula (as well as through many of the categorical standards). 40 CFR 403.6 (d) and (e). Many of the guidelines and standards also preclude addition of stormwater runoff to process wastewater to preclude achieving treatment requirements by means of dilution. The Agency is accordingly of the view that end-of-pipe equivalence would be achieved by treatment that removes, immobilizes, or destroys hazardous constituents, and therefore we have determined the treatment satisfies the requirements of RCRA section 3004(m).

EPA emphasizes, however, that it is not addressing the issue of whether cross-media transfers of hazardous constituents become so extensive as to invalidate the wastewater treatment function of a land-based unit. This is the subject of the pending Phase IV proposed rule (60 FR at 43654 (August 22, 1995)), and will be addressed as part of that proceeding.

D. When CWA Limitations and Standards Become the RCRA Standards

Today's rule establishes the following principles:

1. Direct Dischargers

A CWA limitation becomes the RCRA treatment standard as well in the following situations: (a) where there is a categorical BAT or NSPS limitation for the underlying hazardous constituent; (b) where there is a facility-specific limitation for the underlying hazardous constituent pursuant to 40 CFR 125.3 (c)(2) and (d)(3); (c) where there is a Water Quality-based limitation established pursuant to 40 CFR 122.44(d); or (d) where the facility has received a Fundamentally Different Factors variance establishing an alternative limitation pursuant to 40 CFR Part 125 subpart D.

2. Indirect Dischargers

A Clean Water Act pretreatment standard becomes the RCRA treatment standard as well in the following circumstances: (a) where there is a categorical PSES or PSNS for a particular hazardous constituent; and, (b) where POTWs have developed local limits, in addition to categorical standards, to prevent pass through and interference and apply them to indirect dischargers.

EPA proposed that if pretreatment standards reflected a finding that a particular hazardous constituent will not pass through to navigable waters because of efficacious treatment by the POTW, that standard would also satisfy RCRA. The reason is that there will be full-scale treatment of the hazardous constituent before its final release into the environment. Such full-scale treatment satisfies the court's equivalency test. 60 FR at 11711. EPA is adopting this provision in today's rule for these reasons.

The Agency also proposed that pretreatment standards based on interference with POTW operations would not be considered to satisfy RCRA. *Id.* EPA is adopting this position in the final rule. The reason is that interference findings reflect the effect the pollutant may have on overall POTW treatment, not necessarily treatment of the particular constituent. Because the relationship of an interference-based standard with treatment of a particular hazardous constituent is tenuous, EPA does not believe that such a standard can be said to be equivalent to RCRA treatment. Several commenters disagreed with this reasoning, but provided no empirical information calling the Agency's conclusion into question. EPA is consequently adopting this provision as proposed.

3. Zero Dischargers Performing CWA-Equivalent Treatment

In the May 24, 1993 emergency rule, EPA established the principle that zero discharge facilities performing CWA-equivalent treatment on decharacterized wastewaters would be subject to the rules for direct dischargers, and thus would retain the ability to use surface impoundments as part of the treatment process for decharacterized wastes provided equivalent treatment occurs. 58 FR at 29863–29864. The reason is that these facilities can be performing wastewater treatment identical to, or more stringent than, that required of direct dischargers, and thus the same policy of integrating RCRA and the CWA should apply to such facilities. *Id.*

EPA is consequently also applying today's rules on equivalency to zero dischargers performing CWA-equivalent treatment, including tank-based systems that ultimately land dispose rather than discharge treated effluent. ''CWA-equivalent treatment'' is defined in 268.37(a) to mean ''biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies''.

E. Implementation

1. Where Permits Contain Standards for Hazardous Constituents

If a direct discharger subject to the rule (i.e. generating a characteristic waste containing underlying hazardous constituents at concentrations exceeding the treatment standard at the point the waste is generated, and is treating those decharacterized wastes in surface impoundments) has an NPDES permit containing a limitation for that hazardous constituent based on BAT, NSPS, BPJ, or a water quality standard, then there are no independent RCRA requirements beyond documenting in the facility's records that this is the facility's mode of compliance.

EPA notes further that if the Agency (or authorized State), as part of the CWA decisionmaking process for setting the limitations, affirmatively decided that such hazardous constituents need not be regulated due to low toxicity, low bioavailability or other environmental factors and that fact is reflected in the rulemaking record, permit or permit record, no additional RCRA standards would apply. If the rulemaking or permit and permit record do not contain such a finding, the permitting authority should reexamine the NPDES permit upon reissuance in order to clarify whether such hazardous constituents need not be regulated. During the time between the date this rule becomes effective and the date the permit is reissued, however, the RCRA Universal Treatment Standards for those constituents must be met.

In addition, if EPA (or an authorized State) affirmatively decided either in the rulemaking or in the permitting process that a particular hazardous constituent is controlled through controls on an indicator pollutant, then again, no additional RCRA standards would apply. For this purpose, however, the Agency would only accept as a valid indicator situations where a toxic pollutant parameter is used as an indicator for another toxic pollutant. The Agency does not believe that use of conventional pollutants (such as BOD or COD) as indicators for toxic constituents guarantees the type of equivalent treatment of hazardous constituents, which EPA feels is necessary to implement the equivalence requirement. 976 F. 2d at 23 n. 8.[2]

[2] In making this statement, EPA is of course not calling into question the use of conventional pollutants as valid indicators to satisfy Clean Water Act requirements. The language in the text is directed solely at implementing the court's mandate for purposes of RCRA.

2. Where Permits Do Not Contain a Limitation for a Hazardous Constituent

If the CWA permit either does not contain a limitation for the pollutant or does not regulate the pollutant through an indicator, or in cases when this rule becomes effective before the reissuance of a facility's permit, the RCRA universal treatment standards would apply as they do for any other RCRA hazardous wastestream. In this situation, the owner or operator of a facility has several choices. The owner/operator could do nothing, in which case the hazardous constituent would be subject to the UTS. These standards would be implemented by rule, and thus would not be embodied in a CWA permit. Enforcement consequently would be solely under RCRA. As noted earlier, the point of compliance could, but need not be, at the end-of-pipe point of discharge.

In the alternative, a facility could seek amendment of its NPDES permit pursuant to § 122.62(a)(3), requesting that the applicable permitting authority modify the permit at reissuance, or sooner, to add limits for the underlying hazardous constituents reflecting BAT for that pollutant at the facility.[3] Assuming proper design and operation of the wastewater treatment technology, a permit writer in such a case could modify the permit to add a limitation for the pollutant based on Best Professional Judgement reflecting actual BAT treatment (40 CFR 125.3(c)). Modification requests would be processed pursuant to the procedures found at § 124.5. The modified permit limitation would be a CWA requirement and enforceable solely under that statute, but would be deemed by the Agency to satisfy RCRA 3004(m), so that meeting UTS per se would not be required.

A final alternative is for the facility to seek a RCRA treatability variance. EPA is amending the grounds for granting such a variance to include situations where a facility is treating decharacterized wastes by treatment identified as BAT or NSPS (New Source Performance Standards), the technology is designed and operated properly, but is not achieving the UTS (see § 268.44(a)).

3. Indirect Dischargers

The same alternatives exist for indirect dischargers. If an underlying hazardous constituent is regulated by a categorical PSES, PSNS, or by a local limit in a control mechanism reflecting PSES or PSNS—level treatment, then that standard satisfies both RCRA and the CWA. In addition, if there is no pretreatment standard (i.e., PSES/PSNS) for an underlying hazardous constituent, because the Agency determined that there was no pass through, then section 3004(m) is satisfied and the RCRA standard for that underlying hazardous constituents does not apply.

If an underlying hazardous constituent is not regulated nationally by a PSES or PSNS, or by a local limit, it becomes subject to the UTS for that constituent. That UTS would be enforced as a RCRA standard. However, in cases where an underlying hazardous constituent is not already subject to categorical PSES, categorical PSNS, or to a local limit in a control mechanism reflecting PSES or PSNS-level treatment, water quality, or pass through, the control mechanism between the indirect discharger and the applicable control authority would have to be modified in order to avoid application of the UTS by rule. EPA is amending § 403.5(c)(1) and § 403.5(c)(2) of the pretreatment rules to specifically authorize control authorities to make such determinations.

The final option is for a facility to obtain a RCRA treatability variance. Thus, the amendment to the treatability variance rules also applies to indirect dischargers properly operating technology identified as the basis for their PSES or their PSNS standard.

4. Zero Dischargers Performing CWA-Equivalent Treatment

The implementation options for zero dischargers performing CWA-equivalent treatment are similar. Some of these facilities may have CWA permits authorizing specified levels of discharge. If these permit limitations apply to underlying hazardous constituents present in the RCRA-prohibited portion of the discharge, the CWA permit limit satisfies RCRA as well. The facility also could seek to amend the CWA permit to add limitations for the hazardous constituent. Enforcement then would be exclusively pursuant to the CWA.

If the zero discharger has no CWA permit, or the permit does not contain limitations for underlying hazardous constituents and is not amended to do so, then the facility would have to meet the RCRA UTS or an alternative standard established by treatability variance either at the point of discharge[4] or at an earlier point of its choosing (assuming, of course, that a valid demonstration of bona fide treatment can be made at an earlier point).

5. Implementation When CWA Standards and Limitations Will Not Be the Exclusive Standard

If the facility treats to UTS and does not modify its CWA permit or control mechanism to include a CWA standard/limitation for an underlying hazardous constituent, EPA is finalizing minimal recordkeeping requirements, under RCRA authority. Generators can use their knowledge to identify the underlying hazardous constituents reasonably expected to be present at the point of generation of the ICRT wastes which are not covered by a CWA limitation or standard and hence must be treated to meet UTS (assuming no permit modification). EPA is requiring that this information be kept on-site in files at the facility. The facility will then monitor compliance with the UTS standard for each of these constituents at the point of ultimate discharge or alternative compliance point, on a quarterly basis, and results of this monitoring must be kept in the facility's on-site files. An exceedence of the RCRA UTS standard must be documented in the facility's on site records.

These same requirements apply to facilities without NPDES permits documenting compliance as zero dischargers with CWA-equivalent treatment who are affected by this rule. The absence of a permit necessitates some alternative means of documenting compliance, and the scheme outlined above seems to be the least burdensome scheme which would still provide a reasonable means of enforcing this rule.

6. RCRA Controls Over Point Source Discharges and Domestic Sewage

Both RCRA and the implementing regulations provide that point source discharges and domestic sewage (including mixtures of domestic sewage with other wastes) are not subject to

[3] EPA is interpreting the language in § 122.62(a)(2) to indicate that the D.C. Circuit's opinion in the Third Third case is new information warranting reopening a permit.

[4] The point of compliance for a zero discharger choosing the point of discharge as a compliance point would be at the point of ultimate disposal. For those zero dischargers who discharge to a dry river bed (common in the western U.S.) not considered a ''water of the U.S.'' under the CWA, the point of compliance would be at the end-of-pipe. For those zero dischargers who spray irrigate, or otherwise place the wastewaters on the land after treatment in the surface impoundment, the point of compliance would be at the point just prior to the land placement. Furthermore, zero dischargers treating wastewaters in a tank system followed by spray irrigation or another form of land placement are also subject to this rule. For those zero dischargers who use evaporation ponds, the point of compliance is before the wastewater enters the surface impoundment, as this is the ultimate disposal point.

RCRA subtitle C jurisdiction. RCRA section 1004(27) and § 261.4(a) (1) and (2). Some commenters questioned whether by allowing CWA limitations and standards to satisfy the RCRA treatment standard requirement, EPA were somehow imposing RCRA controls where it lacks authority to do so.

This is not the case. EPA is creating here a mechanism for evaluating whether RCRA-equivalent treatment has occurred for purposes of determining whether surface impoundments (i.e. RCRA land disposal units) can permissibly be used as part of that treatment process. 976 F. 2d at 22–24. The effect, for RCRA purposes, of failing to satisfy the limitations or standards is that the facility has engaged in illegal land disposal by virtue of not performing equivalent treatment. Id. Thus, the effect of the rule is on activity upstream of the discharge point, and these activities are within RCRA's jurisdictional purview.

7. Applicability to the Pulp and Paper Industry

The concerns about integration of CWA and RCRA standards are particularly acute with respect to the pulp and paper industry. EPA is at a critical stage in developing comprehensive multi-media rules for this industry (to control both hazardous air emissions and wastewater discharges). These rules were proposed at 58 FR 66078 (Dec. 17, 1993) and are slated for promulgation by mid-1996. The rules should fundamentally affect (for the better) the types of wastewaters managed at pulp and paper facilities and the potential releases of hazardous constituents from such wastes. The Agency believes that it would be putting the cart before the horse, and would fail to properly integrating RCRA with the CWA (and potentially CAA in this case) by proceeding with implementation of the court's decision for this industry in advance of completion of this rulemaking. Cf. *Edison Electric Inst.* v. *EPA,* 2 F. 3d 438, 453 (D.C. Cir. 1993) noting when temporary deferrals of action to allow better integration of overlapping statutes is permissible. The Agency will revisit the question of how to implement the court's decision for the pulp and paper industry upon completion of the existing multi-media rulemaking.

IV. Treatment Standards for Class I Nonhazardous Injection Wells and Response to Comments

A. Introduction

Generally, Class I nonhazardous injection well owners/operators injecting decharacterized ICRT wastes do not substantially treat their waste beyond removing the characteristic by aggregating and diluting wastestreams, plus filtering of solids in order to facilitate injection. There are as many as 100 such nonhazardous facilities in addition to the approximately 54 hazardous facilities injecting ICRT wastes. As discussed in the Phase III proposed rule, EPA estimates that the average flow of a ''typical'' Class I nonhazardous well is 107,000 gallons/day. Typically, the volume of hazardous wastes comprises 25% or less of the aggregated injected wastestream.

In the Third rule, EPA proposed that characteristic wastes were not prohibited from injection into these deep wells provided they no longer exhibited a characteristic at the point they are injected.e. land disposed. 60 JR at 11704–11705. The D.C. Circuit rejected this portion of the rule, holding, in EPA's reading of the opinion, that the statutory requirements could not be satisfied absent treatment that addressed both short term and long term threats posed by land disposal of the waste, and hence that hazardous constituents in the waste had to be destroyed, removed or immobilized before injection, not merely diluted. 60 JR at 11706–11708. EPA is implementing that mandate in this rule. (However, EPA reiterates, as it did at proposal, that EPA is taking this action to implement the court's mandate, not because it is an environmental priority, or prudent use of the Agency's or the regulated community's resources. The Administration is in fact pursuing a legislative change which would restore EPA's original policy determination reflected in the 1990 Third rule.)

The effect of today's final rule is to prohibit the land disposal of characteristic waste streams at the point they are generated. If those wastes contain underlying hazardous constituents at levels exceeding the Universal Treatment Standards and (as explained further below) at levels and volumes greater than designated *de minims* amounts, those constituents would have to be destroyed, removed, or immobilized before the waste is injected. This could be accomplished either by segregating the characteristic portion of the injectate for treatment, or by treating the commingled injectate before disposal (i.e. before injection). The rule further provides that if a facility removes an equivalent mass of the hazardous constituent through source reduction, or waste treatment, that the treatment standard is satisfied. The final, alternative means of compliance is for the unit to have received a no-migration determination.

A number of commenters believed that aggregation or dilution of wastes to remove the hazardous characteristic of the waste stream prior to injection was sufficient and that the requirement to treat underlying constituents was legally unnecessary and onerous. EPA's reading of the Third Third opinion and section 3004(m) is that treatment that destroys, immobilizes, or removes hazardous constituents is required, and that this requirement is not satisfied merely by dilution. The statutory findings of the inherent uncertainty of land disposal of hazardous wastes, the propensity to bioaccumulate these same constituents, the statutory goals of waste minimization and proper waste management, plus the legislative history documenting Congressional intent not to permit treatment by dilution supports the Agency in rejecting these comments. 60 FR at 11706–708. Therefore, the Agency has decided not to allow Class I nonhazardous wells to dilute or aggregate their waste streams in order to fulfill, substitute, or avoid treatment levels or methods established in the LDRs. See the dilution prohibition added in § 148.3 of today's final rule.

Furthermore, the Agency, as proposed, is expanding the applicability of 40 CFR Part 148 to now require owners/operators of Class I nonhazardous wells to determine whether LDRs apply to their facilities.

Commenters likewise sharply questioned the Agency's determinations as to when land disposal prohibitions should attach, and state, correctly in the Agency's view, that the opinion did not compel a determination that prohibitions must attach at the initial point of waste generation or when underlying hazardous constituents are present at that point in concentrations exceeding the UTS. EPA is in fact pursuing alternatives on both of these fronts. The Agency proposed alternatives to the strictest point of generation approach, 60 FR at 11715–716, and expects to take final action on this proposal well before the effective date of the Phase III prohibitions for Class I non-hazardous UIC wells. The source reduction compliance option in this rule is a related means of dealing with this issue, since it can be conceptualized as allowing the requisite hazardous constituent reductions to be achieved by means other than downstream treatment notwithstanding presence of hazardous constituents above UTS at what is technically point of waste generation.

With regard to whether presence of hazardous constituents above UTS

would be the trigger level for the LDR prohibition, EPA has recently proposed risk-based hazardous constituent concentration levels which would implement the ''minimize threat'' requirement in section 3004(m), and would cap the technology-based treatment standards whenever the technology-based standards are lower (60 FR 66344, December 21, 1995). The *de minimis* feature of today's rule further addresses situations where EPA believes that prohibitions need not apply due to the low concentrations and volumes of hazardous constituents in the decharacterized portion of the injectate.

B. Compliance Options for Class I Nonhazardous Wells

In the proposed rule, the Agency indicated that facilities could segregate their hazardous wastes, and treat just that volume of the total waste stream to UTS levels in order to conform to the treatment requirement. A number of commenters maintained that the Agency oversimplified this approach and that such segregation was impractical from both a technical and economic standpoint. EPA acknowledges that many facilities may not practically be able to segregate streams. These facilities may utilize of other LDR compliance options as discussed below.

One option would be to apply for an exemption from treatment standards via the no-migration petition variance. EPA is promulgating a clarifying revision to 40 CFR 148.20 which allows facilities to seek a no-migration variance for their Class I nonhazardous wells, and has long indicated that this compliance option is available (see pp. 25–27, Supplemental Information Report prepared for the Notice of Data Availability, January 19, 1993, 58 FR 4972). If these facilities demonstrate to EPA that their formerly characteristic wastes (including any hazardous constituents) will not migrate out of the injection zone for 10,000 years, or no longer pose a threat to human health and the environment because the wastes are attenuated, transformed, or immobilized by natural processes, then they may continue to inject without further treatment.

A significant number of commenters responded to the proposed rule's discussion on the Agency's position on granting no-migration petitions. Comments included that petitions were a too costly option, took too much time to be processed, generic petitions for Class I non-hazardous wells should be granted, and existing no-migration exemptions should not require modification to include Phase III wastes. These comments, among others, will be discussed in detail in the ''Response to Comments'' background document for this rule, but basically many had partial merit.

First, although the Agency has estimated earlier that the average petition costs an operator $343,000, several individual petition reviews have far exceeded that amount. The Agency will examine the possibility of revising petition cost data in future LDR rules. Second, although a petition may take up to 3 years to process, the Agency (as noted above) indicated as early as 1992 (after the Third Third opinion) that it would begin review of Class I nonhazardous injection well no-migration petitions if submitted (58 FR 4972, January 19, 1993). Although time and resource restraints on the Agency are real, the Agency will continue to work with affected Class I operators in order to facilitate the no-migration petition review process. Third, although EPA has established a reasonable knowledge base on the review process for Class I hazardous facilities, it cannot automatically infer that all Class I nonhazardous facilities will successfully make a no-migration demonstration. Well site geology, hydrogeology, abandoned well area of review, and the specific characteristics of the injectate and receiving formation are site specific factors which, as a factual matter, must be evaluated individually in order to demonstrate ''to a reasonable degree of certainty'' (RCRA section 3004(g)(5)) that the no migration standard has been satisfied. See Supplemental Report to Notice of Data Availability, January 19, 1993, at 25–26 9. It must be remembered that not every Class I injection well applying for the variance has been able to make the demonstration, and that one salutary effect of the no migration process has been to identify certain (albeit a limited number of) wells that would not be capable of adequately containing injectate over the long term.

EPA agrees completely with commenters, however, that wells that already have approved no migration exemptions are not affected by the Third Third opinion and thus are not affected by land disposal restrictions affecting decharacterized wastes. (In fact, EPA does not read the proposal to suggest otherwise.) Absent a change in the waste being injected, there is no reason to reopen no migration determinations that have already evaluated the entire injected waste stream. 57 FR at 31963 (July 20, 1992).

EPA is also promulgating additional means for Class I nonhazardous facilities to comply with the LDR requirements. Revisions to 40 CFR 148.1(c)(1) and 148.4 will allow Class I nonhazardous owners and operators to apply for a case-by-case extension of the capacity variance for up to one year (renewable for up to an additional year) in order to acquire or construct alternative treatment capacity. Based on experience, EPA believes that the availability of the case-by-case extension coupled with national capacity variance(s) should allow operators more than adequate time to acquire alternative treatment or complete the no-migration petition process. Two other options include the pollution prevention option and the de minimis volume exclusion.

C. Pollution Prevention Compliance Option

The final rule provides an alternative means of obtaining the reductions in mass loadings of hazardous constituents mandated by the Third Third opinion. Under this alternative, mass reductions can be achieved by removing hazardous constituents from any of the wastestreams that are going to be injected, and these reductions in mass loadings can be accomplished by means of source reduction (i.e. equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control), recycling, or conventional treatment. As an example, if a facility can make process changes that reduce the mass of cadmium by the same amount that would be removed if the prohibited wastestream was treated to satisfy UTS, the facility would satisfy LDR requirements. The facility could also remove cadmium from any of the streams (prohibited or non-prohibited) which are going to be injected, or could find a means of recycling some portion of the injectate to reduce injected mass loadings of cadmium. In all cases, the result would be that the mass loading of hazardous constituents into the injection unit would be reduced by the same amount as it would be reduced by treatment of the prohibited, characteristic portion of the injectate. 976 F. 2d at 23 n. 8; see also *Specialty Steel Inst.* v. *EPA,* 27 F. 3d 642, 649 (D.C. Cir. 1994) (treatment standards that result in lower volume of waste to be disposed—precisely what the alternative standard here can achieve—are a permissible means of complying with RCRA section 3004 (m)).

Commenters further requested that this alternative be available on a hazardous constituent by hazardous constituent basis. EPA agrees that this is

reasonable since it still results in the requisite reduction of hazardous constituent mass loading and provides desirable compliance flexibility. Of course, if the pollution prevention alternative is used partially, there must still be compliance by some alternative means for the remaining hazardous constituents subject to the prohibition.

The Agency is not, however, adopting any type of hazardous constituent trading provision as part of this rule. It first is not clear that such a provision would satisfy the equivalency test enunciated by the court. In addition, given the narrow time frame available to the Agency to develop this rule, the Agency lacks the time and resources to properly evaluate the ramifications of the idea in this proceeding.

As a means of implementing this alternative, EPA is adopting the method proposed. The mass/day reduction of a particular underlying hazardous constituents is to be calculated by comparing the injected baseline with the allowance. The injected baseline is determined by multiplying the volume/day of prohibited hazardous waste generated and subsequently injected times the concentration of hazardous constituents before the pollution prevention measure. The allowance is determined by multiplying the volume/day of a hazardous constituent generated/injected times the UTS for that constituent. The difference between the injected baseline and the allowance is the required mass/day reduction.

EPA proposed, and is adopting the requirement that after successful employment of a pollution prevention measure, the facility must demonstrate that the injected mass achieves the required mass/day reduction. Because the amount of an underlying hazardous constituent in the injectate is dependent upon the level of production, a correction factor for production is needed. In the example given in the proposal (60 FR 11714), the calculation for the injected baseline was corrected by a production variability factor based on volume. The Agency had solicited comment on whether there are production parameters other than volume (e.g., mass, square footage, etc.). One commenter gave a specific example where square footage would be a more appropriate parameter. Therefore, the Agency is promulgating today that any appropriate parameter may be used to calculate the production variability factor. Another commenter was concerned that in the example the baseline used after pollution prevention seemed to be based on the production rate, whereas the baseline before pollution prevention was not. The commenter misunderstood the purpose of the production variability factor. In the example the post-pollution prevention injectate was adjusted by the production variability factor; however, the example could have been reorganized such that the initial baseline was adjusted for production variability. It was not necessary to adjust both the pre- and post-pollution prevention baselines for production variabilty; in fact, doing so would cause the variability factor to cancel out.

Several commenters were concerned that there are other factors besides rate of production which could cause variability in the level of an underlying hazardous constituent. One commenter mentioned variations in operation of specific source unit operations such as distillation and/or stripping trains feeding the injection unit. Another commenter stated that since they do not actually produce anything, they have no production rates to use, and suggested basing production on man-hours worked or total water consumed by a facility. The Agency agrees with all these suggestions. The mass/day of an underlying hazardous constituent after pollution prevention is based on the flowrate multiplied by the concentration of the constituent, and must be less than or equal to the calculated mass/day allowance for that underlying hazardous constituent. Beyond this basic formula, the facility can adjust for any factors which would cause a variation in the concentration of the underlying hazardous constituent, provided the variation(s) are part of a normal operating procedure.

Under this approach, a facility would make a one-time change in operating practice. Because the mass loading reductions resulting from the practice are obtained from the time of the change forward, it obviously is not necessary (and neither practical or likely feasible) for the facility to make on-going (potentially daily) changes to qualify under the provision.

A number of commenters, although supporting the Agency's proposal, argued that it should apply to facilities that already have implemented source reduction or other pollution prevention practices before the effective date of the rule, not just those making the change prospectively (as EPA proposed). Their point is that facilities that have already implemented source reduction, and as a result may now have fewer opportunities to do so, should not be on a worse footing than facilities who have been laxer and thus now have a wider range of possible means of reduction. This argument certainly has equitable force. At the same time, however, there has to be some objectively defined baseline period for the rule to be enforceable, and for there to be some nexus between the pollution prevention measure and the reduced mass loadings in current injectate. Balancing these considerations, the Agency is establishing 1990 as the base year for establishing a baseline. This was the year EPA adopted (per Congressional schedule) the prohibitions for characteristic hazardous waste and (coincidentally) the year of the Pollution Prevention Act.

EPA is sensitive to other comments regarding the need for this alternative to be objectively verifiable. The Agency is therefore requiring that facilities must monitor the underlying hazardous constituent concentration and the volume of the prohibited hazardous waste stream (i.e. all characteristic streams subject to LDR treatment standard requirements that will be decharacterized before injection), both on the day before and the day after successful implementation of pollution prevention. Results of this monitoring must be reported to the EPA Region or authorized State on a one-time basis. The Agency had solicited comment on whether more than one day is needed for monitoring. Several commenters were concerned that certain pollution prevention methods would take several weeks, not one day, to show results. It should be noted that the Agency did not intend for the pollution prevention method to show results in one day. Results should be achieved by the effective date of the rule for the facility to be in compliance, and the pollution prevention method should have been employed no earlier than 1990. The facility must also include a description of the pollution prevention method used (including any recycling alternative). In addition, the facility will monitor and keep on-site records of the results on a quarterly basis (this time period is selected to match the quarterly monitoring already required under SDWA regulations at 40 CFR 146.13 (b)). If the facility changes its means of complying with this alternative, it must renotify the EPA Region or authorized State, and again document the basis for its compliance by monitoring.

D. De Minimis Volume Exemption

EPA is finalizing the *de minimis* exemption proposed. 60 FR at 11714–11715. The terms of the exemption are that if decharacterized wastewaters comprise no more than 1% of the total injectate, if the total volume of the characteristic streams do not exceed 10,000 gallons per day, and if underlying hazardous constituents are

present in the characteristic wastes at concentrations less than 10 times UTS at the point of generation, then the wastes are not prohibited from injection in a Class I non-hazardous deepwell (assuming the injectate is not hazardous at the point of injection). The Agency continues to believe that under these circumstances, the relatively small decharacterized hazardous waste streams would not appreciably alter the risks posed by the injection practice.

Generally, the proposed approach was well received. Some commenters stated, however, that the *de minimis* volume exemption, as proposed, would allow excessively large volumes of routinely generated characteristic wastes to go untreated to disposal in deep wells, while others believe that the specific quantifying parameters are overly restrictive. The Agency analyzed potential risks associated with concentrations of 5 contaminants detected in Class I facility waste streams at 10, 20, and 50 times UTS. (This analysis was conducted in conjunction with revising the Regulatory Impact Analysis For Underground Injected Wastes for this rule. See 60 FR 11715.) In brief, risk estimates for 4 geologic settings and 2 well malfunction scenarios were found to be below levels of regulatory concern at 10 and 20 times UTS. However, at 50 times UTS, risk estimates for cancer and hazard index were above regulatory concern for a waste stream containing carbon tetrachloride, assuming an abandoned borehole failure within 500 feet of the injection well. Taking into account the statutorily enumerated ''long-term uncertainties associated with land disposal'' (RCRA section 3004(d)(1)(A)), EPA believes the 10 × UTS level to be well within the zone of reasonable values it could select as *de minimis*. The one percent volumetric requirement is consistent with other longstanding *de minimis* exemptions for wastewater management systems in the subtitle C rules (see § 261.3(a)(2)(iv) (A) and (E)), and would normally cap the total volume of characteristic injectate at approximately 1100 gallons per day, given average Class I UIC non-hazardous injection rates.

At a rate of 1100 gallons per day, 10×UTS for carbon tetrachloride would mean a mass loading of approximately 165 mg of the constituents being injected each day. Mass loadings for the other hazardous constituents would similarly be modest. EPA again believes that these small mass loadings would have *de minimis* effect on the risk potential posed by the injection practice and consequently should be exempted from the prohibition.

BILLING CODE 6560–50–P

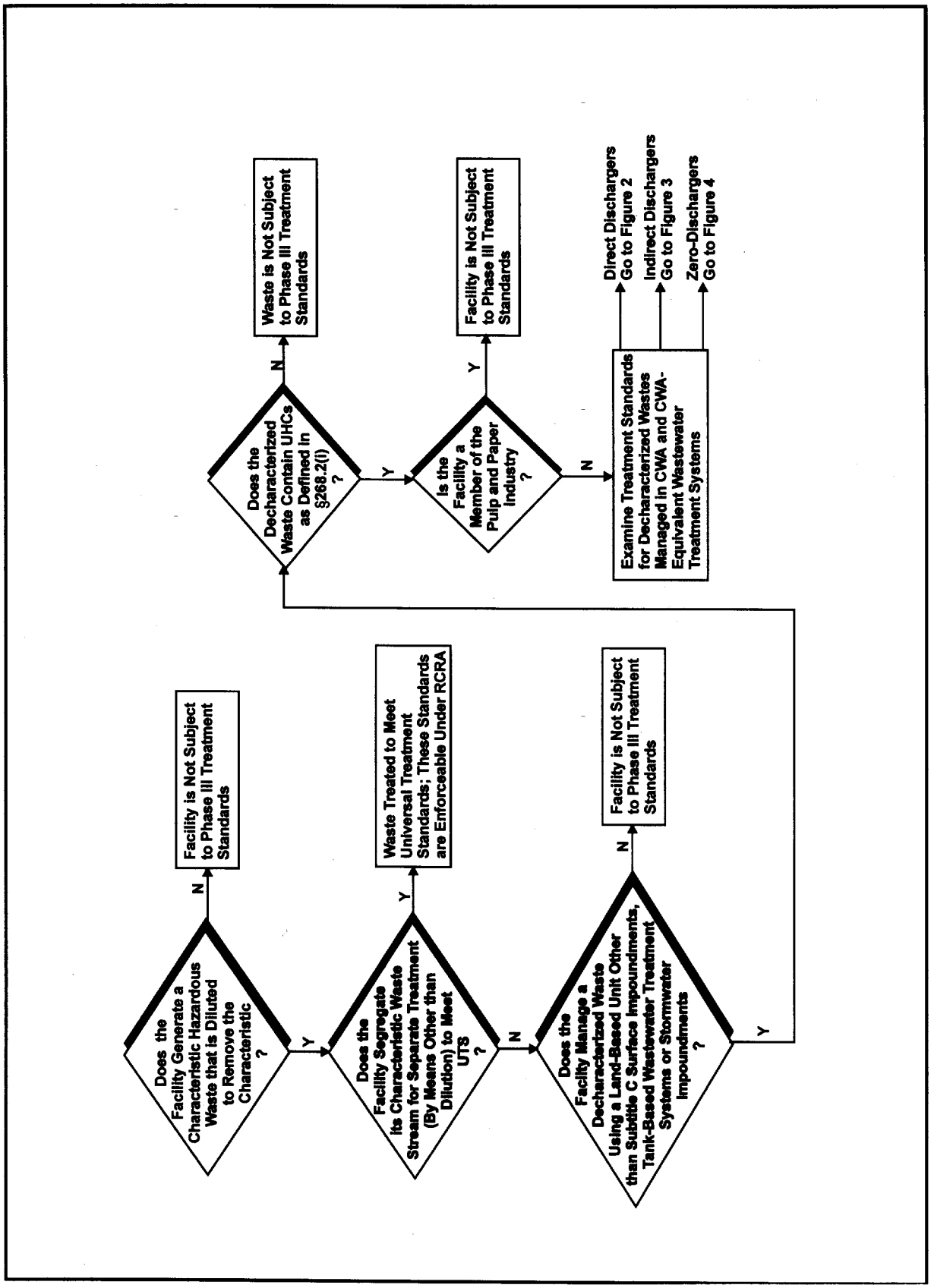


Figure 1. General Applicability Criteria for Treatment Standards for Clean Water Act (CWA) and CWA-Equivalent Wastewater Treatment Systems

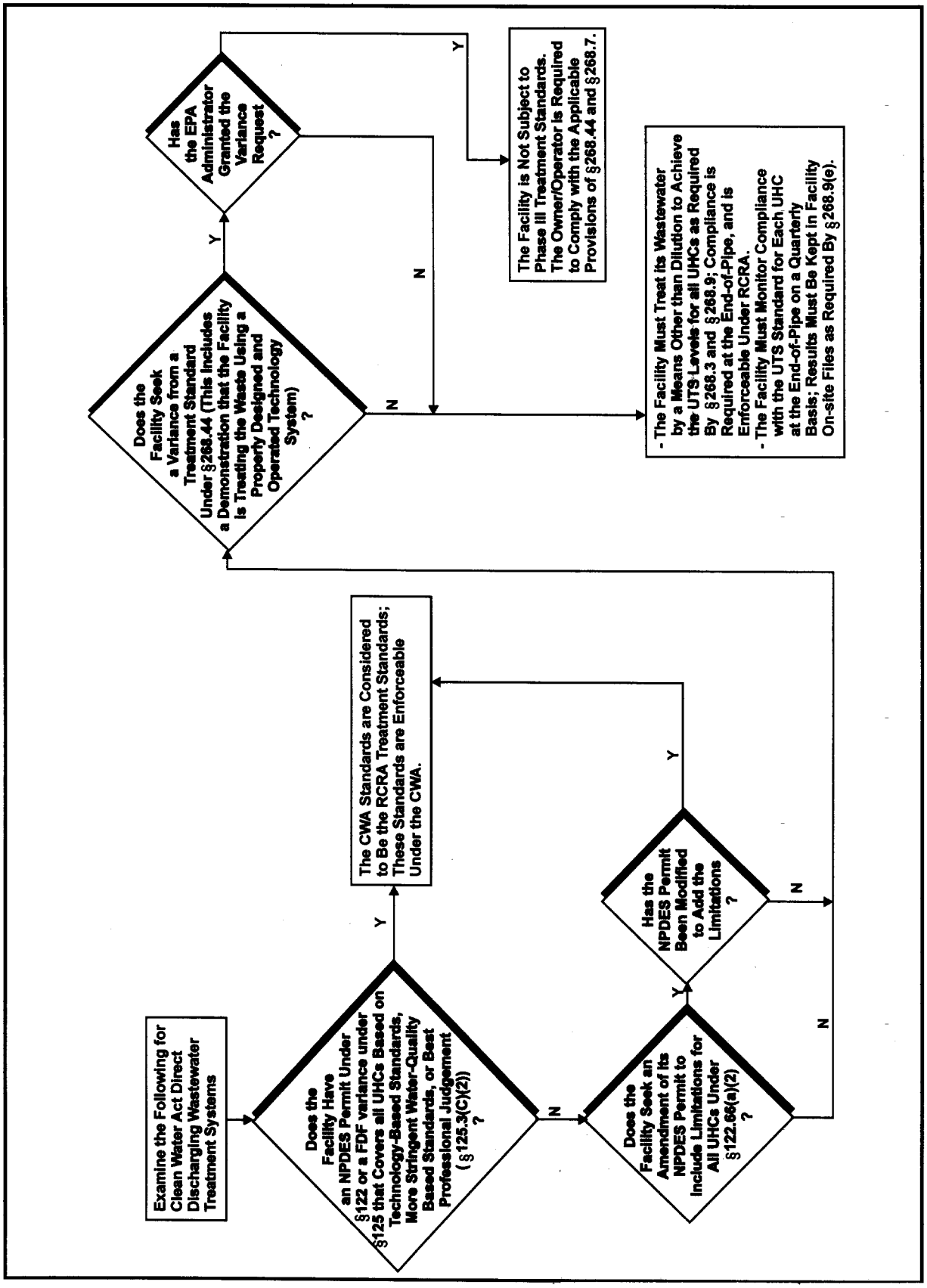


Figure 2. Applicability Criteria and Treatment Standards for Decharacterized Wastes Managed in Clean Water Act Direct Discharging Wastewater Treatment Systems

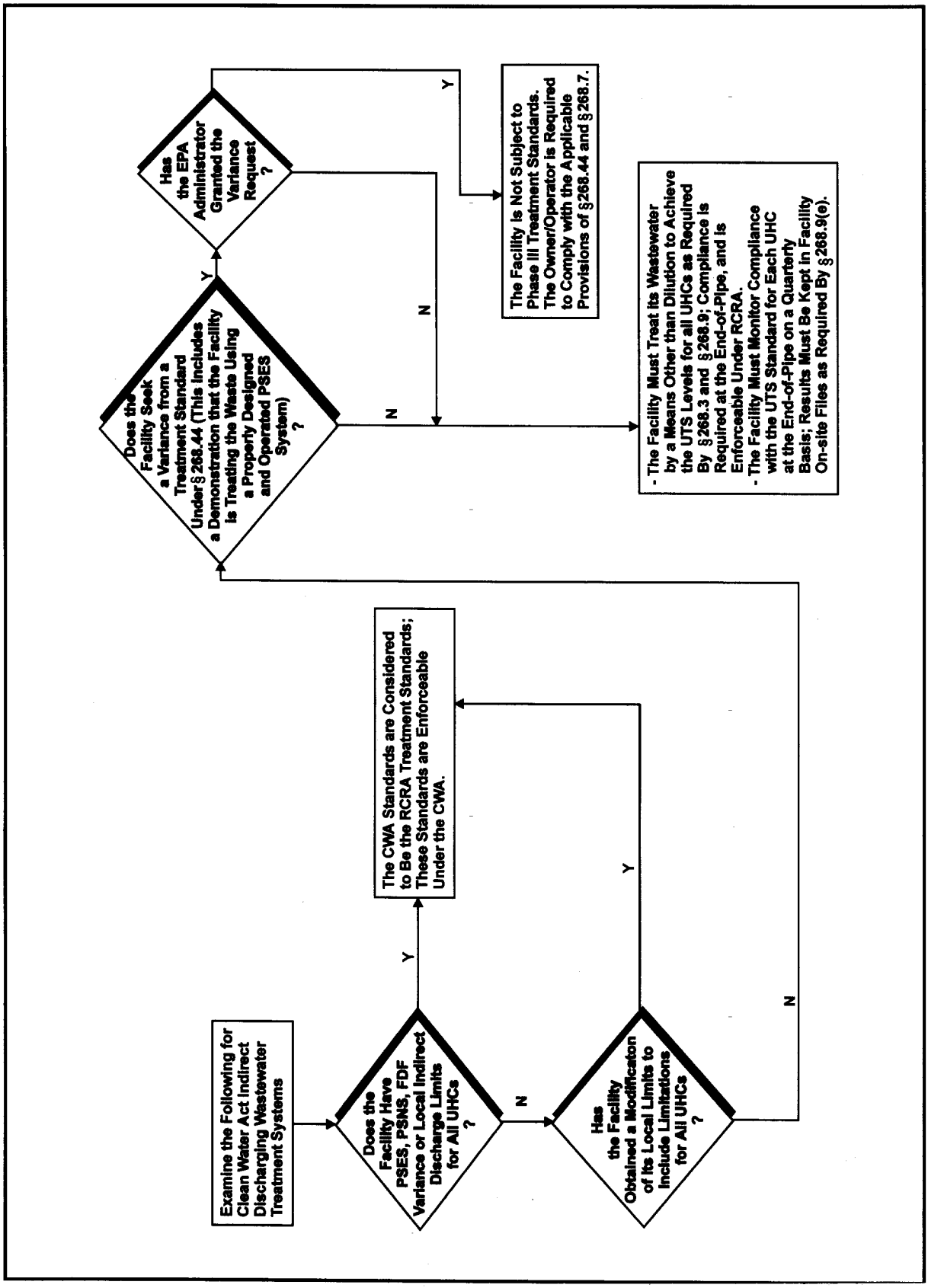


Figure 3. Applicability Criteria and Treatment Standards for Decharacterized Wastes Managed in Clean Water Act Indirect Discharging Wastewater Treatment Systems

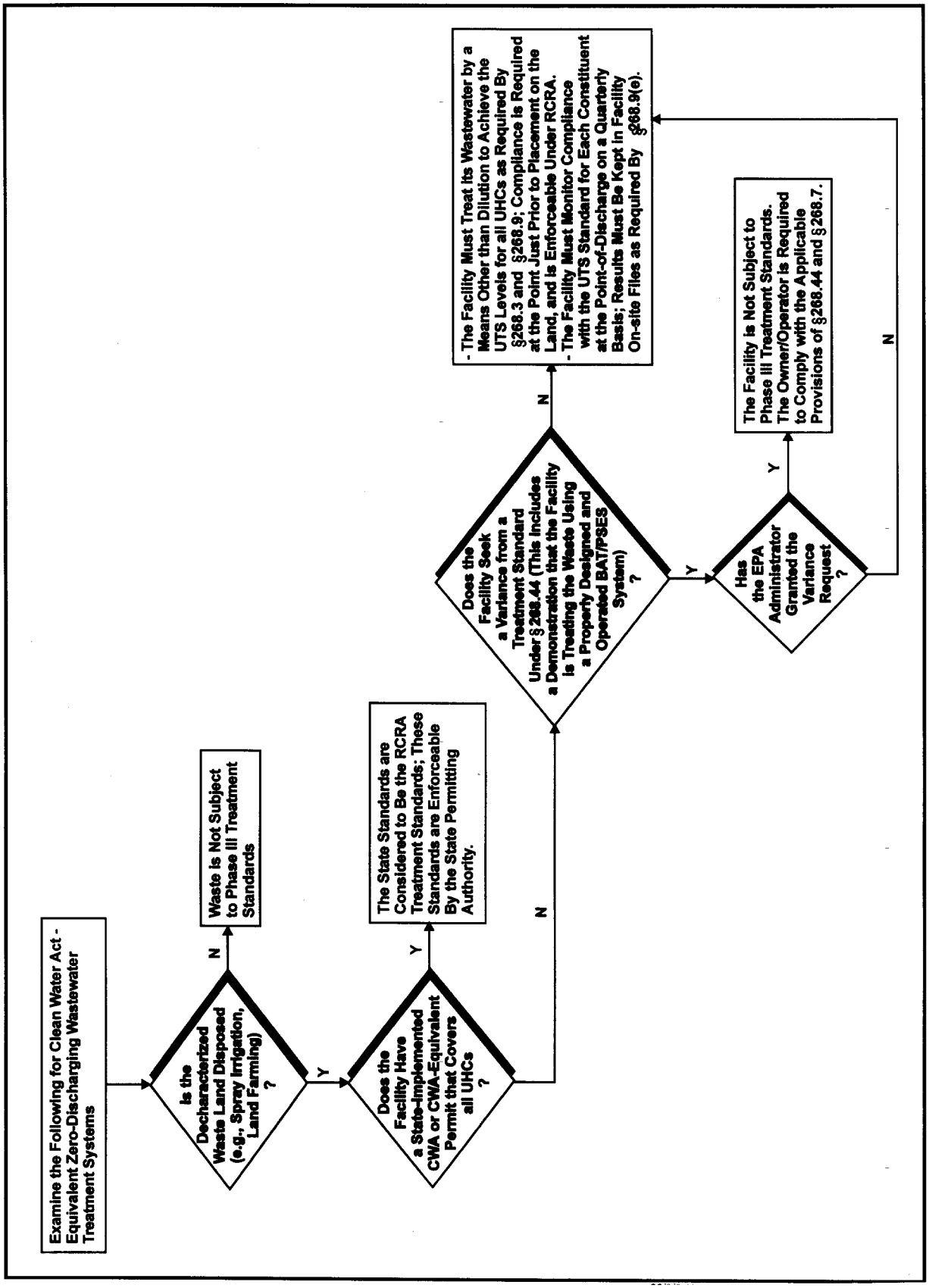


Figure 4. Applicability Criteria and Treatment Standards for Decharacterized Wastes Managed in Clean Water Act - Equivalent Zero-Discharging Wastewater Treatment Systems

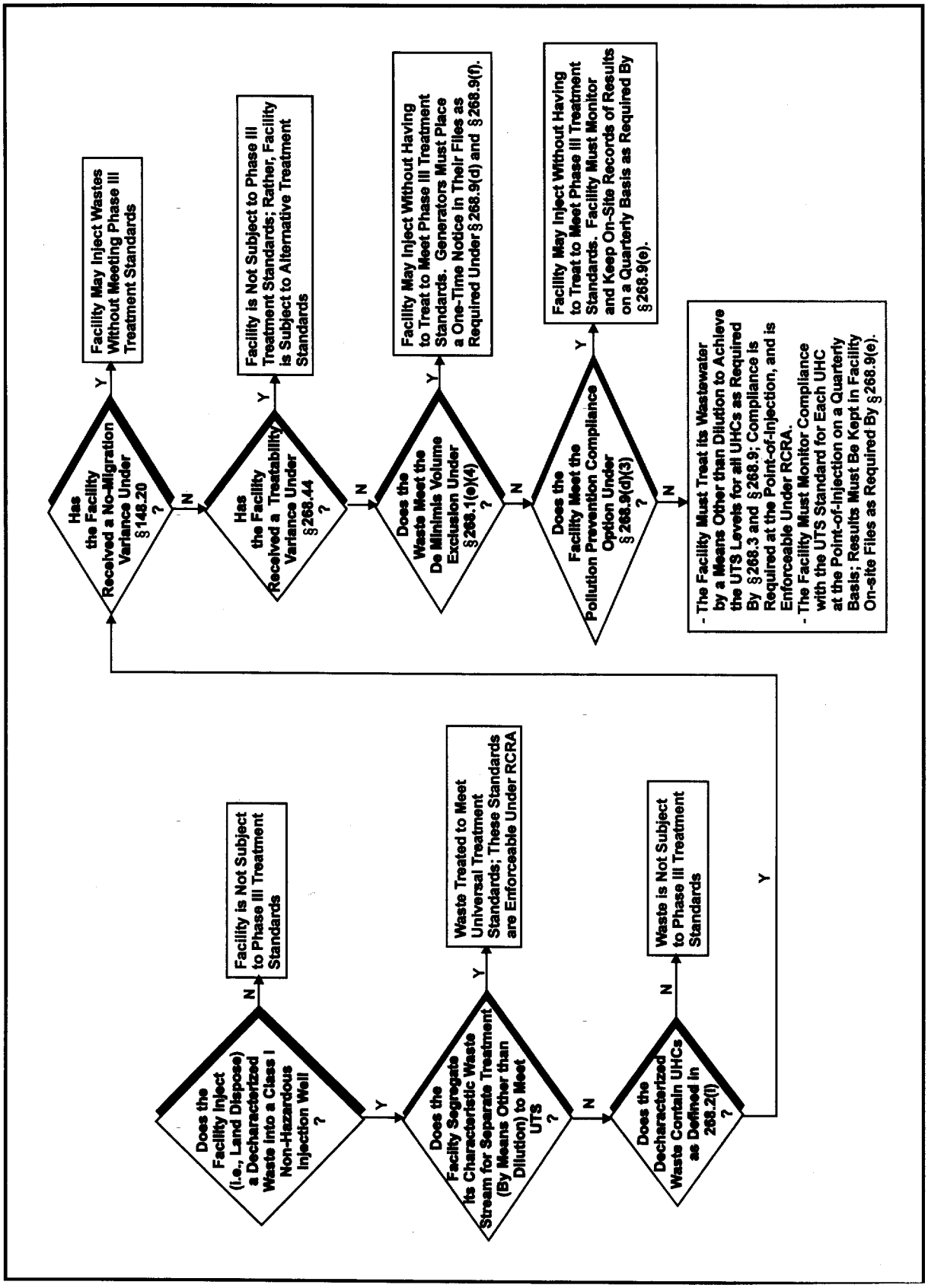


Figure 5. General Applicability Criteria and Treatment Standards for SDWA-Regulated Facilities Discharging Decharacterized Waste Into Class I Non-Hazardous Injection Wells

BILLING CODE 6560–50–C

V. Treatment Standards for Newly Listed Wastes

A. Carbamates

Hazardous Wastes From Specific Sources (K Waste Codes)

K156—Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.
K157—Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.
K158—Bag house dust, and filter/separation solids from the production of carbamates and carbamoyl oximes.
K159—Organics from the treatment of thiocarbamate wastes.
K160—Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes.
K161—Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust, and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)

Acute Hazardous Wastes (P Waste Codes)

P203 Aldicarb sulfone
P127 Carbofuran
P189 Carbosulfan
P202 m-Cumenyl methylcarbamate
P191 Dimetilan
P198 Formetanate hydrochloride
P197 Formparanate
P192 Isolan
P196 Manganese dimethyldithiocarbamate
P199 Methiocarb
P190 Metolcarb
P128 Mexacarbate
P194 Oxamyl
P204 Physostigmine
P188 Physostigmine salicylate
P201 Promecarb
P185 Tirpate
P205 Ziram

Toxic Hazardous Wastes

U394 A2213
U280 Barban
U278 Bendiocarb
U364 Bendiocarb phenol
U271 Benomyl
U400 Bis(pentamethylene)thiuram tetrasulfide
U392 Butylate
U279 Carbaryl
U372 Carbendazim
U367 Carbofuran phenol
U393 Copper dimethyldithiocarbamate
U386 Cycloate
U366 Dazomet
U395 Diethylene glycol, dicarbamate
U403 Disulfiram
U390 EPTC
U407 Ethyl Ziram
U396 Ferbam
U375 3–Iodo-2-propynyl n-butylcarbamate
U384 Metam Sodium
U365 Molinate
U391 Pebulate
U383 Potassium dimethyl dithiocarbamate
U378 Potassium n-hydroxymethyl-n-methyldithiocarbamate
U377 Potassium n-methyldithiocarbamate
U373 Propham
U411 Propoxur
U387 Prosulfocarb
U376 Selenium, tetrakis (dimethyldithiocarbamate)
U379 Sodium dibutyldithiocarbamate
U381 Sodium diethyldithiocarbamate
U382 Sodium dimethyldithiocarbamate
U277 Sulfallate
U402 Tetrabutylthiuram disulfide
U401 Tetramethylthiuram monosulfide
U410 Thiodicarb
U409 Thiophanate-methyl
U389 Triallate
U404 Triethylamine
U385 Vernolate

EPA is promulgating the treatment standards that were proposed for wastes from the carbamate industry specified above.

The preamble of the proposed rule described the basis for these treatment standards in greater detail (60 FR 11720). For background information on waste characterization data, data gathering efforts, and applicable technologies, see the Best Demonstrated Available Technology (BDAT) Background Document for Newly Listed or Identified Wastes from the Production of Carbamates.

The concentration-based treatment standards being promulgated today for carbamate wastewaters and nonwastewaters are at UTS levels for certain constituents, and at newly-established levels for other constituents that are today being added to the UTS list. The UTS standards have already been promulgated for 21 of the constituents of concern (16 organic constituents and 5 metals). The Agency is promulgating new UTS for 42 constituents associated with carbamate wastes. Forty of these constituents are chemicals produced by the carbamate industry which may be grouped into the following categories: carbamates and carbamate intermediates, carbamoyl oximes, thiocarbamates, and dithiocarbamates. Please refer to the Background Document for definitions of these chemical groups and the categorization of these 40 chemicals. The other 2 constituents for which new UTS are being promulgated (triethylamine, and o-phenylene diamine) are not carbamate products, but are hazardous constituents present at levels of regulatory concern in carbamate wastes.

One commenter requested clarification on the applicability of the carbamate treatment standards, stating that the summary section of the proposed treatment standards said that treatment standards were being proposed for certain hazardous wastes ''including those from the production of carbamate pesticides'', whereas the section of the rule that directly addressed carbamate wastes referred to carbamates without the pesticide limitation. EPA points out in response that the final listing rule which defined the new waste codes does not limit the definition to pesticides only. The treatment standards being promulgated apply to all wastes which fit the definitions of the waste codes established in the final listing rule.

One commenter stated that EPA exceeded its authority under RCRA section 3004 and violated the Administrative Procedure Act by preparing the proposed treatment standards and sending this rule to OMB well before the final listing had been promulgated. EPA points out that the proposed treatment standards were actually published after publication of the final listing rule. The proposed treatment standards were modified to conform with the changes that appeared in the final listing; thus, treatment standards were only proposed for those carbamate wastes whose listing had been promulgated in final form. Proposed standards for wastes whose listings were not finalized were eliminated from the proposed treatment standards rule. Given the statutory requirement described above (i.e., the requirement to finalize LDR treatment standards six months after the listing is finalized), Congress must have envisioned that the two rulemaking activities would occur in close proximity.

One commenter had several objections to the proposed standards for thiocarbamate wastes, stating that 1) nonwastewater standards should not have been based on detection limits compiled from sampling and analysis performed as part of the listing process

because the Agency made errors in the sampling and analysis; 2) that EPA has no data to support the assertion that the proposed UTS limits can be met by thermal destruction technologies and that the source of the detection limit used to develop the nonwastewater standard was not clearly identified; and, 3) that no document was found in the record to support the proposed wastewater limit of 0.003 mg/l for thiocarbamate constituents (A2213, Butylate, Cycloate, EPTC, Molinate, Pebulate, Prosulfocarb, Triallate, Vernolate), based on granular activated carbon absorption, giving the commenter no basis to evaluate the achievability of this treatment standard.

To respond, the nonwastewater limit for thiocarbamate wastes was actually based on a detection limit of 0.5 mg/kg by GC/NPD, identified in a general characterization report addressing the newly regulated constituents, rather than on the limit of 0.125 mg/kg by SW–846 8270B, identified in the sampling and analysis reports. The commenter has not yet provided any data to indicate that the proposed treatment standards for nonwastewaters cannot be met.

The Agency has decided to promulgate a treatment standard of 0.042 mg/l in wastewaters for the thiocarbamate constituents identified above. This standard is based on an analytical detection limit of 0.015 mg/l for Butylate, identified in an activated carbon isotherm test performed by the Office of Water to support development of effluent guideline limitations. The Agency had proposed a wastewater limit of 0.003 mg/l, based on data taken from the PEST (Pesticide Treatability Database) database containing treatability data for pesticides, prepared and maintained by RREL (Risk Reduction Engineering Laboratory) in Cincinnati, Ohio. However, upon review of the available data, the Agency has decided that the Office of Water data is more accurately representative of available wastewater treatment than the pilot-scale data from the PEST database, and has decided to change the final treatment standard accordingly.

EPA is today clarifying that the LDRs do not apply to waste streams which were specifically exempted from the definition of hazardous waste in the final listing rule for carbamates. These waste streams include sludges from the biological treatment of K156 and K157 and streams which satisfy the concentration-based exemption from the definition of K156 and K157 codified at § 261.3(a)(2)(iv)(G).

The promulgation of treatment standards for carbamate wastes has greatly expanded the number of constituents covered by the Universal Treatment Standards at Section 268.48. The Agency wishes to clarify that only a very limited number of generators or treaters, such as manufacturers or users of carbamate products, are expected to have these new constituents present in their wastes. Therefore, affected parties may rely on process knowledge to determine if it is necessary to analyze for these constituents.

The commenter has not yet provided any data to indicate that the proposed treatment standards cannot be met. The commenter did indicate an intention to submit biological treatment data for thiocarbamate wastes. This commenter was instructed to submit this data quickly (by the end of August) to allow the Agency time to give consideration to this data prior to issuing the final rule.

B. Spent Aluminum Potliners (K088)

K088—Spent potliners from primary aluminum reduction.

EPA proposed to establish treatment standards for K088 expressed as numerical concentration limits (see 60 FR 11722) for the following constituents: acenapthene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenz(a,h)-anthracene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, cyanide and fluoride. Today, EPA is promulgating these treatment standards as proposed. The nonwastewater treatment standards for cyanide, and the organic constituents, are based on a total composition concentration analysis. The nonwastewater treatment standards for fluoride, and the metal constituents, are based on analysis using the TCLP. All wastewater treatment standards are based on total composition concentration analysis.

1. Comments Received on the ''Inherently Waste-Like'' Determination

The majority of the comments received on the issue of declaring K088 ''inherently waste-like'' opposed such a determination. As discussed in the proposal, declaring K088 inherently waste-like would require that all K088 treaters/recyclers obtain a RCRA Part B permit regardless of whether the K088 is recycled, reused, used as a feedstock in a process, or conventionally treated. The commenters asserted that this designation would discourage recycling/reuse and development of innovative technologies, and would be overly burdensome for many of the small companies pursuing recycling technologies.

The Agency was persuaded by commenters that a determination of ''inherently waste-like'' is unnecessary at this time. Instead, any determination of whether a particular K088 processing technology is a type of excluded recycling activity would need to be made on a case-by-case basis by EPA Regions or authorized states. EPA was persuaded by commenters that allowing individual flexibility in making such a determination is desirable here.

Criteria that are typically relevant in making any such determinations are set out (among other places) at 50 FR at 638 (Jan. 4, 1985); 53 FR at 522 (Jan. 8, 1988); and 56 FR at 7159 and 7185 (Feb. 21, 1991). EPA also repeats the concerns voiced in the proposed rule that spent aluminum potliners contain high concentrations of cyanides and polyaromatic hydrocarbons which may be conventionally treated by thermal recovery processes, and that these and other hazardous constituents are present in the potliners in concentrations well exceeding those found in the raw materials or products for which the spent potliners would be substituting. 60 FR at 11723 n. 11. Other concerns are that the thermal recovery processes appear to pose the same potential risks of harmful air emissions as processing hazardous wastes in industrial furnaces, that the residues of recovery processes may not be adequately treated, and that storage of spent potliners can (and indeed has) posed significant risk. Id. at 11723–24. EPA also repeats that many of these units may already be subject to the rules for industrial furnaces burning hazardous wastes, since those rules apply to industrial furnaces that burn hazardous wastes for energy recovery, material recovery, or destruction. Id. at 11722 and n. 10; 56 FR at 7142; 50 FR at 49171–49174 (Nov. 29, 1985); 40 CFR 266.100.

A consequence of EPA's decision to allow for individualized determinations is that it is also unnecessary (and indeed, not factually justified) to make a general determination of ''substantial confusion'' pursuant to 270.10(e)(2) which could establish an opportunity for interim status eligibility. That finding would have been premised on the generic inherently wastelike determination (see 60 FR at 11723), which the Agency is not making. EPA is also not pursuing in this proceeding the idea of toxic air emission standards under section 112(d)(1) of the Clean Air Act for these sources. These sources could be subject to these standards if they are major (or, in some cases, area)

sources under section 112, but that determination need not be part of the present rulemaking.

2. Comments Received on Regulated Constituents

EPA requested comment on regulating the phthalates: bis (2-ethylhexyl) phthalate, di-n-butyl phthalate and di-n-octyl phthalate. These constituents have seemingly been detected in the untreated potliner and the treated residue; however, EPA believes that their presence may simply be due to lab contamination. Commenters overwhelmingly requested that these phthalates not be regulated. The Agency agrees and is not including any phthalates in the list of regulated constituents for K088.

A number of commenters requested that benzo(a)pyrene be used as a surrogate for analyzing organics. The commenters were concerned that analytical costs for other PAHs would be excessive. EPA is not convinced that analyzing benzo(a)pyrene would be sufficient for determining proper treatment of all organics. The concentration of one constituent does not always reflect the concentration of similar constituents in a waste. Surrogate analyses assume that all PAHs are present at similar concentrations which may or may not be true. Because of the variability of concentrations found in K088 wastes, benzo(a)pyrene may not be present while other PAHs may be present. Analyzing only for benzo(a)pyrene or any other potential surrogate does not ensure the treatment to UTS concentrations of other PAHs. In addition, the Agency believes that since all of the PAHs are analyzed by a single method the cost increase for additional PAHs should not be significant. Therefore, the Agency does not believe the organic constituents monitored in K088 wastes should be limited to a surrogate indicator. EPA is allowing, however, flexibility in the waste analysis plans developed by the companies with their permit writers to analyze only for those constituents expected to be present in the generated K088.

The Agency proposed to regulate fluoride in K088. While fluoride is not a ''hazardous constituent'', i.e., listed in Appendix VIII of part 261, it is present in very high concentrations in K088 and is capable of causing substantial harm in the form of groundwater degradation, adverse ecological effects and potential adverse human health effects. The Agency's view thus is that, unless fluoride in this waste is treated, the legal standard in section 3004(m) would not be satisfied. That is, treatment would not ''substantially diminish the toxicity of the waste * * * so that short-term and long-term threats to human health and the environment are minimized.'' RCRA section 3004(m)(1). In addition, as discussed in the proposed rule, EPA reads the language in section 3004 (d)(1), (e)(1), and (g)(5) to require that land disposal may still be prohibited after treatment of hazardous constituents if the waste might still pose substantial hazards due to presence of other constituents or properties. 56 FR at 41168 (August 19, 1991); *NRDC* v. *EPA,* 907 F. 2d 1146, 1171–72 (D.C. Cir. 1990) (dissenting opinion). These hazards could be posed due to lack of treatment of other constituents in the waste, in this case, fluoride.

The Agency requested comment on whether fluoride should be added to Appendix VIII, as well. The overwhelming response of the commenters is that fluoride should not be added to Appendix VIII. The Agency agrees that fluoride does not pose the same risks in other wastes because it does not occur in such high concentrations. Furthermore, adding fluoride to Appendix VIII has associated potential analytical costs which would be unwarranted. Therefore, even though the Agency is regulating fluoride in K088, it is not adding it to Appendix VIII at this time.

3. Comments Received on Data

Several comments were received regarding EPA's use of data on K088. One comment in particular suggested that EPA ignored relevant data gathered by the Aluminum Association. The Agency did not ignore these data. They were submitted after the proposal and are currently in the docket for this final rule. The Agency has reviewed these data and found that they do not support any changes to the proposed treatment standards that are being finalized in this rule. This issue is discussed in greater detail in the Response to Comments background document.

4. Comments Received on Technical Basis for BDAT

There were a number of comments submitted on the technical basis for the numerical treatment standards. As described in the preamble to the proposed rule, most of the treatment standards are taken from the universal treatment standards (UTS) (59 FR 47988, September 19, 1994) which were developed for each constituent by evaluating all existing Agency data from various technologies. The exception to the UTS for K088 constituents is the fluoride treatment standard, which was taken from the Reynolds delisting petition. While K088 is a unique waste, available data indicate that these UTS levels can be routinely achieved.

There seemed to be some confusion in that some commenters believed that EPA was proposing a required technology for the treatment of K088. This is not the case. The longstanding position of the Agency is when numerical treatment levels are established under the LDR program, any treatment technology (other than impermissible dilution) can be used to achieve those levels.

Additional K088 comments along with EPA's responses are provided in the Response to Comments Background Document located in the docket for this rule.

VI. Improvements to the Existing Land Disposal Restrictions Program

A. Completion of Universal Treatment Standards

1. Addition of Constituents to Table 268.48

As discussed in the section on carbamate wastes, EPA is today adding 42 new constituents to the table of universal treatment standards (Table 268.48), for which treatment standards are being promulgated today.

2. Wastewater Standard for 1,4-Dioxane

EPA proposed on March 2, 1995 (60 FR 11702), to establish a wastewater treatment standard for 1,4-dioxane. 1,4-Dioxane was the only UTS constituent for which EPA had promulgated a nonwastewater treatment standard but not a wastewater standard. At that time, the Agency proposed a wastewater UTS for 1,4-dioxane of 0.22 mg/l. This proposed standard was based on the maximum daily limit for 1,4-dioxane that had been developed as part of the proposed effluent guidelines for the pharmaceutical industry (60 FR 21592, May 2, 1995). This standard was based on a transfer of distillation performance data from methanol to 1,4-dioxane.

Today, the Agency is promulgating a revised treatment standard for wastewater forms of 1,4-dioxane based on 5 data points. This data was submitted by one of the commenters and represents actual treatment of wastewaters containing 1,4-dioxane. The Agency prefers to use actual treatment data in lieu of a data transfer whenever possible. These data show that wastewaters containing between 2265–7365 mg/l of 1,4-dioxane can be treated by distillation to levels between 3–7 mg/l, representing a 99.9% removal rate for the dioxane. As a result of this data submittal, the Agency is today promulgating a UTS of 12.0 mg/l for 1,4-

dioxane wastewaters based on the performance of distillation. The standard was calculated following the standard methodology employed by EPA in developing all BDAT treatment standards.

Comments received on the wastewater treatment standard for 1,4-dioxane focused on three major points: (1) The unavailability, at the time of proposal, of data from the effluent guidelines proposed rule for the pharmaceutical industry, from which the proposed standard had been derived; (2) the inappropriateness of transferring distillation data from methanol to 1,4-dioxane (based on the effluent guidelines data); and (3) analytical difficulties inherent in analyzing for 1,4 dioxane in wastewater.

In the proposed rule, EPA referenced effluent guidelines data that would be made available to support the proposed wastewater treatment standard for 1,4-dioxane (60 FR 11727, footnote 13). Although the Agency believed that these data would be available for public inspection shortly after signature of the proposed rule, this was not the case. The data were available one day following the close of the comment period on the Phase III proposed rule. As a result, many comments were received that criticized the Agency for not providing appropriate pubic review of data that was used to develop a treatment standard.

In light of the delayed release of the effluent guidelines data, the Agency decided to accept comments on these data and the proposed 1,4-dioxane treatment standard for 30 additional days. In addition, the Agency provided notice of this extension to all commenters of the proposed rule. Several comments were received in response to this memo. Most of the commenters who had raised issue with the proposed standard commented on the EPA memo.

In response to the second concern raised by commenters, the Agency has received actual wastewater treatment data on 1,4-dioxane and as such has developed a UTS based on that data. As stated earlier, the Agency prefers to use actual constituency data from available treatment technology in lieu of transferred data from other constituents whenever feasible.

Finally, several commenters raised concerns regarding the analytical difficulties of reliably detecting and quantifying 1,4-dioxane in wastewater. CMA, in particular, stated that any UTS under 20 mg/l for 1,4-dioxane would be impractical. Other commenters noted extreme variability and difficulty in testing for the presence of 1,4-dioxane in wastewaters. While the analytical results provided by one of the commenters did show some irregularities, a comprehensive analytical protocol was not provided by the any of the comments which would be needed to fully assess their concerns regarding 1,4-dioxane. As such, the Agency believes that there should be no difficulty in analyzing for 1,4-dioxane in wastewater. Analysis can be accomplished by either direct injection into a GCFID (SW 846, Method 8015B) or a more sensitive analysis involving the injection of an azeotropic distillate preparation into a GCFID (SW–846, Method 5031).

3. Revision to the Acetonitrile Standard

EPA proposed to raise the UTS for the nonwastewater form of acetonitrile from 1.8 mg/kg to 38 mg/kg. Commenters generally supported this revision for the reasons given in the proposed rule. Therefore the Agency is promulgating this revised treatment standard in this rule for the reasons stated at 60 FR 11729.

Related to this, EPA also proposed revoking the special wastewater/nonwastewater definition for acrylonitrile wastes (K011/13/14), recognizing that these nonwastewaters could consist of over 90% water, and that wastewater treatment is an appropriate means of treating these wastes. Commenters agreed with this, and the Agency is finalizing this today.

B. Aggressive Biological Treatment as BDAT for Petroleum Refinery Wastes

EPA had solicited comment on whether to specify aggressive biological treatment (ABT) as the treatment standard for decharacterized petroleum refining wastewaters. The Agency is not establishing such a treatment standard in this final rule, but is instead promulgating a reduction in the frequency of monitoring required for those facilities using ABT to treat their wastes. The reasons for this are discussed below.

This issue was raised by the American Petroleum Institute (API), which had submitted data to the Agency on ten of its facilities that used aggressive biological treatment. Along with the data, API requested that EPA specify aggressive biological treatment as the treatment standard for their wastes. Such a standard, which would operate in lieu of UTS, would, in API's view, provide adequate treatment and could reduce their monitoring burden. In a similar vein, CMA commented that EPA should specify an optional treatment method (biological treatment) as an alternative to meeting UTS for underlying hazardous constituents reasonably expected to be present in characteristic wastes.

The Environmental Technology Council (ETC) opposed setting ABT as a new technology-specific treatment standard. They argued that biological treatment only partially destroys underlying hazardous constituents. They also felt that reducing the monitoring burden is inadequate justification for creating a new technology-specific standard.

As discussed in the preamble to the proposed rule (60 FR at 11719), biotreatment systems vary in performance both in general and as to specific constituents; the Agency is therefore reluctant to designate ABT as BDAT based on data from only ten facilities. The main reason given by both API and CMA for having a treatment method as the treatment standard was the elimination of the compliance monitoring burden. Although we agree with ETC that reducing monitoring burden is not an adequate justification for creating a new technology-specific treatment standard, EPA is certainly willing to consider more efficient means of ensuring compliance with LDR requirements.

Therefore, EPA is not designating ABT as BDAT, but is, however, requiring that decharacterized wastes affected by today's rule, which are managed in a wastewater treatment system involving ABT, must be monitored annually to ensure compliance with the treatment standards for underlying hazardous constituents. Other decharacterized wastes affected by today's rule must be monitored quarterly. EPA has been reviewing the paperwork burden posed by the LDR program; this was discussed in the supplemental notice to the LDR Phase IV proposed rule (61 FR 2338, January 25, 1996). As part of this paperwork burden reduction effort, the Agency is considering reducing the monitoring burden for all facilities complying with LDRs. The Agency considers reducing the monitoring burden for facilities treating wastewater with ABT to be a positive step towards this goal, and therefore believes it is justified. Reductions of this type for other types of treatment will be explored in future rulemakings.

C. Dilution Prohibition

Under the existing LDR dilution prohibition (40 CFR 268.3), burning inorganic metal-bearing hazardous wastes can be a form of impermissible dilution. On May 27, 1994, the Assistant Administrator for the Office of Solid Waste and Emergency Response issued

a Statement of Policy which clarified this point (59 FR 27546–27547). Today the Agency is codifying and quantifying these principles.

As discussed in the proposed rule, impermissible dilution may occur when wastes not amenable to treatment by a certain method (i.e., treated very ineffectively by that treatment method) are nevertheless 'treated' by that method (55 FR 22666, June 1, 1990; 52 FR at 25778–25779, July 8, 1987). Today's rule provides a general distinction between ''adequate treatment'' and potential violations of the dilution prohibition.

1. Inorganic Metal-Bearing Wastes

The Agency has evaluated the hazardous wastes and has determined that 43 of the RCRA listed wastes (as set forth in 40 CFR part 261) typically appear to be inorganic hazardous wastes that do not contain organics, or contain only insignificant amounts of organics, and are not regulated for organics. BDAT for these inorganic, metal-bearing listed wastes is metal recovery or stabilization. Thus, impermissible dilution may result when these wastes are combusted. When an inorganic metal-bearing hazardous waste with insignificant concentrations of organics is placed in a combustion unit, legitimate treatment for purposes of LDR ordinarily is not occurring. No treatment of the inorganic component occurs during combustion, and therefore, metals are not destroyed, removed, or immobilized. Since there are no significant concentrations of organic compounds in inorganic metal-bearing hazardous wastes, it cannot be maintained that the waste is being properly or effectively treated via combustion (i.e., thermally treated or otherwise destroyed, removed, or immobilized). For this reason, combustion of inorganic wastes is not a ''metho[d] of treatment * * * which substantially diminish[es] the toxicity of the waste or substantially reduce[s] the likelihood of migration of hazardous constituents from the waste * * *'' (RCRA § 3004(m)) and so is not a permissible method of treatment under that provision.

In terms of the dilution prohibition, if combustion is allowed as a method to achieve a treatment standard for these wastes, metals in these wastes will be dispersed to the ambient air and will be diluted by being mixed in with combustion ash from other waste streams. Adequate treatment (stabilization or metal recovery to meet LDR treatment standards) has not been performed and dilution has occurred. It is also inappropriate to regard eventual stabilizing of such combustion ash as providing adequate treatment for purposes of the LDRs. Simply meeting the numerical BDAT standards for the ash fails to account for metals in the original waste stream that were emitted to the air and for reductions achieved by dilution with other materials in the ash. (In most cases, of course, the metal-bearing wastes will have been mixed with other wastes before combustion, which mixing itself could be viewed as impermissible dilution).

These inorganic, metal-bearing hazardous wastes should be—and are usually—treated by metal recovery or stabilization technologies. These technologies remove hazardous constituents through recovery in products, or through immobilization, and are therefore permissible BDAT treatment methods.

There are eight characteristic metal wastes; however, only wastes that exhibit the TC as measured by both the TCLP and the EP for D004–D011 are presently prohibited (see 55 FR 22660–22662, June 1, 1990). EPA recently proposed prohibition and treatment standards for wastes identified as hazardous solely because they exhibit the TC (60 FR at 43682, August, 22, 1995). Characteristic wastes, of course, cannot be generically characterized as easily as listed wastes because they can be generated from many different types of processes. For example, although some characteristic metal wastes do not contain organics or cyanide or contain only insignificant amounts, others may have organics or cyanide present which justify combustion, such as a used oil exhibiting the TC characteristic for a metal. Thus, it is difficult to say which D004–D011 wastes would be impermissibly diluted when combusted, beyond stating that as a general matter, impermissible dilution would occur if the D004–D011 waste does not have significant organic or cyanide content but is nevertheless combusted.

An ''inorganic metal-bearing waste'' is one for which EPA has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content. The table being promulgated in 40 CFR part 268, Appendix XI is the list of waste codes for which EPA regulates only metals that are affected by this rule.

2. Inorganic Metal-Bearing Wastes Not Prohibited Under the LDR Dilution Prohibition

Combustion of the following inorganic metal-bearing wastes is not prohibited under the LDR dilution prohibition: (1) wastes that, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, contain hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard for UTS; (2) organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste; (3) wastes that, at point of generation, have reasonable heating value such as greater than or equal to 5000 Btu/lb (see 48 FR 11157, March 16, 1983); (4) wastes co-generated with wastes that specify combustion as a required method of treatment; (5) wastes, including soil, subject to Federal and/or State requirements necessitating reduction of organics (including biological agents); and (6) wastes with greater than 1% Total Organic Carbon (TOC).

Several commenters want EPA to add additional criteria. One commenter recommended adding a seventh criterion, i.e., combustion that results in a significant reduction in volume. Several commenters recommended adding a seventh criterion to allow combustion of lab packs. The Agency is not persuaded that a seventh criterion is necessary. It has determined that volume reduction is not a sufficient reason to allow the combustion of inorganic metal-bearing wastes because metals are neither destroyed nor immobilized, and it is possible that a significant amount of metal is being transferred to another media. As for lab packs, in the Phase II final rule (59 FR 47982, September 19, 1994), the Agency specifically addressed lab pack issues when it revised 268 Appendix IV to specify those wastes that are prohibited from inclusion in lab packs destined for combustion. Today's dilution prohibition does not supersede the streamlined treatment standards promulgated in the Phase II final rule. Therefore, metal-bearing inorganic wastes may be included in a lab pack unless it is prohibited under the list of wastes in 268 Appendix IV.

3. Cyanide-Bearing Wastes

A commenter questioned why EPA allows the presence of cyanide to justify combustion when there are adequate alternative treatment methods for that waste constituent. This approach was adopted because cyanide is destroyed—i.e., effectively treated and not diluted—by combustion. Existing LDR rules, in many cases, identify combustion as an appropriate BDAT for destruction of cyanide-bearing wastes. See, e.g., treatment standards for F009, F010, and F011. The LDR Phase III proposal solicited comments on whether the

cyanide criterion should be dropped. Several commenters strongly supported the continued use of combustion as a treatment method for cyanide-bearing wastes, stating that combustion is the most efficient and effective method for treating cyanide wastes. One commenter, ETC, supported dropping the cyanide criterion because of the existence of alternative non-combustion technologies to treat inorganic cyanide-bearing wastes without dispersing metals. The Agency disagrees; combustion, when properly conducted, can effectively destroy all the cyanide in a waste. In the Agency's view, this indicates that cyanide wastes which are treated by combustion are not being diluted impermissibly. This issue of whether metals are being dispersed would be addressed through substantive controls on the combustion unit.

4. Table of Inorganic Metal Bearing Wastes

The table being promulgated in 40 CFR part 268, Appendix XI today indicates the list of waste codes for which EPA regulates only metals and/or cyanides that would be affected by this proposed rule. Except for P122, this list is identical to the list originally published in the aforementioned Policy Statement on this subject. The Agency is removing P122 (Zinc Phosphide greater than 10%) from the list of restricted inorganic metal-bearing wastes, because the Agency has previously promulgated a treatment standard of INCIN for the nonwastewater forms of this waste. See 40 CFR 268.40. The policy memo was in error on this point. EPA wishes to clarify that this dilution prohibition is limited to the 51 waste codes in this table. In addition, if an Appendix IX waste meets any of the six criteria discussed above, it would be permissible to combust the waste despite the fact that it is an Appendix IX waste.

D. Expansion of Treatment Options That Will Meet the LDR Treatment Standard ''CMBST''

EPA is modifying the treatment standard expressed as INCIN, which specifies hazardous waste incineration, to CMBST, which allows combustion in incinerators, boilers and industrial furnaces. EPA also solicited comment on whether the Catalytic Extraction Process, for which Molten Metal Technology received a determination of equivalent treatment under § 268.42(b), should also be allowed for all wastes which have a treatment standard of CMBST, and whether there are other technologies which are equivalent to CMBST. Commenters supported the inclusion of the Catalytic Extraction Process (CEP), and since the Agency has determined that (properly operated) it performs in a manner equivalent to other combustion technologies, is adding it to the CMBST standard. Molten Metal Technology commented that the CEP is not in fact a combustion technology, and the Agency has attempted to reflect this in the definition. One commenter, Exide Corporation, requested that their plasma arc process for the recovery of lead also be added to the definition of CMBST. The Exide plasma arc process is in fact an industrial furnace under § 260.10, and is therefore already considered part of the definition of CMBST.

EPA also notes that the new CMBST standard requires that wastes be thermally treated in units that either are subject to subtitle C standards, or, in cases where non-hazardous but prohibited wastes are being thermally treated, in accordance with applicable technical operating requirements. This situation could arise, for example, if a decharacterized waste were then being thermally treated. Such a waste need not be managed in a hazardous waste combustion unit. The regulatory language makes clear that non-hazardous waste combustion units can be utilized. In fact, the predecessor to the CMBST standard—INCIN—allowed nonhazardous incinerators to be an eligible type of unit because the INCIN standard allowed burning in units subject to applicable emissions standards, which standards did not necessarily have to include subtitle C standards (59 FR 48002, Sept. 19, 1994, and 60 FR 242, June 3, 1995). This language was omitted inadvertently from the CMBST standard, and is being restored in today's rule.

E. Clean Up of 40 CFR Part 268

EPA is finalizing changes to the LDR program to achieve the goal of simplified regulations.

1. Section 268.8

Because treatment standards for all scheduled wastes were promulgated in the Third Third rule in 1990, the § 268.8 ''soft hammer'' requirements are no longer necessary. Therefore, § 268.8 is removed from part 268.

2. Sections 268.10–268.12

The purpose of Subpart B of 268 was to set out a schedule for hazardous wastes by the date when treatment standards were to be established. Deadlines in all three of these sections were met on time, and the wastes are subject to treatment standards. Therefore, these three sections are no longer necessary, and are removed.

3. Section 268.2(f)

With the promulgation of UTS in the LDR Phase II final rule (59 FR 47982, September 19, 1994), distinctions in the definitions of wastewaters are unnecessary. The Agency is therefore removing paragraphs (1)–(3) from § 268.2(f).

4. Corrections to Proposed Rule Language

A number of commenters pointed out properly that EPA had proposed an amendment to § 268.9 of the rules which would have the effect of subjecting all listed wastes which also exhibit a characteristic of hazardous waste to evaluate whether the waste contains underlying hazardous constituents not covered by the treatment standard for the listed waste, and if so, to treat for them. See 60 FR at 11741. EPA agrees with the commenters that this provision is unnecessary and is not adopting it. (In fact, the Agency did not intend any far-reaching change in proposing the revised language.) The provision is unnecessary because EPA already evaluated which hazardous constituents are present in listed wastes at the time of developing the treatment standards (any of the Background Documents supporting the treatment standards indicates the sampling done, and that the sampling encompassed the whole range of hazardous constituents potentially present). There is no need to duplicate this effort. Consequently, the Agency is not amending § 268.9(b).

Other commenters pointed out that the proposed changes to the de minimis exemption in § 268.1(e)(4)(i) (see 60 FR 11740) inadvertently omitted the language which states that de minimis losses are not prohibited. That language has been put back into the final rule language.

VII. Capacity Determinations

A. Introduction

This section summarizes the results of the capacity analysis for the wastes covered by this rule. For background information on data sources, methodology, and a summary of each analysis, see the Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners, found in the docket for today's rule. For EPA's responses to capacity-related comments, see the Response to Capacity-Related Comments Received on the Phase III

Land Disposal Restrictions Rulemaking, also found in the docket for today's rule.

In general, EPA's capacity analysis methodologies focus on the amount of waste to be restricted from land disposal that is currently managed in land-based units and that will require alternative treatment as a result of the LDRs. The quantity of wastes that are not managed in land-based units (e.g., wastewaters managed only in RCRA exempt tanks, with direct discharge to a POTW) is not included in the quantities requiring alternative treatment as a result of the LDRs. Also, wastes that do not require alternative treatment (e.g., those that are currently treated using an appropriate treatment technology) are not included in these quantity estimates.

EPA's decisions on whether to grant a national capacity variance are based on the availability of alternative treatment or recovery technologies. Consequently, the methodology focuses on deriving estimates of the quantities of waste that will require either commercial treatment or the construction of new on-site treatment systems as a result of the LDRs—quantities of waste that will be treated adequately either on site in existing systems or off site by facilities owned by the same company as the generator (i.e., captive facilities) are omitted from the required capacity estimates.

B. Capacity Analysis Results Summary

For the decharacterized ICR and TC wastes managed in CWA, CWA-equivalent, and Class I injection well systems, EPA estimates that between 85 and 500 million tons per year (estimated at end-of-pipe) will be affected as a result of today's rule. EPA believes that many affected facilities need time to build treatment capacity for these wastes, as wastewater volumes generally make off-site treatment impractical. Thus, EPA has determined that sufficient alternative treatment capacity is not available, and today is granting a two-year national capacity variance for decharacterized wastewaters.

Commenters to the rule generally supported EPA's decision to grant a national capacity variance for decharacterized wastes managed in CWA, CWA-equivalent, and Class I injection well systems. Numerous other comments were received on issues such as those associated with the definition of point of generation for ICR and TC wastewaters and the applicability of today's rule to wastewater management units other than surface impoundments, such as stormwater impoundments, sumps, sewers, and trenches. The Response to Capacity-Related Comments Received on the Phase III Land Disposal Restrictions Rulemaking background document provides a detailed discussion of the capacity-related comments on decharacterized wastewaters and EPA's response to them.

To assess the quantity of D003 wastes that could be affected by the rule other than those wastes managed in CWA and CWA-equivalent systems, EPA extracted information from the 1993 Biennial Reporting System (BRS) on the generation and management of D003 wastes. According to the BRS, approximately 2.2 million tons of D003 wastewaters are currently deepwell injected, 650 tons of D003 nonwastewaters are managed through land application, and 17,600 tons of D003 nonwastewaters are managed in ''other'' disposal units (not specified in the BRS). These wastes may require additional treatment in order to meet the LDRs. In addition, some D003 waste that may be affected by the rule may not be reported in the BRS, because these wastes may not be considered hazardous by the generator once they have been decharacterized. Although EPA believes that in general there is adequate treatment capacity for these wastes, such capacity may not be immediately available. Therefore, EPA is granting a 90-day capacity variance for D003 wastes that are impacted by the rule and are not managed in CWA and CWA-equivalent systems in order to allow facilities time to determine whether their wastes are affected by this rule, and identify and locate alternative treatment capacity if necessary.

EPA estimates that approximately 105,000—130,000 tons of newly listed wastes included in today's rule will require alternative treatment. In particular, approximately 4,500 tons of carbamate wastes (K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, U409–U411) will require alternative treatment. In addition, 100,000—125,000 tons (not including contaminated media) of spent aluminum potliners (K088) will require alternative treatment capacity.

EPA received a number of comments on its capacity analysis for K088 wastes. Most commenters disagreed with EPA's proposal not to grant a capacity variance for K088 wastes. Specifically, these commenters believe that EPA overestimated the quantity of available capacity and underestimated the quantity of required capacity. In performing the capacity analysis for the final rule, EPA considered all of the issues raised by the commenters and reexamined its estimates of both available and required capacity. EPA found that adequate treatment capacity does exist for K088 wastes, although the amount of treatment capacity appears to be just adequate to accommodate demand. However, some of the facilities capable of treating these wastes may require pretreatment such as grinding or crushing prior to accepting the waste. In order to allow facilities generating K088 adequate time to work out logistics such as transportation, pretreatment capacity, and contracting for treatment capacity, EPA has decided to grant a nine-month national capacity variance for these wastes—the time at which EPA estimates existing treatment capacity will be available as a practical matter. A detailed discussion of the final capacity analysis is provided in the Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners and EPA's responses to the individual comments on the K088 capacity analysis are provided in the Response to Capacity-Related Comments Received on the Phase III Land Disposal Restrictions Rulemaking, both of which are in the docket for today's rule.

EPA has determined that there is adequate alternative treatment capacity available for the 4,500 tons of carbamate wastes generated each year and is therefore not granting a national capacity variance for these wastes.

The quantities of radioactive wastes mixed with wastes included in today's rule are generated primarily by the U.S. Department of Energy (DOE). EPA estimates that 820 tons of high-level waste and 360 tons of mixed low-level waste that may be affected by this proposal will be generated annually by DOE. In addition, there are currently 7,000 tons of high-level waste, 10 tons of mixed transuranic waste, and 2,700 tons of mixed low-level waste in storage that may be affected by this rule. DOE currently faces treatment capacity shortfalls for high-level wastes and mixed transuranic wastes. Although DOE does have some available treatment capacity for mixed low-level wastes, most of this capacity is limited to treatment of wastewaters with less than one percent total suspended solids and is not readily adaptable for other waste forms. DOE has indicated that it will generally give treatment priority to mixed wastes that are already restricted under previous LDR rules. Therefore, EPA is granting a two-year national capacity variance to radioactive wastes mixed with the hazardous wastes affected by today's rule. Commenters to the proposed rule supported EPA's

decision to grant a national capacity variance for these wastes.

Table 1 lists each RCRA hazardous waste code for which EPA is today promulgating LDR standards. For each code, this table indicates whether EPA is granting a national capacity variance for land-disposed wastes. Also, EPA is granting a three-month national capacity variance for all wastes in this rule to handle logistical problems associated with complying with the new standards.

TABLE 1.—VARIANCES FOR NEWLY LISTED AND IDENTIFIED WASTES

Waste description[1]	Surface-disposed wastes	Deepwell-injected wastes
Ignitable and corrosive wastes managed in CWA or CWA-equivalent systems, or SDWA (D001 and D002)	2 Years	2 Years.
Reactive wastes managed in CWA or CWA-equivalent systems, or SDWA (D003)	2 Years	2 Years.
Reactive wastes not managed in CWA or CWA-equivalent systems, or SDWA (D003)	3 Months	3 Months.
Newly identified pesticide wastes managed in CWA or CWA-equivalent systems, or SDWA (D012–D017)	2 Years	2 Years.
Newly identified TC organic wastewaters managed in CWA or CWA-equivalent systems, or SDWA (D018–D043)	2 Years	2 Years.
Spent aluminum potliners (K088)	9 Months	3 Months.
Carbamate production wastes (K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, U409–U411) mixed radioactive wastes[2].	3 Months	3 Months.

[1] Includes soil and debris contaminated with each waste.

[2] The variance determinations listed apply only to radioactive wastes mixed with decharacterized D001–D003 or newly identified D012–D017 wastes managed in CWA and CWA-equivalent systems; to radioactive wastes mixed with newly identified TC organic wastewaters; and to radioactive wastes mixed with spent aluminum potliners, or carbamate production wastes.

VIII. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR Part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Today's rule is being promulgated pursuant to sections 3004(d) through (k), and 3004(m), of RCRA (42 U.S.C. 6924(d) through (k), and 6924(m)). Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate that this rule is a self-implementing provision of HSWA.

B. Abbreviated Authorization Procedures for Specified Portions of Today's Rule

On August 22, 1995, EPA proposed in the Phase IV LDR notice an abbreviated authorization procedure that would also be used for certain parts of the Phase III LDR rule that are minor in nature (EPA also proposed to use this procedure for the Universal Treatment Standards (UTS) in the Phase II rule). This procedure is designed to expedite the authorization process by reducing the scope of a State's submittal, for authorization to a State certification and copies of applicable regulations and statutes. EPA would then conduct a short review of the State's request, primarily consisting of a completeness check (see 60 FR 43686 for a full description of the proposed procedures). The parts of the Phase III rule to which the streamlined authorization procedures would be applicable are: (1) treatment standards for newly listed wastes, (2) improvements to the existing land disposal restrictions program, and (3) revisions and corrections to the treatment standards in §§ 268.40 and 268.48. (Further discussion of this issue also is found in the supplemental proposal to the LDR Phase IV rule (61 FR 2358, 2365, January 25, 1996)).

Although EPA is firmly committed to streamlining the RCRA State authorization procedures, the Agency has decided not to finalize the proposed Category 1 authorization procedures for parts of the Phase III rule today's notice. EPA believes that public comments from both the August 22 proposal and comments submitted for the recent HWIR-contaminated media proposal should be considered before finalizing new procedures for authorization. This full consideration will enable EPA to make the best decision regarding how the authorization process should work. EPA intends to finalize both the Category 1 and Category 2 procedures at the same time.

C. Effect on State Authorization

Because today's Phase III LDR rule is being promulgated under HSWA authority, those sections of today's rule that expand the coverage of the LDR program (e.g., to newly identified wastes) would be implemented by EPA on the effective date of today's rule in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA.

However, some of today's regulatory amendments are neither more or less stringent than the existing Federal requirements. EPA clarified in a December 19, 1994, memorandum (which is in the docket for today's rule) that EPA would not implement the Universal Treatment Standards (promulgated under HSWA authority in the Phase II LDR rule) separately for those States for which the State has received LDR authorization. EPA views any changes from the existing limits to

be neither more or less stringent since the technology basis of the standards has not changed. Accordingly, EPA will not implement the amendments to the UTS in today's LDR Phase III rule for those states with LDR authorization.

Because today's rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire January 1, 2003. (See § 271.24 and 57 FR 60132, December 18, 1992.)

Section 271.21(e)(2) requires that States with final authorization must modify their programs to reflect Federal program changes and to subsequently submit the modification to EPA for approval. The deadline by which the State would have to modify its program to adopt these regulations is specified in § 271.21(e). This deadline can be extended in certain cases (see § 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, states with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In most cases, EPA expects that it will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations are not required to include standards equivalent to these regulations in their application. However, the State must modify its program by the deadline set forth in § 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

IX. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ''significant.'' The Order defines a ''significant'' regulatory action as one that ''is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The Agency estimated the costs of today's rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considers compliance cost and economic impacts for both characteristic wastes and newly listed wastes affected by this rule. For characteristic wastes, the potential cost impacts of this rule depend on whether facilities' current wastewater treatment systems will meet the UTS levels or if additional treatment will be required. If current treatments are adequate, facilities will only incur administrative costs to have their permits revised as well as on-going monitoring costs. In general, the Agency expects that facilities will seek permit modifications, treatability variances, or certification of adequate POTW treatment because these compliance options can be implemented at much lower cost than the option requiring treatment to UTS levels. EPA estimates the total annualized costs of the rule for these wastes would range from approximately $197,000 to $598,000, of which $154,000 to $425,000 would be incurred at the 28 to 73 potentially affected facilities in the organic chemical industry, and approximately $43,000 to $173,000 would be incurred at the 8 to 30 potentially affected facilities in the petroleum refining industry. However, at the high end, if current wastewater treatment systems need to be augmented with additional treatment steps, the incremental compliance costs for today's rule could be as high as $1 million per affected facility. The Agency does not have adequate data to estimate how many, if any, facilities may require modification to their treatment facilities. The Agency did conduct a sensitivity analysis, considering the costs of the rule under two scenarios: (1) Assuming that 80 percent of the facilities comply with the rule by obtaining permit modifications and 20 percent comply by treating their wastes, and, (2) assuming that 60 percent comply by obtaining permit modifications and 40 percent comply by treating their wastes. Based on the first scenario, the estimated annualized costs of the rule would range from $6.6 million to $18.2 million. Based on the second scenario, the estimated annualized costs would range from $12.9 million to $35.7 million. For newly listed wastes, the costs are substantially higher and will be incurred each year. These costs range from approximately $11.9 million to $47.3 million and are attributable to thermal treatment of aluminum potliner wastes (K088). Therefore, today's rule may be considered an economically significant rule. Because today's rule is significant, the Agency analyzed the costs, economic impacts, and benefits.

This section of the preamble for today's rule provides a discussion of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's rule, followed by a presentation of the cost, economic impact and benefit results. More detailed discussions of the methodology and results may be found in the background document, ''Regulatory Impact Analysis of the Land Disposal Restrictions Final Rule for the LDR Phase III Newly Listed and Identified Wastes,'' which has been placed in the docket for today's rule.

1. Methodology Section

In today's rule, the Agency is establishing treatment standards for the following wastes: end-of-pipe standards for ignitable, corrosive, and reactive (ICR) wastewaters managed in CWA, CWA-equivalent systems, and UIC wells; Toxicity Characteristic pesticide (D012–17) and organic (D018–43) wastewaters managed in CWA, CWA-equivalent systems, and UIC wells; and newly listed wastes from two industries—spent aluminum potliners and carbamates.

a. Methodology for Estimating the Affected Universe. In determining the costs, economic impacts, and benefits associated with today's rule, the Agency

estimated the volumes of waste affected by today's rule. The procedure for estimating the volumes of ICR waste and TC organic and pesticide waste, and newly listed wastes affected by today's rule is summarized below.

First, the Agency examined all industries which might be likely to produce wastes covered under today's standards. Through reviewing comments to the Supplemental Notice of Data Availability published by the Agency in 1993, reviewing runs from the Biennial Reporting System (BRS) of volumes generated from particular industry sectors, as well as discussions with industry, and discussions with the Office of Water at EPA HQ, the Agency narrowed it down to 16 industries which would potentially have significant volumes of wastewater affected by today's rule.

Using a host of databases and/or sources, the Agency collected data on the quantities, constituents, and concentrations of the volumes affected from each of the 16 industries. In addition, the Agency gathered any data on current management practices, plant design, etc. The following sources were used: Toxic Release Inventory (TRI), Section 308 data from the Office of Water, Industrial Studies Database (ISDB), 1991 Biennial Reporting System (BRS), primary summary and development documents data from effluent guidelines, TCRIA documents, data gathered in the capacity analysis performed for today's rule, as well as comments from potentially affected industries.

The Agency obtained volume information for the newly listed wastes—spent aluminum potliners (K088) and carbamate wastes (K156–161)—from the listing documents prepared for these wastes during the listing procedure.

b. Cost Methodology. The cost analysis estimates the national level incremental costs which will be incurred as a result of today's rule. The cost estimates for both the baseline and post-regulatory scenarios are calculated employing: (i) the facility wastestream volume, (ii) the management practice (baseline or post-regulatory) assigned to that wastestream, and (iii) the unit cost associated with that practice. Summing the costs for all facilities produces the total costs for the given waste and scenario. Subtracting the baseline cost from the post-regulatory cost produces the national incremental cost associated with today's rule for the given waste.

The cost methodology section includes three sub-sections: (i) ICR and TC Pesticide and Organic Wastes Managed in CWA and CWA-Equivalent Systems, (ii) Newly Listed Wastes, (iii) Testing and Recordkeeping Costs.

i. ICR and TC Pesticide and Organic Wastes Managed in CWA and CWA-Equivalent Systems. The Agency employed the following approach to estimate the incremental costs for the ICR and TC wastes. First, using information available on the affected industries, the Agency created average-sized model facilities for each industry. Second, for a given model facility in an affected industry, the Agency used available unit cost data to develop costs for the baseline management practices (usually treatment in surface impoundments followed by discharge into receiving waters through a NPDES permit). Third, the Agency used data on the constituents and waste quantities for each industry, where applicable, to determine the necessary treatment required to reduce to UTS levels the constituents present. Fourth, the Agency used unit costs to develop costs for the post-regulatory management practices for the treatment requirements determined in the third step. Fifth, subtracting the baseline from the post-regulatory costs for an average facility in an industry sector and using the data available on the number of facilities affected within each industry, the Agency was able calculate the incremental cost for a given industry. Sixth, summing costs across affected industries, the Agency determined the incremental cost for the rule for the end-of-pipe treatment standards.

ii. Newly Listed Wastes. The costs for treatment of spent aluminum potliners (K088) and carbamate wastes (K156–161) will be determined using data from the listings on baseline management practices, judgment on the technology(s) required to meet the UTS standards for these wastes, and available unit cost data.

iii. Testing and Recordkeeping Costs. Testing and recordkeeping costs, including costs that facilities will incur for ensuring that hazardous constituents in characteristic waste are meeting new treatment standards and costs associated with permit modifications will be based upon an average, one-time testing cost, on-going monitoring costs, and an Information Collection Request, respectively.

c. Economic Impact Methodology. The economic effects of today's rule are defined as the difference between the industrial activity under post-regulatory conditions and the industrial activity in the absence of regulation (i.e., baseline conditions).

The Agency used (1) historic average capital expenditures for each industry, (2) historic average operating expenditures for each industry, (3) historic revenues, and (4) historic average pollution abatement and control expenditures (PACE) to determine the economic impacts. However, the Agency was unable to examine the impacts on a facility-specific basis due to lack of data. Therefore, the impacts are assessed on an industry-specific basis.

d. Benefits Methodology. The approach for estimating benefits associated with today's rule involves three components: (i) estimation of pollutant loadings reductions, (ii) estimation of reductions in exceedances of health-based levels, and, (iii) qualitative description of the potential benefits. The benefits assessment is based upon the waste quantity and concentration data collected for the cost analysis. This incremental assessment focuses upon reductions in toxic concentrations at the point of discharge and does not consider any potential benefits resulting from reductions in air emissions or impacts on impoundment leaks and sludges which may occur as part of treating wastes to comply with the LDRs. It is expected that additional treatment to comply with the LDRs may result in risk reductions from air emissions, leaks, and sludges.

EPA has conducted an assessment of the benefits related to the effects of the rule on newly listed spent aluminum potliners. These benefits depend on the incremental risk reductions that may result from treatment of the wastes. In conducting the risk assessment for spent aluminum potliners, EPA improved upon the fate and transport modeling approach used in the RIA. Specifically, in the RIA, EPA applied generic dilution/attenuation factors (DAFs) (which did not reflect constituent-specific fate and transport processes, site-specific hydrogeological conditions, or waste characterization data) to relate the concentration of contaminants in the leachate to their concentration in a down-gradient well. Instead, EPA used its Composite Model for Leachate Migration and Transformation Products (EPACMTP) to perform constituent-specific fate and transport modeling. A summary of the analysis can be found in the Addendum to the RIA placed in the docket for this rule. EPA data indicate that approximately 120,000 metric tons of spent aluminum potliners are generated annually. EPA has not conducted an assessment of the benefits related to the effects of the rule on newly listed carbamate wastes. Because the Agency expects facilities to comply with LDRs through permit modifications, and because the quantity of waste is very small, benefits for

newly listed carbamate wastes are expected to be minimal.

i. Estimation of Pollutant Loadings Reductions. An incremental approach was used to estimate reductions in pollutant loadings. For the baseline scenario, contaminant concentrations were based upon data or estimates of current effluent discharge concentration levels. For the post-regulatory scenario, concentration levels were assumed to equal UTS levels.

ii. Estimation of Reductions in Exceedances of Health-Based Levels. The methods used for evaluating the benefits associated with cancer and noncancer risk reductions resulting from the rule entail comparing constituent concentration levels to health-based standards to evaluate whether implementation of the rule reduces concentration levels below levels that pose risk to human health.

To estimate benefits from cancer risk reductions resulting from the rule, a simple screening analysis was performed. This analysis compared contaminant concentrations for the baseline and post-regulatory scenario to health-based levels for carcinogens. Further analysis may be undertaken to quantify benefits associated with facility/ wastestream combinations identified in the contaminant concentration comparisons.

Benefits associated with reductions in non-cancer exceedances are estimated based upon comparisons of contaminant concentration levels in effluent discharges of the affected wastestreams to the reference health levels. These benefits are expressed in terms of the number of exceedances of health-based levels under the baseline scenario compared to the number of exceedances under the rule.

iii. Qualitative Description of the Potential Benefits. A qualitative assessment of potential benefits likely to result from the rule is used where data are limited. The Agency acknowledges limited data availability in developing waste volumes affected, constituents, concentrations, cost estimates, economic impacts, and benefits estimates for the LDR Phase III rulemaking. The Agency continues to request comment from industry regarding constituents, concentrations, waste volumes, and current management practices.

2. Results

a. Volume Results. The Agency has estimated the volumes of formerly characteristic wastes potentially affected by today's rule to total in the range of 33.5 to 500 million metric tons. The Agency requests comment on waste volumes affected by the LDR Phase III rule. For newly listed wastes, the analyses supporting the listing determination showed about 4,500 metric tons of carbamate wastes and 118,000 metric tons of spent aluminum potliners are potentially affected by this rule.

b. Cost Results. For characteristic wastes, the potential cost impacts of this rule depend on whether facilities' current wastewater treatment systems will meet the UTS levels or if additional treatment will be required. If current treatments are adequate, facilities will only incur administrative costs to have their permits revised. EPA estimates the total annualized costs of the rule for these wastes would range from approximately $197,000 to $598,000, of which $154,000 to $425,000 would be incurred at the 28 to 73 potentially affected facilities in the organic chemical industry, and approximately $43,000 to $173,000 would be incurred at the 8 to 30 potentially affected facilities in the petroleum refining industry. However, at the high end, if current wastewater treatment systems need to be augmented with additional treatment steps, the incremental compliance costs could be as high as $1 million per affected facility. The Agency does not have adequate data to estimate how many, if any, facilities may require modification to their treatment facilities. The Agency continues to request comment and data on how often additional treatment may be required.

For newly listed wastes, the costs are substantially higher and will be incurred each year. These costs range from approximately $11.9 million to $47.3 million and are attributable to thermal treatment of aluminum potliner wastes (K088). The Agency requests comment on where industry falls within this range.

c. Economic Impact Results. The Agency has estimated the economic impacts of today's rule to represent less than one percent of historic pollution control and operating costs for the organic chemical and petroleum refining industries. However, for those facilities that may need to treat to UTS to comply with today's rule, costs could be more significant. The estimated compliance costs for treating newly listed spent aluminum potliners represents 40 percent of pollution control operating costs for aluminum reducers; however, treatment costs represent only one percent of total historic operating costs.

d. Benefit Estimate Results. The Agency expects facilities to comply with the LDRs through permit modifications. As a result, the Agency has estimated the benefits associated with today's rule to be small. Assuming facilities comply with the rule by treating their affected wastestreams, loadings reductions estimates range between 1,527 to 21,322 metric tons per year at 129 to 291 facilities (direct and indirect dischargers) involving 175 to 647 constituent/wastestream combinations. Ninety-eight percent of the reductions occur at organic chemicals facilities, with the remainder occurring at petroleum refiners. Estimated loadings reductions for direct dischargers range between 36 and 267 tons per year, representing between 0.03 and 0.2 percent of total Toxic Release Inventory (TRI) chemical loadings to surface waters. For indirect dischargers, estimated loadings reductions range between 1,491 and 21,055 metric tons per year, representing between 0.8 and 11.0 percent of total TRI chemical loadings transferred to POTWs. Based upon the results of the screening and more detailed risk assessments, the estimated baseline risks associated with nine to twenty wastestreams (out of the 155 to 404 constituent/wastestream combinations potentially affected by the rule) exceed 10^{-6} under baseline conditions and three to six wastestreams with noncancer risk levels exceeding reference doses. These 12 to 26 wastestreams contain one of five constituents: aniline (9 to 19 wastestreams), acrylamide (0 to 1 wastestream), pyridine (2 waststreams), barium compounds (1 wastestream), and acetonitrile (0 to 2 wastestreams). For these 12 to 26 wastestreams, EPA conducted a more detailed risk assessment, using site-specific data. Results of the more detailed risk assessment indicate that the benefits from the rule are small. EPA identified four wastestreams potentially posing cancer risk exceeding the threshold risk levels. Three wastestreams pose baseline cancer risk ranging from 1×10^{-5} to 1×10^{-4} (due to exposure to aniline) which potentially would be reduced to between 8×10^{-8} and 3×10^{-6} under the LDR Phase III rule. A fourth wastestream containing acrylamide poses baseline cancer risk at a level of 2×10^{-3}. The rule is estimated to reduce this risk to between 2×10^{-4} and 4×10^{-36}. All four of these wastestreams are discharged to POTWs; if POTW treatment removes these constituents from the wastewater prior to discharge to surface water and/or if no drinking water intake is located downstream from the POTW's outfall, baseline risks will be lower. The Agency expects facilities to comply with the LDRs through permit modifications;

however, additional treatment may result in potentially significant risk reduction.

EPA performed constituent-specific fate and transport modeling using its EPACMTP to further assess cancer and noncancer risks of spent aluminum potliners. Using these additional data, EPA assessment of baseline risks indicates that individual lifetime cancer risks increase to about 10^{-6} under central tendency assumptions and 10^{-3} under high-end assumptions. In addition, the new estimates suggest that under high-end assumptions, baseline concentrations in drinking water may be high enough to present noncancer risks; previously, noncancer risks were estimated to be negligible. Consequently, the benefits of regulating spent aluminum potliners are higher than previously estimated. Under central tendency assumptions, individual lifetime cancer risks resulting from current waste management practices are slightly higher than post-regulatory risks (10^{-6} versus less than 10^{-6}); some incremental benefits may therefore be realized as a result of the LDRs. Under high-end assumptions, however, the regulation could reduce cancer risks by one or two order of magnitude, while noncancer risks could be eliminated. Although population risks would also be reduced correspondingly, EPA is unable to specify the magnitude of the exposed population.

B. Regulatory Impact Analysis for Underground Injected Wastes

The Agency has completed a separate regulatory impact analysis for underground injected wastes affected by the LDR Phase III final rule. This analysis describes the regulatory impacts only to the Class I injection well universe. The new Phase III LDRs cover decharacterized ICR and TC organic wastes, and other newly-identified hazardous wastes that are distinctly industrial wastes injected by owners and operators of only Class I hazardous and non-hazardous injection wells.

According to the available data outlined in the RIA, our best estimate indicates that of the 223 Class I injection facilities in the nation, up to 154 facilities will be affected by the new Phase III LDRs. Of these facilities, 100 inject nonhazardous waste and 54 inject hazardous waste. Combined, these facilities inject approximately 18 billion gallons of waste annually into Class I wells. These Class I injection wells will now be required to either treat wastes onsite, segregate and ship affected wastes offsite for treatment and disposal, or file no migration petitions as outlined in the UIC regulations in 40 CFR Part 148 (See 53 FR 28118, July 26, 1988, preamble for a mote thorough discussion of the no migration petition review process). Additional options for compliance with the final Phase III LDRs, including a *de minimis* exemption and a pollution prevention option discussed in detail elsewhere in this rule and in the final UIC RIA.

Of the newly affected Class I facilities, 38 already have no migration exemptions approved by EPA, but they may be required to submit a petition modification to EPA due to the Phase III rule unless their original petition already addressed affected Phase III wastes, including underlying hazardous constituents in decharacterized wastes. In the cases where the petition already covers all hazardous wastes and underlying hazardous constituents in the injected waste stream (i.e., the injectate that was evaluated during the no migration petition process has not changed), no further Agency review of these petitions is necessary. For the facilities which do not have approved no migration exemptions, the rule will add compliance costs to those incurred as a result of previous rulemakings. The Agency analyzed costs and benefits for the final Phase III rule using the same approach and methodology developed in the Regulatory Impact Analysis of the Underground Injection Control Program: Proposed Hazardous Waste Disposal Injection Restriction (53 FR 28118) and subsequent LDR rulemaking. An analysis was performed to assess the economic effect of associated compliance costs for the additional volumes of injected wastes attributable to this rule.

In general, Class I injection facilities affected by the LDR Phase III rule have several options. As previously outlined, some facilities will modify existing no migration petitions already approved by the Agency, others may submit entirely new petitions, and still others may accept the prohibitions and either continue to inject treated wastes or cease injection operations altogether. And some facilities with approved petitions already addressing Phase III wastes will have no or little additional compliance costs. EPA assessed compliance costs for Class I facilities submitting no migration petitions, employing alternative treatment, and/or implementing pollution prevention measures. Although facilities using pollution prevention/waste minimization to comply with the Phase III LDRs will likely lower overall regulatory compliance costs, these situations are site-specific and, therefore, EPA cannot estimate these costs savings at this time.

For Class I facilities opting to use alternative treatment, the Agency derived costs for both treating wastes on-site, and/or shipping wastes and treating them off-site at a commercial facility. However, EPA believes that the segregation and transportation of large volumes of liquid wastes off-site is not very practical or cost-effective. This makes the off-site treatment scenario, at best, a highly conservative analysis and in actuality, a least likely and therefore discountable scenario. EPA expects that all injection facilities will opt for the most cost-effective approach in complying with the Phase III final rule and they will either submit a no migration petition or treat their wastes on-site. EPA also assumes that non-commercial facilities will segregate wastes for treatment on-site, whereas commercial facilities will find it more cost effective to not segregate LDR Phase III wastes. For the final rule, EPA estimates that the total annual compliance cost for petitions and alternative on-site treatment to industry affected by the new LDR Phase III prohibitions will range between $32.91 million to $34.08 million per year. The average annual compliance costs per affected facility employing on-site alternative treatment were $217,500. The range of costs for alternative treatment is the result of applying a sensitivity analysis. Only the incremental treatment costs for the new waste listings are calculated in this RIA. All of these costs will be incurred by Class I injection well owners and operators. The average annual compliance costs per affected facility employing on-site alternative treatment were $217,500. The total annual compliance costs for the 154 potentially affected facilities would therefore be $33.4 million. These figures were derived by applying the probability of certain outcomes occurring, via the decision tree methodology described in the RIA, to the costs associated with those outcomes for each affected facility.

Additionally, as part of the RIA analysis, the costs associated with three differing scenarios also were derived. These scenarios are represented by (1) a minimum case, where all facilities incur only petition costs, (2) a mid-line case, where all facilities incur treatment costs (commercial facilities treat on-site with no waste segregation while non-commercial facilities chose the least cost treatment option), and a maximum case, where all facilities incur both petition and treatment costs. Costs associated with these scenarios range

from $3.67 million per year for all facilities incurring only petition costs to $132.62 million per year for all facilities incurring both petition and treatment costs. Based on past EPA experience, there is little probability that all facilities will arrive at each of these possible outcomes. However, this indicated range provides an extreme lower and upper bound estimate for national compliance costs purposes.

The benefits to human health and the environment in the RIA are generally defined as reduced human health risk resulting from fewer instances of ground water contamination. In general, potential health risks from Class I injection wells are extremely low.

EPA conducted a quantitative assessment of the potential human health risks associated with two well malfunction scenarios. EPA developed a methodology described in the RIA to measure health risks of five Phase III contaminants: benzene, carbon tetrachloride, chloroform, phenol, and toluene. The results of these analyses show that most of the cancer risks calculated are below the 1×10^{-4} to 1×10^{-6} risk range generally used by EPA to regulate exposure to carcinogens. Virtually all of the non-cancer risks are below a hazard index (HI) of 1, which represents a ratio used to compare the relative health risks posed by contaminants. Therefore, these cancer and non-cancer risks calculated are below any levels of regulatory concern. Only two cancer risk estimates in the high end scenarios, those calculated for benzene and carbon tetrachloride, slightly exceeded the risk range to regulate exposure to carcinogens. Only one hazard index calculated for carbon tetrachloride exceeded EPA's level of concern of a ratio greater than 1. However, these results were derived from a scenario where an abandoned borehole (i.e. the ''failure pathway'') was in very close proximity to the injection well, substantial pumping of a drinking water well was occurring, and the local geology was typical of the highly transmissive East Gulf Coast Region. The assumptions used in deriving these results were based on conservative, upper-bound estimates, therefore the cancer and non-cancer risks represent worst-case estimates. Considering the limitations imposed by the failure scenarios, and the documented low probability of Class I failures, the overall risks from failure of Class I injection wells would be below regulatory concern.

There also is a potential qualitative benefit to the no-migration process for Class I nonhazardous wells. It is possible that the process would uncover certain wells that cannot satisfy the no-migration standard and indeed may not be suitable for Class I injection in any case. This proved to be true for Class I hazardous wells. However, notwithstanding this potential benefit, as noted in the early part of this preamble, the Agency does not regard this regulatory effort as deserving of the priority afforded it, due to the litigation-driven schedule and the D.C. Circuit's mandate, and would not be undertaking the effort at this time were it not for that mandate and schedule.

The economic analysis of LDR Phase III compliance costs suggests that publicly traded companies probably will not be significantly affected. The limited data available for privately-held companies suggests, however, that they may face significant costs due to the proportionally larger expenses they may face due to the LDR Phase III rule.

C. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 et seq., when an agency publishes a notice of rulemaking, for a rule that will have a significant effect on a substantial number of small entities, the agency must prepare and make available for public comment a regulatory flexibility analysis that considers the effect of the rule on small entities (i.e.: small businesses, small organizations, and small governmental jurisdictions). Under the Agency's Revised Guidelines for Implementing The Regulatory Flexibility Act, dated May 4, 1992, the Agency committed to considering regulatory alternatives in rulemakings when there were any economic impacts estimated on any small entities. (See RCRA sections 3004 (d), (e), and (g)(5), which apply uniformly to all hazardous wastes.) Previous guidance required regulatory alternatives to be examined only when significant economic effects were estimated on a substantial number of small entities.

In assessing the regulatory approach for dealing with small entities in today's rule, for both surface disposal of wastes, the Agency considered two factors. First, data on potentially affected small entities are unavailable. Second, due to the statutory requirements of the RCRA LDR program, no legal avenues exist for the Agency to provide relief from the LDR's for small entities. The only relief available for small entities is the existing small quantity generator provisions and conditionally exempt small quantity generator exemptions found in 40 CFR 262.11–12, and 261.5, respectively. These exemptions basically prescribe 100 kilograms (kg) per calendar month generation of hazardous waste as the limit below which one is exempted from complying with the RCRA standards.

Given these two factors, the Agency was unable to frame a series of small entity options from which to select the lowest cost approach; rather, the Agency was legally bound to regulate the land disposal of the hazardous wastes covered in today's rule without regard to the size of the entity being regulated.

The Agency has, however, included an exemption covering injection facilities where the decharacterized portion of the injectate is minimal in absolute terms, as a percentage of the total injectate, and in hazardous constituent mass loadings. This *de minimis* exemption provides a measure of relief to both small and larger entities satisfying its terms.

D. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq*. Four Information Collection Request (ICR) documents have been prepared by EPA, as follows. OSWER ICR No. 1442.12 would amend the existing ICR approved under OMB Control No. 2050–0085. The additional information requirements for the Underground Injection Control (UIC) Program were submitted to OMB under ICR No. 0370.14; this will amend the existing UIC approval under OMB Control No. 2040–0042. OSWER ICR No. 1442.12 and UIC ICR No. 0370.14 have not been approved by OMB and the information collection requirements in those ICRs are not enforceable until OMB approves them. EPA will publish a document in the Federal Register when OMB approves the information collection requirements. Until EPA publishes a document displaying the valid OMB control number, persons are not required to respond to collections of information in these two ICRs. Two amendments to National Pollutant Discharge Elimination System (NPDES) ICRs were approved at proposal. These are ICR 0229.10 for the Discharge Monitoring Report, approved under OMB Control No. 2040–0004, and ICR 0226.11 for NPDES Applications, approved under OMB Control No. 2040–0086.

Copies of these ICRs may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, D.C. 20460 or by calling (202) 260–2740. Include the ICR numbers in any request. The information requirements for the

OSWER ICR and the UIC ICR are not effective until OMB approves them.

The additional burden associated with the OSWER ICR 1442.12 is as follows. The overall annual burden for the recordkeeping and reporting requirements is 4,202 hours. It is expected that approximately 125 respondents will be affected, therefore, the annual recordkeeping and reporting burden averages 33 hours per respondent. This time is necessary to collect data, submit notifications and certifications to waste treaters and disposers, and to maintain records of this information. The annual cost burden for this rule is approximately $177,045. Of this amount, it is estimated that facilities will incur annual operation and maintainence capital costs of approximately $8,375.

The additional burden associated with the UIC Program, explained in ICR 0370.14, is as follows. The estimated annual reporting burden averages 3845 hours per respondent (i.e., inclusive of incremental reporting burdens associated with all affected Class I facilities and Primacy States). The average incremental annual reporting and recordkeeping burdens are about 4,442 hours per each affected Class I nonhazardous facility and about 2,700 hours per each affected Class I hazardous facility. For efforts associated with implementing the rule amendments, the annual incremental State burden equals about 22 hours for each Class I respondent.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection of techniques to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, D.C. 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR numbers in any correspondence.

X. Unfunded Mandates Reform Act

Under Section 202 of the Unfunded Mandates Reform Act of 1995, signed into law on March 22, 1995, EPA must prepare a statement to accompany any rule where the estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, will be $100 million or more in any one year. Under Section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objective of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly impacted by the rule.

EPA has completed an analysis of the costs and benefits from the LDR Phase III rule and has determined that this rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local or tribal governments in the aggregate. As stated above, the private sector may incur costs exceeding $100 million per year depending upon the option chosen in the final rulemaking. EPA has fulfilled the requirement for analysis under the Unfunded Mandates Reform Act, and results of this analysis have been included in the background document ''Regulatory Impact Analysis of the Final Phase III Land Disposal Restrictions Rule,'' which was placed in the docket for today's rule.

List of Subjects

40 CFR Part 148

Environmental protection, Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

40 CFR Part 403

Reporting and recordkeeping requirements, Waste treatment and disposal, Water pollution control.

Dated: February 16, 1996.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Secs. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

2. Section 148.1 is amended by revising paragraphs (a), (b) and (d) to read as follows:

§ 148.1 Purpose, scope and applicability.

(a) This part identifies wastes that are restricted from disposal into Class I wells and defines those circumstances under which a waste, otherwise prohibited from injection, may be injected.

(b) The requirements of this part apply to owners or operators of Class I hazardous waste injection wells used to inject hazardous waste; and, owners or operators of Class I injection wells used to inject wastes which once exhibited a prohibited characteristic of hazardous waste identified in 40 CFR part 261, subpart C, at the point of generation, and no longer exhibit the characteristic at the point of injection.

* * * * *

(d) Wastes that are only hazardous because they display a characteristic of ignitability, corrosivity, reactivity, or toxicity that are otherwise prohibited, are not prohibited:

(1) If the wastes are disposed into a nonhazardous waste injection well defined under 40 CFR 144.6(a); and

(2) Do not exhibit any prohibited characteristic of hazardous waste identified in 40 CFR part 261, subpart C, and either:

(i) Do not contain any hazardous constituents identified in 40 CFR 268.48 at levels greater than the 40 CFR 268.48 Universal Treatment Standard levels at the point of generation;

(ii) Are de minimis in volume and hazardous constituent concentration levels, as defined in 40 CFR 268.1(e)(4)(ii). (Recordkeeping requirements for this alternative are found at 40 CFR 268.9(d)(4).); or

(iii)(A) The facility removes an equivalent mass of hazardous

constituents as would be removed by treating the characteristic hazardous wastestream pursuant to the treatment standards in 40 CFR 268.48. This mass reduction can come from:

(*1*) Treating nonhazardous portions of the injectate;

(*2*) Recycling before ultimate injection; or

(*3*) Engaging in pollution prevention practices (such as equipment or technology modifications, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control).

(B) The compliance alternative in paragraph (d)(2)(iii)(A) of this section is demonstrated by comparing the injected baseline (determined by multiplying the volume/day of characteristically hazardous waste generated and injected) times the concentration of hazardous constituents before the treatment/recycling/pollution prevention measure, with the mass allowance obtained by multiplying the volume/day of a hazardous constituent generated and injected times the universal treatment standard for that constituent. The baseline cannot include practices initiated before the year 1990. (Recordkeeping requirements for this alternative are found at 40 CFR 268.9(d)(3).)

3. Section 148.3 is revised to read as follows:

§ 148.3 Dilution prohibited as a substitute for treatment.

(a) The provisions of 40 CFR 268.3 shall apply to owners or operators of Class I wells used to inject a waste which is hazardous at the point of generation whether or not the waste is hazardous at the point of injection.

(b) Owners or operators of Class I nonhazardous waste injection wells which inject waste formerly exhibiting a hazardous characteristic which has been removed by dilution, may address underlying hazardous constituents by treating the hazardous waste, obtaining an exemption pursuant to a petition filed under § 148.20, or complying with the provisions set forth in 40 CFR 268.9.

4. Section 148.4 is revised to read as follows:

§ 148.4 Procedures for case-by-case extensions to an effective date.

The owner or operator of a Class I hazardous or nonhazardous waste injection well may submit an application to the Administrator for an extension of the effective date of any applicable prohibition established under subpart B of this part according to the procedures of 40 CFR 268.5.

5. Section 148.18 is added to subpart B to read as follows:

§ 148.18 Waste specific prohibitions—Newly Identified Wastes.

(a) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–387, U389–U396, U400–U404, U407, and U409–U411 are prohibited from underground injection.

(b) On January 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste number K088 is prohibited from underground injection.

(c) On April 8, 1998, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers D018–043, and Mixed TC/Radioactive wastes, are prohibited from underground injection.

(d) On April 8, 1998, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers D001–D003 are prohibited from underground injection.

6. Section 148.20 is amended by revising paragraph (a) introductory text to read as follows:

§ 148.20 Petitions to allow injection of a waste prohibited under subpart B.

(a) Any person seeking an exemption from a prohibition under subpart B of this part for the injection of a restricted hazardous waste, including a hazardous waste exhibiting a characteristic and containing underlying hazardous constituents at the point of generation, but no longer exhibiting a characteristic when injected into a Class I injection well or wells, shall submit a petition to the Director demonstrating that, to a reasonable degree of certainty, there will be no migration of hazardous constituents from the injection zone for as long as the waste remains hazardous. This demonstration requires a showing that:

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

7. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

8. Section 268.1 is amended in paragraph (e)(3) by removing the period at the end of the paragraph and adding ''; or'' in its place, by revising paragraph (e)(4) and by removing paragraph (e)(5) to read as follows:

§ 268.1 Purpose, scope and applicability.

* * * * *

(e) * * *

(4) *De minimis* losses of characteristic wastes to wastewaters are not considered to be prohibited wastes and are defined as:

(i) Losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; rinsate from empty containers or from containers that are rendered empty by that rinsing; and laboratory wastes not exceeding one per cent of the total flow of wastewater into the facility's headworks on an annual basis, or with a combined annualized average concentration not exceeding one part per million in the headworks of the facility's wastewater treatment or pretreatment facility; or

(ii) Decharacterized wastes which are injected into Class I nonhazardous wells which wastes combined volume is less than one per cent of the total flow at the wellhead on an annualized basis, is no greater than 10,000 gallons per day, and in which any underlying hazardous constituents in the characteristic wastes are present at the point of generation at levels less than ten times the treatment standards found at § 268.48.

* * * * *

9. Section 268.2 is amended by revising paragraphs (f) and (i), and by adding paragraphs (j), (k), and (l) to read as follows:

§ 268.2 Definitions applicable in this part.

* * * * *

(f) *Wastewaters* are wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS).

* * * * *

(i) *Underlying hazardous constituent* means any constituent listed in § 268.48, Table UTS—Universal Treatment Standards, except fluoride, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standards.

(j) *Inorganic metal-bearing waste* is one for which EPA has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content as described in § 268.3(b)(1), and is specifically listed in appendix XI of this part.

(k) *End-of-pipe* refers to the point where effluent is discharged to the environment.

(l) *Stormwater impoundments* are surface impoundments which receive wet weather flow, and only receive process waste during wet weather events.

10. Section 268.3 is revised to read as follows:

§ 268.3 Dilution prohibited as a substitute for treatment.

(a) No generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with subpart D of this part, to circumvent the effective date of a prohibition in subpart C of this part, to otherwise avoid a prohibition in subpart C of this part, or to circumvent a land disposal prohibition imposed by RCRA section 3004.

(b) Dilution of wastes that are hazardous only because they exhibit a hazardous characteristic in a treatment system which treats wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act (CWA), or which treats wastes for the purposes of pretreatment requirements under section 307 of the CWA, or zero discharge systems with wastewater treatment equivalent to these systems, is not impermissible dilution, so long as the § 268.48 universal treatment standards are met at the point of discharge, or at a prior point of compliance specified under a CWA permit, for all underlying hazardous constituents reasonably expected to be present at the point of generation of the hazardous waste.

(c) Combustion of the hazardous waste codes listed in Appendix XI of this part is prohibited, unless the waste, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, can be demonstrated to comply with one or more of the following criteria (unless otherwise specifically prohibited from combustion):

(1) the waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard found in § 268.48;

(2) The waste consists of organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste;

(3) The waste, at point of generation, has reasonable heating value such as greater than or equal to 5000 BTU per pound;

(4) The waste is co-generated with wastes for which combustion is a required method of treatment;

(5) The waste is subject to Federal and/or State requirements necessitating reduction of organics (including biological agents); or

(6) The waste contains greater than 1% Total Organic Carbon (TOC).

11. Section 268.7 is amended by revising the last sentence of paragraph (a) introductory text, paragraphs (a)(1)(ii), (a)(2)(i)(B), (a)(3)(ii), (b)(4)(ii), (b)(5)(iv), by removing ''268.45'';'' at the end of paragraph (a)(1)(iv) and adding ''268.45'; and'' in its place, by removing ''; and,'' at the end of paragraph (a)(1)(v) and adding a period in its place, by removing paragraph (a)(1)(vi), and by adding paragraph (b)(5)(v) to read as follows:

§ 268.7 Waste analysis and recordkeeping.

(a) * * * If the generator determines that his waste exhibits the characteristic of ignitability (D001) (and is not in the High TOC Ignitable Liquids Subcategory or is not treated by CMBST or RORGS of § 268.42, Table 1), and/or the characteristic of corrosivity (D002), and/or reactivity (D003), and/or the characteristic of organic toxicity (D012–D043), and is prohibited under § 268.37, § 268.38, and § 268.39, the generator must determine the underlying hazardous constituents (as defined in § 268.2, in the D001, D002, D003, or D012–D043 wastes.

(1) * * *

(ii) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2 (d) and (f), and indicate the subcategory of the waste (such as ''D003 reactive cyanide''), if applicable;

* * * * *

(2) * * *

(i) * * *

(B) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2(d) and (f)) and indicate the subcategory of the waste (such as ''D003 reactive cyanide''), if applicable;

* * * * *

(3) * * *

(ii) The waste constituents that the treater will monitor, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2(d) and (f)), and indicate the subcategory of the waste (such as ''D003 reactive cyanide''), if applicable;

* * * * *

(b) * * *

(4) * * *

(ii) The waste constituents to be monitored, if monitoring will not include all regulated constituents, for wastes F001–F005, F039, D001, D002, D003, and D012–D043. Generators must also include whether the waste is a nonwastewater or wastewater (as defined in § 268.2(d) and (f), and indicate the subcategory of the waste (such as D003 reactive cyanide), if applicable;

* * * * *

(5) * * *

(iv) For characteristic wastes D001, D002, D003, and D012–D043 that are: subject to the treatment standards in § 268.40 (other than those expressed as a required method of treatment); that are reasonably expected to contain underlying hazardous constituents as defined in § 268.2(i); are treated on-site to remove the hazardous characteristic; and are then sent off-site for treatment of underlying hazardous constituents, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(v) For characteristic wastes D001, D002, D003 and D012–D043 that contain underlying hazardous constituents as defined in § 268.2(i) that are treated on-site to remove the hazardous characteristic and to treat underlying hazardous constituents to levels in § 268.48 Universal Treatment Standards, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic, and that underlying hazardous constituents, as defined in § 268.2, have been treated on-site to meet the § 268.48 Universal Treatment Standards. I am aware that there are

significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

* * * * *

§ 268.8 [Removed and reserved]

12. Section 268.8 is removed and reserved.

13. Section 268.9 is amended by revising paragraphs (a), (d) introductory text, (d)(1)(i), and (d)(1)(ii), and by adding paragraphs (d)(3), (e), (f), and (g) to read as follows:

§ 268.9 Special rules regarding wastes that exhibit a characteristic.

(a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subpart D of this part. For purposes of this part 268, the waste will carry the waste code for any applicable listing under 40 CFR part 261, subpart D. In addition, the waste will carry one or more of the waste codes under 40 CFR part 261, subpart C, where the waste exhibits a characteristic, except in the case when the treatment standard for the waste code listed in 40 CFR part 261, subpart D operates in lieu of the standard for the waste code under 40 CFR part 261, subpart C, as specified in paragraph (b) of this section. If the generator determines that his waste displays a hazardous characteristic (and the waste is not a D004—D011 waste, a High TOC D001, or is not treated by CMBST, or RORGS of § 268.42, Table 1), the generator must determine what underlying hazardous constituents (as defined in § 268.2), are reasonably expected to be present above the universal treatment standards found in § 268.48.

* * * * *

(d) Wastes that exhibit a characteristic are also subject to § 268.7 requirements, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generators or treaters files and sent to the EPA region or authorized state, except for those facilities discussed in paragraph (f) of this section. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the Subtitle D facility receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31.

(1) * * *

(i) For characteristic wastes other than those managed on site in a wastewater treatment system subject to the Clean Water Act (CWA), zero-dischargers engaged in CWA-equivalent treatment, or Class I nonhazardous injection wells, the name and address of the Subtitle D facility receiving the waste shipment; and

(ii) For all characteristic wastes, a description of the waste as initially generated, including the applicable EPA Hazardous Waste Number(s), treatability group(s), and underlying hazardous constituents.

* * * * *

(3) For characteristic wastes whose ultimate disposal will be into a Class I nonhazardous injection well, and compliance with the treatment standards found in § 268.48 for underlying hazardous constituents is achieved through pollution prevention that meets the criteria set out at 40 CFR 148.1(d), the following information must also be included:

(i) A description of the pollution prevention mechanism and when it was implemented if already complete;

(ii) The mass of each underlying hazardous constituent before pollution prevention;

(iii) The mass of each underlying hazardous constituent that must be removed, adjusted to reflect variations in mass due to normal operating conditions; and

(iv) The mass reduction of each underlying hazardous constituent that is achieved.

(e) For decharacterized wastes managed on-site in a wastewater treatment system subject to the Clean Water Act (CWA) or zero-dischargers engaged in CWA-equivalent treatment, compliance with the treatment standards found at § 268.48 must be monitored quarterly, unless the treatment is aggressive biological treatment, in which case compliance must be monitored annually. Monitoring results must be kept in on-site files for 5 years.

(f) For decharacterized wastes managed on-site in a wastewater treatment system subject to the Clean Water Act (CWA) for which all underlying hazardous constituents (as defined in § 268.2), are addressed by a CWA permit, this compliance must be documented and this documentation must be kept in on-site files.

(g) For characteristic wastes whose ultimate disposal will be into a Class I nonhazardous injection well which qualifies for the *de minimis* exclusion described in § 268.1, information supporting that qualification must be kept in on-site files.

§§ 268.10–268.12 [Removed and Reserved]

14. Sections 268.10 through 268.12 are removed and reserved.

15. Section 268.39 is added to subpart C to read as follows:

§ 268.39 Waste specific prohibitions—End-of-pipe CWA, CWA-equivalent, and Class I nonhazardous injection well treatment standards; spent aluminum potliners; and carbamate wastes.

(a) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K156–K161; and in 40 CFR 261.33 as EPA Hazardous Waste numbers P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

(b) On July 8, 1996 the wastes identified in 40 CFR 261.23 as D003 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. This prohibition does not apply to unexploded ordnance and other explosive devices which have been the subject of an emergency response (such D003 wastes are prohibited unless they meet the treatment standard of DEACT before land disposal (see § 268.40)).

(c) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

(d) On April 8, 1998, decharacterized wastes managed in surface impoundments whose discharge is regulated under the Clean Water Act (CWA), or decharacterized wastes managed by zero dischargers in surface impoundments or tanks that engage in CWA-equivalent treatment before ultimate land disposal are prohibited from land disposal. The following are exceptions to this requirement:

(1) Surface impoundments which are permitted under subtitle C of RCRA;

(2) Storm water impoundments as defined in § 268.2;

(3) Surface impoundments which are part of facilities in the pulp, paper, and paperboard industrial category.

(e) On April 8, 1998, Radioactive wastes mixed with K088, K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, and U407, U409–U411 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

(f) Between July 8, 1996 and April 8, 1998, the wastes included in paragraphs (a), (b), (c), and (e) of this section may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in § 268.5(h)(2).

(g) The requirements of paragraphs (a), (b), (c), (d), and (e) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in Subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under § 268.44;

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to these wastes covered by the extension.

(h) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Subpart D levels, the waste is prohibited from land disposal, and all requirements of this part 268 are applicable, except as otherwise specified.

16. Section 268.40 is amended by revising paragraph (e) and the table at the end of § 268.40 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

(e) For characteristic wastes (D001–D043) that are subject to treatment standards in the following table ''Treatment Standards for Hazardous Wastes,'' all underlying hazardous constituents (as defined in § 268.2(i)) must meet Universal Treatment Standards, found in § 268.48, ''Table UTS,'' prior to land disposal.

(1) When these wastes are managed in wastewater treatment systems regulated by the Clean Water Act (CWA), compliance with the treatment standards must be achieved no later than ''end-of-pipe'' as defined in § 268.2(k); or

(2) When these wastes are managed in CWA-equivalent treatment systems and tank-based systems that discharge onto the land, compliance with the treatment standards must be achieved no later than the point the wastewater is released to the land (e.g., spray irrigation, discharge to dry river beds, placed into evaporation ponds); or

(3) When these wastes are managed in Class I nonhazardous injection wells, compliance with the treatment standards must be achieved no later than the well head; or

(4) For all other, compliance with the treatment standard must be met prior to land disposal as defined in § 268.2(c).

* * * * *

Treatment Standards for Hazardous Wastes

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
D001	Ignitable Characteristic Wastes, except for the §261.21(a)(1) High TOC Subcategory.	NA	NA	DEACT and meet §268.48 standards; or RORGS; or CMBST[8]	DEACT and meet §268.48 standards; or RORGS; or CMBST[8]
	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1)—Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only).	NA	NA	NA	RORGS; or CMBST
D002	Corrosive Characteristic Wastes.	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]
D002, D004, D005, D006, D007, D008, D009, D010, D011.	Radioactive high level wastes generated during the reprocessing of fuel rods. (Note: This subcategory consists of nonwastewaters only).	Corrosivity (pH)	NA	NA	HLVIT
		Arsenic	7440–38–2	NA	HLVIT
		Barium	7440–39–3	NA	HLVIT
		Cadmium	7440–43–9	NA	HLVIT
		Chromium (Total)	7440–47–3	NA	HLVIT
		Lead	7439–92–1	NA	HLVIT
		Mercury	7439–97–6	NA	HLVIT
		Selenium	7782–49–2	NA	HLVIT
		Silver	7440–22–4	NA	HLVIT
D003	Reactive Sulfides Subcategory based on 261.23(a)(5).	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]
	Explosives Subcategory based on 261.23(a) (6), (7) and (8).	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other Reactives Subcategory based on 261.23(a)(1).	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]
	Water Reactive Subcategory based on 261.23(a)(2), (3), and (4). (Note: This subcategory consists of nonwastewaters only).	NA	NA	NA	DEACT and meet §268.48 standards[8]
	Reactive Cyanides Subcategory based on 261.23(a)(5).	Cyanides (Total)[7]	57–12–5	Reserved	590
		Cyanides (Amendable)[7]	57–12–5	0.86	30
D004	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the extraction procedure (EP) in SW846 Methods 1310.	Arsenic	7440–38–2	5.0	5.0 mg/l EP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		Arsenic; alternate[6] standard for nonwastewaters only.	7440–38–2	NA	5.0 mg/l TCLP
D005	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the extraction procedure (EP) in SW846 Method 1310.	Barium	7440–39–3	100	100 mg/l TCLP
D006	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the extraction procedure (EP) in SW846 Method 1310.	Cadmium	7440–43–9	1.0	1.0 mg/l TCLP
	Cadmium Containing Batteries Subcategory. (Note: This subcategory consists of nonwastewaters only).	Cadmium	7440–43–9	NA	RTHRM
D007	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the extraction procedure (EP) in SW846 Method 1310.	Chromium (Total)	7440–47–3	5.0	5.0 mg/l TCLP
D008	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the extraction procedure (EP) in SW846 Method 1310.	Lead	7439–92–1	5.0	5.0 mg/l EP
		Lead; alternate[6] standard for nonwastewaters only.	7439–92–1	NA	5.0 mg/l TCLP
	Lead Acid Batteries Subcategory (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of 40 CFR 268 or exempted under other EPA regulations (see 40 CFR 266.80). This subcategory consists of nonwastewaters only.).	Lead	7439–92–1	NA	RLEAD
	Radioactive Lead Solids Subcategory (Note: these lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organo-lead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only).	Lead	7439–92–1	NA	MACRO

D009	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory.).	Mercury	7439–97–6	NA	IMERC; OR RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory.).	Mercury	7439–97–6	NA	RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain less than 260 mg/kg total mercury. (Low Mercury Subcategory.).	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	All D009 wastewaters	Mercury	7439–97–6	0.20	NA
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only.).	Mercury	7439–97–6	NA	AMLGM
	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory. (Note: This subcategory consists of nonwastewaters only.).	Mercury	7439–97–6	NA	IMERC
D010	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the extraction procedure (EP) in SW846 Method 1310.	Selenium	7782–49–2	1.0	5.7 mg/l TCLP
D011	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the extraction procedure (EP) in SW846 Method 1310.	Silver	7440–22–4	5.0	5.0 mg/l TCLP
D012	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.	Endrin	72–20–8	BIODG; or CMBST[8]	0.13 and meet § 268.48 standards[8]
		Endrin aldehyde	7421–93–4	BIODG; or CMBST[8]	0.13 and meet § 268.48 standards[8]
D013	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.).	alpha-BHC	319–84–6	CARBN; or CMBST[8]	0.066 and meet § 268.48 standards[8]
		beta–BHC	319–85–7	CARBN; or CMBST[8]	0.066 and meet § 268.48 standards[8]
		delta-BHC	319–86–8	CARBN; or CMBST[8]	0.066 and meet § 268.48 standards[8]
		gamma-BHC (Lindane)	58–89–9	CARBN; or CMBST[8]	0.066 and meet § 268.48 standards[8]
D014	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.	Methoxychlor	72–43–5	WETOX or CMBST[8]	0.18 and meet § 268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
D015	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.	Toxaphene	8001–35–2	BIODG or CMBST[8]	2.6 and meet § 268.48 standards[8]
D016	Wastes that are TC for 2,4-D (2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.	2,4-D (2,4-Dichlorophenoxyacetic acid).	94–75–7	CHOXD, BIODG, or CMBST[8]	10 and meet § 268.48 standards[8]
D017	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.	2,4,5-TP (Silvex)	93–72–1	CHOXD or CMBST[8]	7.9 and meet § 268.48 standards[8]
D018	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.	Benzene	71–43–2	0.14 and meet § 268.48 standards[8]	10 and meet § 268.48 standards[8]
D019	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.	Carbon tetrachloride	56–23–5	0.057 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D020	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.	Chlordane (alpha and gamma isomers).	57–74–9	0.0033 and meet § 268.48 standards[8]	0.26 and meet § 268.48 standards[8]
D021	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.	Chlorobenzene	108–90–7	0.057 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D022	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.	Chloroform	67–66–3	0.046 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D023	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.	o-Cresol	95–48–7	0.11 and meet § 268.48 standards[8]	5.6 and meet § 268.48 standards[8]
D024	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.	m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77 and meet § 268.48 standards[8]	5.6 and meet § 268.48 standards[8]
D025	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77 and meet § 268.48 standards[8]	5.6 and meet § 268.48 standards[8]
D026	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid)(sum of o-, m-, and p-cresol concentrations).	1319–77–3	0.88 and meet § 268.48 standards[8]	11.2 and meet § 268.48 standards[8]
D027	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene).	106–46–7	0.090 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D028	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.	1,2-Dichloroethane	107–06–2	0.21 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]
D029	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.	1,1-Dichloroethylene	75–35–4	0.025 and meet § 268.48 standards[8]	6.0 and meet § 268.48 standards[8]

D030	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.	2,4-Dinitrotoluene	121–14–2	0.32 and meet § 268.48 standards [8]	140 and meet § 268.48 standards [8]
D031	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.	Heptachlor	76–44–8	0.0012 and meet § 268.48 standards [8]	0.066 and meet § 268.48 standards [8]
		Heptachlor epoxide	1024–57–3	0.016 and meet § 268.48 standards [8]	0.066 and meet § 268.48 standards [8]
D032	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311.	Hexachlorobenzene	118–74–1	0.055 and meet § 268.48 standards [8]	10 and meet § 268.48 standards [8]
D033	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.	Hexachlorobutadiene	87–68–3	0.055 and meet § 268.48 standards [8]	5.6 and meet § 268.48 standards [8]
D034	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.	Hexachloroethane	67–72–1	0.055 and meet § 268.48 standards [8]	30 and meet § 268.48 standards [8]
D035	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.	Methyl ethyl ketone	78–93–3	0.28 and meet § 268.48 standards [8]	36 and meet § 268.48 standards [8]
D036	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.	Nitrobenzene	98–95–3	0.068 and meet § 268.48 standards [8]	14 and meet § 268.48 standards [8]
D037	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.	Pentachlorophenol	87–86–5	0.089 and meet § 268.48 standards [8]	7.4 and meet § 268.48 standards [8]
D038	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.	Pyridine	110–86–1	0.014 and meet § 268.48 standards [8]	16 and meet § 268.48 standards [8]
D039	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	Tetrachloroethylene	127–18–4	0.056 and meet § 268.48 standards [8]	6.0 and meet § 268.48 standards [8]
D040	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.	Trichloroethylene	79–01–6	0.054 and meet § 268.48 standards [8]	6.0 and meet § 268.48 standards [8]
D041	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,5-Trichlorophenol	95–95–4	0.18 and meet § 268.48 standards [8]	7.4 and meet § 268.48 standards [8]
D042	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,6-Trichlorophenol	88–06–2	0.035 and meet § 268.48 standards [8]	7.4 and meet § 268.48 standards [8]
D043	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.	Vinyl chloride	75–01–4	0.27 and meet § 268.48 standards [8]	6.0 and meet § 268.48 standards [8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
F001, F002, F003, F004, & F005	F001, F002, F003, F004, and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluorethane, trichloroethane, trichloromonofluouromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in § 261.31.	Acetone	67–64–1	0.28	160
		Benzene	71–42–2	0.14	10
		n-Butyl alcohol	71–36–3	5.6	2.6
		Carbon disulfide	75–15–0	3.8	NA
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chlorobenzene	108–90–7	0.057	6.0
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations.	1319–77–3	0.88	11.2
		Cyclohexanone	108–94–1	0.36	NA
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Ethyl acetate	141–78–6	0.34	33
		Ethyl benzene	100–41–4	0.057	10
		Ethyl ether	60–29–7	0.12	160
		Isobutyl alcohol	78–83–1	5.6	170
		Methanol	67–56–1	5.6	NA
		Methylene chloride	75–9–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		Nitrobenzene	98–95–3	0.068	14
		Pyridine	110–86–1	0.014	16
		Tetrachloroethylene	127–18–4	0.056	6.0
		Toluene	108–88–3	0.080	10
		1,1,1-Trichlorethane	71–55–6	0.054	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0

		1,1,2-Trichloro-1,2,2-trifluoroethane.	76–13–1	0.057	30
		Trichloroethylene	79–01–6	0.054	6.0
		Trichloromonofluoromethane	75–69–4	0.020	30
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations.	1330–20–7	0.32	30
	F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001–5 solvents: carbon disulfide, cyclohexanone, and/or methanol. (formerly 268.41(c)).	Carbon disulfide	75–15–0	3.8	4.8 mg/1 TCLP
		Cyclohexanone	108–94–1	0.36	0.75 mg/l TCLP
		Methanol	67–56–1	5.6	0.75 mg/l TCLP
	F005 solvent waste containing 2-Nitropropane as the only listed F001–5 solvent..	2-Nitropropane	79–46–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
	F005 solvent waste containing 2—Ethoxyethanol as the only listed F001–5 solvent..	2-Ethoxyethanol	110–80–5	BIODG; or CMBST	CMBST
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum..	Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amendable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	0.43	0.30 mg/l TCLP
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440–43–9	0.69	0.19 mg/1 TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30

F020, F021, F022, F023, F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives, excluding wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F020); (2) pentachlorophenol, or of intermediates used to produce its derivatives (i.e., F021); (3) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F022); and from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenols, excluding wastes from equipment used only for the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F023); (2) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F026).	HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		Pentachlorophenol	87–86–5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).	All F024 wastes	NA	CMBST	CMBST
		2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
		3-Chloropropylene	107–05–1	0.036	30
		1,1-Dichloroethane	75–34–3	0.059	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,2-Dichloropropane	78–87–5	0.85	18
		cis-1,3-Dichloropropylene	10061–01–5	0.036	18
		trans-1,3-Dichloropropylene	10061–02–6	0.036	18
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Hexachloroethane	67–72–1	0.055	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
F025	Condensed light ends from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1-Dichloroethylene	75–35–4	0.025	6.0
		Methylene chloride	75–9–2	0.089	30
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Vinyl chloride	75–01–4	0.27	6.0
	Spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025—Spent Filters/Aids and Desiccants Subcategory.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Methylene chloride	75–9–2	0.089	30
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Vinyl chloride	75–01–4	0.27	6.0
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component).	HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.059	NA
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.059	3.4
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.14	10
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.059	3.4
		Pentachlorophenol	87–86–5	0.061	3.4

		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.28	28
		TCDFs (All Tetracholorodibenzofurans).	NA	0.059	3.4
		2,4,5-Trichlorophenol	95–95–4	0.057	28
		2,4,6-Trichlorophenol	88–06–2	0.057	10
		2,3,4,6-Tetrachlorophenol	58–90–2	0.059	NA
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Wastes Nos. F020, F021, F023, F026, and F027.	HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.059	5.6
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.059	5.6
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.039	6.2
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.067	8.2
		Pentachlorophenol	87–86–5	0.080	10
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.32	30
		TCDFs (All Tetrachlorodibenzofurans).	NA	2.77	0.86 mg/l TCLP
		2,4,5-Trichlorophenol	95–95–4	1.2	590
		2,4,6-Trichlorophenol	88–06–2	0.69	NA
		2,3,4,6-Tetrachlorophenol	58–90–2	3.98	5.0 mg/l TCLP
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oil cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.	Acenaphthene	83–32–9	0.059	NA
		Anthracene	120–12–7	0.059	3.4
		Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	218–01–9	0.059	3.4
		Di-n-butyl phthalate	84–74–2	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air floatation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological units) and F037, K048, and K051 are not included in this listing.	Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	218–01–9	0.059	3.4
		Di-n-butyl phthalate	84–74–2	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP

F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	Acenaphthylene	208–96–8	0.059	3.4
		Acenaphthene	83–32–9	0.059	3.4
		Acetone	67–64–1	0.28	160
		Acetonitrile	75–05–8	5.6	38
		Acetophenone	96–86–2	0.010	9.7
		2-Acetylaminofluorene	53–96–3	0.059	140
		Acrolein	107–02–8	0.29	NA
		Acrylonitrile	107–13–1	0.24	84
		Aldrin	309–00–2	0.021	0.066
		4-Aminobiphenyl	92–67–1	0.13	NA
		Aniline	62–53–3	0.81	14
		Anthracene	120–12–7	0.059	3.4
		Aramite	140–57–8	0.36	NA
		alpha-BHC	319–84–6	0.00014	0.066
		beta-BHC	319–85–7	0.00014	0.066
		delta-BHC	319–86–8	0.023	0.066
		gamma-BHC	58–89–9	0.0017	0.066
		Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene.	205–99–2	0.11	6.8
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene.	207–08–9	0.11	6.8
		Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Bromodichloromethane	75–27–4	0.35	15
		Methyl bromide (Bromomethane)	74–83–9	0.11	15
		4-Bromophenyl phenyl ether	101–55–3	0.055	15
		n-Butyl alcohol	71–36–3	5.6	2.6
		Butyl benzyl phthalate	85–68–7	0.017	28
		2-sec-Butyl-4,6-dinitrophenol (Dinoseb).	88–85–7	0.066	2.5
		Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
		p-Chloroaniline	106–47–8	0.46	16
		Chlorobenzene	108–90–7	0.057	6.0
		Chlorobenzilate	510–15–6	0.10	NA
		2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
		Chlorodibromomethane	124–48–1	0.057	15
		Chloroethane	75–00–3	0.27	6.0
		bis(2-Chloroethoxy)methane	111–91–1	0.036	7.2
		bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
		Chloroform	67–66–3	0.046	6.0
		bis(2-Chloroisopropyl)ether	39638–32–9	0.055	7.2
		p-Chloro-m-cresol	59–50–7	0.018	14
		Chloromethane (Methyl chlorida)	74–87–3	0.19	30
		2-Chloronaphthalene	91–58–7	0.055	5.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		2-Chlorophenol	95–57–8	0.044	5.7
		3-Chloropropylene	107–05–1	0.036	30
		Chrysene	218–01–9	0.059	3.4
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Cyclohexanone	108–94–1	0.36	0.75 mg/l TCLP
		1,2-Dibromo-e-chloropropane	96–12–8	0.11	15
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
		Dibromomethane	74–95–3	0.11	15
		2,4-D (2,4-Dichlorophenoxyacetic acid).	94–75–7	0.72	10
		o,p′-DDD	53–19–0	0.023	0.87
		p,p′-DDD	72–54–8	0.023	0.087
		o,p′-DDE	3424–82–6	0.031	0.087
		p,p′-DDE	72–55–9	0.031	0.087
		o,p′-DDT	789–02–6	0.0039	0.087
		p,p′-DDT	50–29–3	0.0039	0.087
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Dibenz(a,e)pyrene	192–65–4	0.061	NA
		m-Dichlorobenzene	541–73–1	0.036	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Dichlorodifluoromethane	75–71–8	0.23	7.2
		1,1-Dichloroethane	75–34–3	0.059	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1-Dichloroethylene	75–35–4	0.025	6.0
		trans-1,2-Dichloroethylene	156–60–5	0.054	30
		2,4-Dichlorophenol	120–83–2	0.044	14
		2,6-Dichlorophenol	87–65–0	0.044	14
		1,2-Dichloropropane	78–87–5	0.85	18
		cis-1,3-Dichloropropylene	10061–01–5	0.036	18
		trans-1,3-Dichloropropylene	10061–02–6	0.036	18
		Dieldrin	60–57–1	0.017	0.13
		Diethyl phthalate	84–66–2	0.20	28
		2-4-Dimethyl phenol	105–67–9	0.036	14
		Dimethyl phthalate	131–11–3	0.047	28
		Di-n-butyl phthalate	84–74–2	0.057	28
		1,4-Dinitrobenzene	100–25–4	0.32	2.3
		4,6-Dinitro-o-cresol	534–52–1	0.28	160
		2,4-Dinitrophenol	51–28–5	0.12	160
		2,4-Dinitrotoluene	121–14–2	0.32	140
		2,6-Dinitrotoluene	606–20–2	0.55	28
		Di-n-octyl phthalate	117–84–0	0.017	28
		Di-n-propylnitrosamine	621–64–7	0.40	14

1,4-Dioxane	123–91–1	0.22	170	
Diphenylamine (difficult to distinguish from diphenylnitrosamine).	122–39–4	0.92	13	
Diphenylnitrosamine (difficult to distinguish from diphenylamine).	86–30–6	0.92	13	
1,2-Diphenylhydrazine	122–66–7	0.087	1.5	
Disulfoton	298–04–4	0.017	6.2	
Endosulfan I	939–98–8	0.023	0.066	
Endosulfan II	33213–6–5	0.029	0.13	
Endosulfan sulfate	1–31–07–8	0.029	0.13	
Endrin	72–20–8	0.0028	0.13	
Endrin aldehyde	7421–93–4	0.025	0.13	
Ethyl acetate	141–78–6	0.34	33	
Ethyl cyanide (Propanenitrile)	107–12–0	0.24	360	
Ethyl benzene	100–41–4	0.057	10	
Ethyl ether	60–29–7	0.12	160	
bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28	
Ethyl methacrylate	97–63–2	0.14	160	
Ethylene oxide	75–21–8	0.12	NA	
Famphur	52–85–7	0.017	15	
Fluoranthene	206–44–0	0.068	3.4	
Fluorene	86–73–7	0.059	3.4	
Heptachlor	76–44–8	0.0012	0.066	
Heptachlor epoxide	1024–57–3	0.016	0.066	
Hexachlorobenzene	118–74–1	0.055	10	
Hexachlorobutadiene	87–68–3	0.055	5.6	
Hexachlorocyclopentadiene	77–47–4	0.057	2.4	
HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001	
HxCDFs (All Hexachlorodibenzofurans).	NA	0.000063	0.001	
Hexachloroethane	67–72–1	0.055	30	
Hexachloropropylene	1888–71–7	0.035	30	
Indeno (1,2,3-c,d) pyrene	193–39–5	0.0055	3.4	
Iodomethane	74–88–4	0.19	65	
Isobutyl alcohol	78–83–1	5.6	170	
Isodrin	465–73–6	0.021	0.066	
Isosafrole	120–58–1	0.081	2.6	
Kepone	143–50–8	0.0011	0.13	
Methacrylonitrile	126–98–7	0.24	84	
Methanol	67–56–1	5.6	0.75 mg/l TCLP	
Methapyrilene	91–80–5	0.081	1.5	
Methoxychlor	72–43–5	0.25	0.18	
3-Methylcholanthrene	56–49–5	0.0055	15	
4,4-Methylene bis(2-chloroaniline)	101–14–4	0.50	30	
Methylene chloride	75–09–2	0.089	30	
Methyl ethyl ketone	78–93–3	0.28	36	
Methyl isobutyl ketone	108–10–1	0.14	33	
Methyl methacrylate	80–62–6	0.14	160	
Methyl methansulfonate	66–27–3	0.018	NA	
Methyl parathion	298–00–0	0.014	4.6	
Naphthalene	91–20–3	0.059	5.6	
2-Naphthylamine	91–59–8	0.52	NA	
p-Nitroaniline	100–01–6	0.028	28	
Nitrobenzene	98–95–3	0.068	14	
5-Nitro-o-toluidine	99–55–8	0.32	28	
p-Nitrophenol	100–02–7	0.12	29	
N-Nitrosodiethylamine	55–18–5	0.40	28	
N–Nitrosodimethylamine	62–75–9	0.40	2.3	

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		N-Nitroso-di-n-butylamine	924–16–3	0.40	17
		N-Nitrosomethylethylamine	10595–95–6	0.40	2.3
		N-Nitrosomorpholine	59–89–2	0.40	2.3
		N-Nitrosopiperidine	100–75–4	0.013	35
		N-Nitrosophyrrolidine	930–55–2	0.013	35
		Parathion	56–38–2	0.014	4.6
		Total PCBs (sum of all PCB isomer, or all Aroclors).	1336–36–3	0.10	10
		Pentachlorobenzene	608–93–5	0.055	10
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		Pentachloronitrobenzene	82–68–8	0.055	4.8
		Pentachlorophenol	87–86–5	0.089	7.4
		Phenacetin	62–44–2	0.081	16
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Phorate	298–02–2	0.021	4.6
		Phthalic anhydride	85–44–9	0.055	28
		Pronamide	23950–58–5	0.093	1.5
		Pyrene	129–00–0	0.067	8.2
		Pyridine	110–86–1	0.014	16
		Safrole	94–59–7	0.081	22
		Silvex (2,4,5-TP)	93–72–1	0.72	7.9
		2,4,5-T	93–76–5	0.72	7.9
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,1,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
		Toluene	108–88–3	0.080	10
		Toxaphene	8001–35–2	0.0095	2.6
		Bromoform (Tribromomethane)	75–25–2	0.63	15
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Trichloromonofluoromethane	75–69–4	0.020	30
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
		1,2,3-Trichloropropane	96–18–4	0.85	30
		1,1,2-Trichloro-1,2,2-trifluoroethane.	76–13–1	0.057	30

		tris(2,3-Dibromopropyl) phosphate	126–72–7	0.11	0.10
		Vinyl chloride	75–01–4	0.27	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Antimony	7440–36–0	1.9	2.1 mg/l TCLP
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Barium	7440–39–3	1.2	7.6 mg/l TCLP
		Beryllium	7440–41–7	0.82	0.014 mg/l TCLP
		Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Fluoride	16964–48–8	35	48
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Mercury	7439–97–6	0.15	0.025 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	0.82	0.16 mg/l TCLP
		Silver	7440–22–4	0.43	0.30 mg/l TCLP
		Sulfide	8496–25–8	14	NA
		Thallium	7440–28–0	1.4	0.078 mg/l TCLP
		Vanadium	7440–62–2	4.3	0.23
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol..	Naphthalene	91–20–3	0.059	5.6
		Pentachlorophenol	87–86–5	0.089	7.4
		Phenanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K005	Wastewater treatment sludge from the production of chrome green pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K007	Wastewater treatment sludge from the production of iron blue pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
K008	Oven residue from the production of chrome oxide green.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l
		Lead	7439–92–1	0.69	0.37 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	Chloroform	67–66–3	0.046	6.0
K010	Distillation side cuts from the procduction of acetaldehyde from ethylene.	Chloroform	67–66–3	0.046	6.0
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Acetonitrile	75–05–8	5.6	38
		Acrylonitrile	107–13–1	0.24	84
		Acrylamide	79–06–1	19	23
		Benzene	71–43–2	0.14	10
		Cyanide (Total)	57–12–5	1.2	590
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile..	Acetonitrile	75–05–8	5.6	38
		Acrylonitrile	107–13–1	0.24	84
		Acrylamide	79–06–1	19	23
		Benzene	71–43–2	0.14	10
		Cyanide (Total)	57–12–5	1.2	590
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Acetonitrile	75–05–8	5.6	38
		Acrylonitrile	107–13–1	0.24	84
		Acrylamide	79–06–1	19	23
		Benzene	71–43–2	0.14	10
		Cyanide (Total)	57–12–5	1.2	590
K015	Still bottoms from the distillation of benzyle chloride..	Anthracene	120–12–7	0.059	3.4
		Benzal chloride	98–87–3	0.055	6.0
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene.	205–99–2	0.11	6.8
		Benzo(k)fluroanthene (difficult to distinguish from benzo(b) fluoranthene.	207–08–9	0.11	6.8
		Phenanthrene	85–01–8	0.059	5.6
		Toluene	108–88–3	0.080	10
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	Hexachlorobenzene	118–74–1	0.055	10
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachlorocyclopentadiene	77–47–4	0.057	2.4
		Hexachloroethane	67–72–1	0.055	30
		Tetrachloroethylene	127–18–4	0.056	6.0
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
		1,2-Dichloropropane	78–87–5	0.85	18
		1,2,3-Trichloropropane	96–18–4	0.85	30
K018	Heavy ends from the fractionation column in ethyl chloride production.	Chloroethane	75–00–3	0.27	6.0
		Chloromethane	74–87–3	0.19	NA

		1,1-Dichloroethane	75–34–3	0.059	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Pentachloroethane	76–01–7	NA	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production..	bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
		Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	68–66–3	0.046	6.0
		p-Dichlorobenzene	106–46–7	0.090	NA
		1,2-Dichloroethane	107–06–2	0.21	6.0
		Fluorene	86–73–7	0.059	NA
		Hexachloroethane	67–72–1	0.055	30
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	NA
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Antimony	7440–36–0	1.9	2.1 mg/l TCLP
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	Toluene	108–88–3	0.080	10
		Acetophenone	96–86–2	0.010	9.7
		Diphenylamine (difficult to distinguish from diphenylnitrosamine).	122–39–4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine).	86–30–6	0.92	13
		Phenol	108–95–2	0.039	6.2
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	NA	NA	LLEXT fb SSTRP fb CARBN; or CMBST	CMBST
K026	Stripping still tails from the production of methyl ethyl pyridines.	NA	NA	CMBST	CMBST
K027	Centrifuge and distillation residues from toluene diisocyanate production.	NA	NA	CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	1,1-Dichloroethane	75–34–3	0.059	6.0
		trans-1,2-Dichloroethylene	156–60–5	0.054	30
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Pentachloroethane	76–01–7	NA	6.0
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Cadmium	7440–43–9	0.69	NA
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Chloroform	67–66–3	0.046	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,1-Dichloroethylene	75–35–4	0.025	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		Vinyl chloride	75–01–4	0.27	6.0
K030	Column bodies or heavy ends from the combined production of trichloroethylene and perchloroethylene.	o-Dichlorobenzene	95–50–1	0.088	NA
		p-Dichlorobenzene	106–46–7	0.090	NA
		Hexachlorobutadiene	87–68–3	0.055	5.6
		Hexachloroethane	67–72–1	0.055	30
		Hexachloropropylene	1888–71–7	NA	30
		Pentachlorobenzene	608–93–5	NA	10
		Pentachloroethane	76–01–7	NA	6.0
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K031	By-product salts generated in the production of MSMA and cacodylic acid.	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
K032	Wastewater treatment sludge from the production of chlordane.	Hexachlorocyclopentadiene	77–47–4	0.057	2.4
		Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
		Heptachlor	76–44–8	0.0012	0.066
		Heptachlor epoxide	1024–57–3	0.016	0.066
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	Hexachlorocyclopentadiene	77–47–4	0.057	2.4
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	Hexachlorocylopentadiene	77–47–4	0.057	2.4

K035	Wastewater treatment sludges generated in the production of creosote.	Acenaphthene	83–32–9	NA	3.4
		Anthracene	120–12–7	NA	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Chrysene	218–01–9	0.059	3.4
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Dibenz(a,h)anthracene	53–70–3	NA	8.2
		Fluoranthene	206–44–0	0.068	3.4
		Fluorene	86–73–7	NA	3.4
		Indeno(1,2,3-cd)pyrene	193–39–5	NA	3.4
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Disulfoton	298–04–4	0.017	6.2
K037	Wastewater treatment sludges from the production of disulfoton.	Disulfoton	298–04–4	0.017	6.2
		Toluene	108–88–3	0.080	10
K038	Wastewater from the washing and stripping of phorate production.	Phorate	298–02–2	0.021	4.6
K039	Filter cake from the filtration of diethylphosphorodithioc acid in the production of phorate.	NA	NA	CARBN, or CMBST	CMBST
K040	Wastewater treatment sludge from the production of phorate.	Phorate	298–02–2	0.021	4.6
K041	Wastewater treatment sludge from the production of toxaphene.	Toxaphene	8001–35–2	0.0095	2.6
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	2,4-Dichlorophenol	120–83–2	0.044	14
		2,6-Dichlorophenol	187–65–0	0.044	14
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
		Pentachlorophenol	87–86–5	0.089	7.4
		Tetrachloroethylene	127–18–4	0.056	6.0
		HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	NA	NA	DEACT	DEACT
K045	Spent carbon from the treatment of wastewater containing explosives.	NA	NA	DEACT	DEACT
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Lead	7439–92–1	0.69	0.37 mg/l TCLP
K047	Pink/red water from TNT operations	NA	NA	DEACT	DEACT
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	218–01–9	0.059	3.4
		Di-n-butyl phthalate	84–74–2	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–33	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K049	Slop oil emulsion solids from the petroleum refining industry.	Anthracene	120–12–7	0.059	3.4
		Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Carbon disulfide	75–15–0	3.8	NA
		Chrysene	2218–01–9	0.059	3.4
		2,4-Dimethylphenol	105–67–9	0.036	NA
		Ethylbenzene	100–41–4	0.057	10
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30

		Cyanides (Total) [7]	57–12–5	1.2	590
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Benzo(a)pyrene	50–32–8	0.061	3.4
		Phenol	108–95–2	0.039	6.2
		Cyanides (Total) [7]	57–12–5	1.2	590
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K051	API separator sludge from the petroleum refining industry.	Acenaphthene	83–32–9	0.059	NA
		Anthracene	120–12–7	0.059	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Chrysene	2218–01–9	0.059	3.4
		Di-n-butyl phthalate	105–67–9	0.057	28
		Ethylbenzene	100–41–4	0.057	10
		Fluorene	86–73–7	0.059	NA
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Cyanides (Total) [7]	57–12–5	1.2	590
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K052	Tank bottoms (leaded) from the petroleum refining industry.	Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		2,4-Dimethylphenol	105–67–9	0.036	NA
		Ethylbenzene	100–41–4	0.057	10
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Toluene	108–88–3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	NA
		Nickel	7440–02–0	NA	5.0 mg/l TCLP
K060	Ammonia still lime sludge from coking operations ...	Benzene	71–43–2	0.14	10
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Naphthalene	91–20–3	0.059	5.6
		Phenol	108–95–2	0.039	6.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		Cyanides (Total)[7]	57–12–5	1.2	590
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Antimony	7440–36–0	NA	2.1 mg/l TCLP
		Arsenic	7440–38–2	NA	5.0 mg/l TCLP
		Barium	7440–39–3	NA	7.6 mg/l TCLP
		Beryllium	7440–41–7	NA	0.014 mg/l TCLP
		Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Mercury	7439–97–6	NA	0.025 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	NA	0.16 mg/l TCLP
		Silver	7440–22–4	NA	0.30 mg/l TCLP
		Thallium	7440–28–0	NA	0.078 mg/l TCLP
		Zinc	7440–66–6	NA	5.3 mg/l TCLP
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K069	Emission control dust/sludge from secondary lead smelting.—Calcium Sulfate (Low Lead) Subcategory.	Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
	Emission control dust/sludge from secondary lead smelting—Non-Calcium Sulfate (High Lead) Subcategory.	NA	NA	NA	RLEAD
K071	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used) nonwastewaters that are residues from RMERC.	Mercury	7439–97–6	NA	0.02 mg/l TCLP
	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used) nonwastewaters that are not residues from RMERC.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All K071 wastewaters	Mercury	7439–97–6	0.15	NA
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Hexachloroethane	67–72–1	0.055	30
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
K083	Distillation bottoms from aniline production	Aniline	62–53–3	0.81	14
		Benzene	71–43–2	0.14	10
		Cyclohexanone	108–94–1	0.36	NA

		Diphenylamine (difficult to distinguish from diphenylnitrosamine).	122–39–4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine).	86–30–6	0.92	13
		Nitrobenzene	98–95–3	0.068	14
		Phenol	108–95–2	0.039	6.2
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	Benzene	71–43–2	0.14	10
		Chlorobenzene	108–90–7	0.057	6.0
		m-Dichlorobenzene	541–73–1	0.036	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Total PCBs (sum of all PCB isomers, or all Aroclors).	1336–36–3	0.10	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K086	Solvent wastes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	Acetone	67–64–1	0.28	160
		Acetophenone	96–86–2	0.010	9.7
		bis(2-Ethylhexyl phthalate	117–81–7	0.28	28
		n-Butyl alcohol	71–36–3	5.6	2.6
		Butylbenzyl phthalate	85–68–7	0.017	28
		Cyclohexanone	108–94–1	0.36	NA
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Diethyl phthalate	84–66–2	0.20	28
		Dimethyl phthalate	131–11–3	0.047	28
		Di-n-butyl phthalate	84–74–2	0.057	28
		Di-n-octyl phthalate	117–84–0	0.017	28
		Ethyl acetate	141–78–6	0.34	33
		Ethylbenzene	100–41–4	0.057	10
		Menthanol	67–56–1	5.6	NA
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		Methylene chloride	75–09–2	0.089	30
		Naphthalene	91–20–3	0.059	5.6
		Nitrobenzene	98–95–3	0.068	14
		Toluene	108–88–3	0.080	10
		1,1,1-Trichloroethane	71–55–6	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
		Xylenes-mixed isomers (sum of o-,m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Cyanides (Total) [7]	57–12–5	1.2	590
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K087	Decanter tank tar sludge from coking operations	Acenaphthylene	208–96–8	0.059	3.4
		Benzene	71–43–2	0.14	10
		Chrysene	218–01–9	0.059	3.4
		Fluoranthene	206–44–0	0.068	3.4
		Indeno(1,2,3-cd)pyrene	193–39–5	0.0055	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K088	Spent potliners from primary aluminum reduction	Acenaphthene	83–32–9	0.059	3.4
		Anthracene	120–12–7	0.059	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene	205–99–2	0.11	6.8
		Benzo(k)fluoranthene	207–08–9	0.11	6.8
		Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Fluoranthene	206–44–0	0.068	3.4
		Indeno(1,2,3-c,d)pyrene	193–39–5	0.0055	3.4
		Phenanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Antimony	7440–36–0	1.9	2.1 mg/l TCLP
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Barium	7440–39–3	1.2	7.6 mg/l TCLP
		Beryllium	7440–41–7	0.82	0.014 mg/l TCLP
		Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Mercury	7439–97–6	0.15	0.025 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	0.82	0.16 mg/l TCLP
		Silver	7440–22–4	0.43	0.30 mg/l TCLP
		Cyanide (Total)	57–12–5	1.2	590
		Cyanide (Amenable)	57–12–5	0.86	30
		Fluoride	16984–48–8	35	48 mg/l TCLP
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	85–44–9	0.055	28

K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	Hexachloroethane	67–72–1	0.055	30
		Pentachloroethane	76–01–7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	m-Dichlorobenzene	541–73–1	0.036	6.0
		Pentachloroethane	76–01–7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
		1,1,2-Trichloroethane	79–00–5	0.054	6.0
		Trichloroethylene	79–01–6	0.054	6.0
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
		Heptachlor	76–44–8	0.0012	0.066
		Heptachlor epoxide	1024–57–3	0.016	0.066
		Hexachlorocyclopentadiene	77–47–4	0.057	2.4
K098	Untreated process wastewater from the production of toxaphene.	Toxaphene	8001–35–2	0.0095	2.6
K099	Untreated wastewater from the production of 2,4-D	2,4-Dichlorophenoxyacetic acid	94–75–7	0.72	10
		HxCDDs (All Hexachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans).	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans).	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins).	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans).	NA	0.000063	0.001
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitroaniline	88–74–4	0.27	14
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Cadmium	7440–43–9	0.69	NA
		Lead	7439–92–1	0.69	NA
		Mercury	7439–97–6	0.15	NA
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitrophenol	88–75–5	0.028	13
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Cadmium	7440–43–9	0.69	NA
		Lead	7439–92–1	0.69	NA
		Mercury	7439–97–6	0.15	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
K103	Process residues from aniline extraction from the production of aniline.	Aniline	62–53–3	0.81	14
		Benzene	71–43–2	0.14	10
		2,4-Dinitrophenol	51–28–5	0.12	160
		Nitrobenzene	98–95–3	0.068	14
		Phenol	108–95–2	0.039	6.2
K104	Combined wastewater streams generated from nitrobenzene/aniline production.	Aniline	62–53–3	0.81	14
		Benzene	71–43–2	0.14	10
		2,4-Dinitrophenol	51–28–5	0.12	160
		Nitrobenzene	98–95–3	0.068	14
		Phenol	108–95–2	0.039	6.2
		Cyanides (Total)[7]	57–12–5	1.2	590
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Benzene	71–43–2	0.14	10
		Chlorobenzene	108–90–7	0.057	6.0
		2-Chlorophenol	95–57–8	0.044	5.7
		o-Dichlorobenzene	95–50–1	0.088	6.0
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Phenol	108–95–2	0.039	6.2
		2,4,5-Trichlorophenol	95–95–4	0.18	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
K106	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439–97–6	NA	RMERC
	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain less than 260 mg/kg total mercury that are residues from RMERC.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	Other K106 nonwastewaters that contain less than 260 mg/kg total mercury and are not residues from RMERC.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All K106 wastewaters	Mercury	7439–97–6	0.15	NA
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K109	Spent filter cartridges from product purification from the production of 1,1-dimethyhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST

K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethyhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.	2,4-Dinitrotoluene	121–1–2	0.32	140
		2,6-Dinitrotoluene	606–20–2	0.55	28
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; or CMBST	CMBST
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; or CMBST	CMBST
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		NA	NA	CARBN; or CMBST	CMBST
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	NA	NA	CARBN; or CMBST	CMBST
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
		Chloroform	67–66–3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
K118	Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
		Chloroform	67–66–3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	Methyl bromide (Bromomethane)	74–83–9	0.11	15

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74–83–9	0.11	15
		Chloroform	67–66–3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
K140	Waste solids and filter cartridges from the production of 2,4,6-tribromophenol.	2,4,6-Tribromophenol	118–79–6	0.035	7.4
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–2–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Indeno(1,2,3–cd)pyrene	193–39–5	0.0055	3.4
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	50–32–8	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Indeno(1,2,3–cd)pyrene	193–39–5	0.0055	3.4
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4

	Benzo(a)pyrene	50–32–8	0.061	3.4	
	Benzo(b)fluoranthene (difficult to distinguish from benzo(k) fluoranthene).	205–99–2	0.11	6.8	
	Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8	
	Benzene	71–43–2	0.14	10	
	Chrysene	218–01–9	0.059	3.4	
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	Benz(a)anthracene	56–55–3	0.059	3.4
	Benzo(a)pyrene	50–32–8	0.061	3.4	
	Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8	
	Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8	
	Chrysene	218–01–9	0.059	3.4	
	Dibenz(a,h)anthracene	53–70–3	0.055	8.2	
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Benzene	71–43–2	0.14	10
	Benz(a)anthracene	56–55–3	0.059	3.4	
	Benzo(a)pyrene	50–32–8	0.061	3.4	
	Chrysene	218–01–9	0.059	3.4	
	Dibenz(a,h)anthracene	53–70–3	0.055	8.2	
	Naphthalene	91–20–3	0.059	5.6	
K147	Tar storage tank residues from coal tar refining	Benzene	71–43–2	0.14	10
	Benz(a)anthracene	56–55–3	0.059	3.4	
	Benzo(a)pyrene	50–32–8	0.061	3.4	
	Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8	
	Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8	
	Chrysene	218–01–9	0.059	3.4	
	Dibenz(a,h)anthracene	53–70–3	0.055	8.2	
	Indeno(1,2,3-cd)pyrene	193–39–5	0.0055	3.4	
K148	Residues from coal tar distillation, including, but not limited to, still bottoms.	Benz(a)anthracene	56–55–3	0.059	3.4
	Benzo(a)pyrene	50–32–8	0.061	3.4	
	Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8	
	Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8	
	Chrysene	218–01–9	0.059	3.4	
	Dibenz(a,h)anthracene	53–70–3	0.055	8.2	
	Indeno(1,2,3-cd)pyrene	193–39–5	0.0055	3.4	

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillations of benzyl chloride.).	Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		Toluene	108–88–3	0.080	10
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		p-Dichlorobenzene	106–46–7	0.090	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		1,1,2,2-Tetrachlorotehane	79–34–5	0.057	6.0
		Tetrachloroethylene	127–18–4	0.056	6.0
		1,2,4-Trichlorobenzene	120–82–1	0.055	19
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Benzene	71–43–2	0.14	10
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Hexachlorobenzene	118–74–1	0.055	10
		Pentachlorobenzene	608–93–5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
		Tetrachloroethylene	127–18–4	0.056	6.0
		Toluene	108–88–3	0.080	10
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.	Acetone	67–64–1	0.28	160
		Acetonitrile	75–05–8	5.6	1.8
		Acetophenone	96–86–2	0.010	9.7
		Aniline	62–53–3	0.81	14
		Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbaryl	63–25–21	0.006	0.14
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Hexane	110–54–3	0.611	10
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		Naphthalene	91–20–3	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyridine	110–86–1	0.014	16

		Toluene	108–88–3	0.080	10
		Triethylamine	121–44–8	0.081	1.5
		Xylenes (total)	1330–20–7	0.32	30
K157..	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.	Acetone	67–64–1	0.28	160
		Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		Methanol	67–56–1	5.6	0.75 mg/l TCLP
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Methyl isobutyl ketone	108–10–1	0.14	33
		o-Phenylenediamine	95–54–5	0.056	5.6
		Pyridine	110–86–1	0.014	16
		Triethylamine	121–44–8	0.081	1.5
K158..	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes.	Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chloroform	67–66–3	0.046	6.0
		Hexane	110–54–3	0.611	10
		Methanol	67–56–1	5.6	0.75 mg/l TCLP
		Methylene chloride	75–09–2	0.089	30
		Phenol	108–95–2	0.039	6.2
		Xylenes (total)	1330–20–7	0.32	30
K159..	Organics from the treatment of thiocarbamate wastes.	Benzene	71–43–2	0.14	10
		Butylate	2008–41–5	0.003	1.5
		EPTC (Eptam)	759–94–4	0.003	1.4
		Molinate	2212–67–1	0.003	1.4
		Pebulate	1114–71–2	0.003	1.4
		Thiocarbamate, N.O.S.	NA	0.003	1.4
		Vernolate	1929–77–7	0.003	1.4
K160..	Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes.	Butylate	2008–41–5	0.003	1.5
		EPTC (Eptam)	759–94–4	0.003	1.4
		Molinate	2212–67–1	0.003	1.4
		Pebulate	1114–71–2	0.003	1.4
		Thiocarbamate, N.O.S.	NA	0.003	1.4
		Toluene	108–88–3	0.080	10
		Vernolate	1929–77–7	0.003	1.4
		Xylenes (total)	1330–20–7	0.32	30
K161..	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts.	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
		Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
		Dithiocarbamates, total	NA	0.028	28
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	0.82	016 mg/l TCLP
		Xylenes (total)	1330–20–7	0.32	30
P001	Warfarin, & salts, when present at concentrations greater than 0.3%.	Warfarin	81–81–2	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
P002	1-Acetyl-2-thiourea	1-Acetyl-2-thiourea	591–08–2	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P003	Acrolein	Acrolein	107–02–8	0.29	CMBST
P004	Aldrin	Aldrin	309–00–2	0.021	0.066
P005	Allyl alcohol	Allyl alcohol	107–18–6	(WETOX or CHOXD) fb CARBN. or CBMST	CMBST
P006	Aluminum phosphide	Aluminum phosphide	20859–73–8	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P007	5-Aminomethyl e-isoxazoloe	5-Aminomethyl e-isoxazoloe	2763–96–4	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P008	4-Aminopyridine	4-Aminopyridine	504–24–5	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P009	Ammonium picrate	Ammonium picrate	131–74–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P010	Arsenic acid	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P011	Arsenic pentoxide	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P012	Arsenic trioxide	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P013	Barium cyanide	Barium	7440–39–3	NA	7.6 mg/l TCLP
		Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P014	Thiophenol (Benzene thiol)	Thiophenol (Benzene thiol)	108–98–5	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P015	Beryllium dust	Beryllium	7440–41–7	RMETL, or RTHRM	RMETL; or RTHRM
P016	Dichloromethyl ether (Bis(chloromethyl)ether)	Dichloromethyl ether	542–88–1	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P017	Bromoacetone	Bromoacetone	598–31–2	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P018	Brucine	Brucine	357–57–3	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST

P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	2-sec-Butyl-4,6-dinitrophenol (Dinoseb).	88–85–7	0.066	2.5
P021	Calcium cyanide	Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
P022	Carbon disulfide	Carbon disulfide	75–15–0	3.8	CMBST
		Carbon disulfide; alternate [6] standard for nonwastewaters only.	75–15–0	NA	4.8 mg/l TCLP
P023	Choloracetaldehyde	Choloracetaldehyde	107–20–0	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P024	p-Chloroaniline	p-Chloroaniline	106–47–8	0.46	16
P026	1-(o-Cholorphenyl)thiourea	1-(o-Cholorphenyl)thiourea	5344–82–1	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P027	3-Chloropropionitrile	3-Chloropropionitrile	542–76–7	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P028	Benzyl chloride	Benzyl chloride	100–44–7	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P029	Copper cyanide	Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
P030	Cyanides (soluble salts and complexes)	Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
P031	Cyanogen	Cyanogen	460–19–5	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P033	Cyanogen chloride	Cyanogen chloride	506–77–4	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P034	2-Cyclohexly-4,6-dinitrophenol	2-Cyclohexly-4,6-dinitrophenol	131–89–5	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P036	Dichlorophenylarsine	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
P037	Dieldrin	Dieldrin	60–57–1	0.017	0.13
P038	Diethylarsine	Arsenic	7440–38–2	1.4	50 mg/l TCLP
P039	Disulfoton	Disulfoton	298–04–4	0.017	6.2
P040	0,0-Diethyl O-pyrazinyl phosphorothioate	0,0-Diethyl O-pyrazinyl phosphorothioate.	297–97–2	CARBN; or CMBST	CMBST
P041	Diethyl-p-nitrophenyl phosphate	Diethyl-p-nitrophenyl phosphate	311–45–5	CARBN; or CMBST	CMBST
P042	Epinephrine	Epinephrine	51–43–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P043	Diisopropylfluorophosphate (DFP)	Diisopropylfluorophosphate (DFP)	55–91–4	CARBN; or CMBST	CMBST
P044	Dimethoate	Dimethoate	60–51–5	CARBN; or CMBST	CMBST
P045	Thiofanox	Thiofanox	39196–18–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
P046	alpha, alpha-Dimethylphenethylamine	alpha, alpha-Dimethylphenethylamine.	122–09–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P047	4,6-Dinitro-o-cresol	4,6-Dinitro-o-cresol	543–52–1	0.28	160
	4,6-Dinitro-o-cresol salts	NA	NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P048	2,4-Dinitrophenol	2,4-Dinitrophenol	51–28–5	0.12	160
P049	Dithiobiuret	Dithiobiuret	541–53–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P050	Endosulfan	Endosulfan I	939–98–8	0.023	0.066
		Endosulfan II	33213–6–5	0.029	0.13
		Endosulfan sulfate	1031–07–8	0.029	0.13
P051	Endrin	Endrin	72–20–8	0.0028	0.13
		Endrin aldehyde	7421–93–4	0.025	0.13
P054	Aziridine	Aziridine	151–56–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P056	Fluorine	Fluorine (measured in wastewaters only).	16964–48–8	35	ADGAS fb NEUTR
P057	Fluoroacetamide	Fluoroacetamide	640–19–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P058	Fluoroacetic acid, sodium salt	Fluoroacetic acid, sodium salt	62–74–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P059	Heptachlor	Heptachlor	76–44–8	0.0012	0.066
		Heptachlor epoxide	1024–57–3	0.016	0.066
P060	Isodrin	Isodrin	465–73–6	0.021	0.066
P062	Hexaethyl tetraphosphate	Hexaethyl tetraphosphate	757–58–4	CARBN; or CMBST	CMBST
P063	Hydrogen cyanide	Cyandies (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
P064	Isocyanic acid, ethyl ester	Isocyanic acid, ethyl ester	624–83–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P065	Mercury fulminate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439–97–6	NA	IMERC

	Mercury fulminate nonwastewaters that are either incinerator residues or are residues from RMERC; and contain greater than or equal to 260 mg/kg total mercury.	Mercury	7339–97–6	NA	RMERC
	Mercury fulminate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	Mercury fulminate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All mercury fulminate wastewaters	Mercury	7439–97–6	0.15	NA
P066	Methomyl	Methomyl	16752–77–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P067	2-Methyl-aziridine	2-Methyl-aziridine	75–55–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P068	Methyl hydrazine	Methyl hydrazine	60–34–4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P069	2-Methyllactonitrile	2-Methyllactonitrile	75–86–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P070	Aldicarb	Aldicarb	116–06–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P071	Methyl parathion	Methyl parathion	298–00–0	0.014	4.6
P072	1-Naphthyl–2–thiourea	1-Naphthyl–2–thiourea	86–88–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P073	Nickel carbonyl	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
P074	Nickel-cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Total)[7]	57–12–5	0.86	30
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
P075	Nicotine and salts	Nicotine and salts	54–11–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P076	Nitric oxide	Nitric oxide	10102–43–9	ADGAS	ADGAS
P077	p-Nitroaniline	p-Nitroaniline	100–01–6	0.028	28
P078	Nitrogen dioxide	Nitrogen dioxide	10102–44–0	ADGAS	ADGAS
P081	Nitroglycerin	Nitroglycerin	55–63–0	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P082	N-Nitrosodimethylamine	N-Nitrosodimethylamine	62–75–9	0.40	2.3
P084	N-Nitrosomethylvinylamine	N-Nitrosomethylvinylamine	4549–40–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P085	Octamethylpyrophosphoramide	Octamethylpyrophosphoramide	152–16–9	CARBN; OR CMBST	CMBST
P087	Osmium tectroxide	Osmium tectroxide	20816–12–0	RMETL; or RTHRM	RMETL; or RTHRM

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
P088	Endothall	Endothall	145–73–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P089	Parathion	Parathion	56–38–2	0.014	4.6
P092	Phenyl mercuric acetate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439–97–6	NA	IMERC; or RMERC
	Phenyl mercuric acetate nonwastewaters that are either incinerator residues or are residues from RMERC; and still contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439–97–6	NA	RMERC
	Phenyl mercuric acetate nonwastewaters that are residues from RMERC and contain less than 160 mg/kg total mercury.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	Phenyl mercuric acetate nonwastewaters that are incinerator residues and contain less then 260 mg/kg total mercury.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All phenyl mercuric acetate wastewaters.	Mercury	7439–97–6	0.15	NA
P093	Phenythiouea	Phenythiouea	103–85–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P094	Phorate	Phorate	298–02–2	0.021	4.6
P095	Phosgene	Phosgene	75–44–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P096	Phosphine	Phosphine	7803–51–2	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P097	Famphur	Famphur	52–85–7	0.017	15
P098	Potassium cyanide.	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	.086	30
	Potasslum silver cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
P099		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Silver	7440–22–4	.043	0.30 mg/l TCLP
P0101	Ethyl cyanide (Propanenitrile)	Ethyl cyanide (Propanenitrile)	107–12–0	0.24	360
P0102	Propargyl alcohol	Propargyl alcohol	107–19–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P0103	Selenourea	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
P0104	Silver cyanide	Cyanides (Total)[7]	57–12–5	1.2	590
		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Silver	7440–22–4	0.43	0.30 mg/l TCLP

P0105	Sodium azide	Sodium azide	26628–22–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P0106	Sodium cyanide	Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
P0108	Strychnine and salts	Strychnine and salts	57–24–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P109	Tetraethyldithiopyrophosphate	Tetraethyldithiopyrophosphate	3689–24–5	CARBN; or CMBST	CMBST
P110	Tetraethyl lead	Lead	7439–92–1	0.69	0.37 mg/l TCLP
P111	Tetraethylpyrophosphate	Tetraethylpyrophosphate	107–49–3	CARBN; or CMBST	CMBST
P112	Tetranitromethane	Tetranitromethane	509–14–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P113	Thallic oxide	Thallium (measured in waste-waters only).	7440–28–0	1.4	RTHRM; or STABL
P114	Thallium selenite	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
P115	Thallium (I) sulfate	Thallium (measured in waste-waters only).	7440–28–0	1.4	RTHRM; or STABL
P116	Thiosemicarbazide	Thiosemicarbazide	79–19–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P118	Trichloromethanethiol	Trichloromethanethiol	75–70–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P119	Ammonium vanadate	Vanadium (measured in waste-waters only).	7440–62–2	4.3	STABL
P120	Vandium pentoxide	Vanadium (measured in waste-waters only).	7440–62–2	4.3	STABL
P121	Zinc cyanide	Cyanides (Total) [7]	57–12–5	1.2	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
P122	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%.	Zinc Phosphide	1314–84–7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P123	Toxaphene	Toxaphene	8001–35–2	0.0095	2.6
P127	Carbofuran	Carbofuran	1563–66–2	0.006	0.14
P128	Mexacarbate	Mexacarbate	315–18–4	0.056	1.4
P185	Tirpate	Tirpate	26419–73–8	0.056	0.28
P187	Bendiocarb	Bendiocarb	22781–23–3	0.056	1.4
P188	Physostigimine salicylate	Physostigmine salicylate	57–64–7	0.056	1.4
P189	Carbosulfan	Carbosulfan	55285–14–8	0.028	1.4
P190	Metolcarb	Metolcarb	1129–41–5	0.056	1.4
P191	Dimetilan	Dimetilan	644–64–4	0.056	1.4
P192	Isolan	Isolan	119–38–0	0.056	1.4
P193	Thiophanate-methyl	Thiophanate-methyl	23564–05–8	0.056	1.4
P194	Oxamyl	Oxamyl	23135–22–0	0.056	0.28
P195	Thiodicarb	Thiodicarb	59669–26–0	0.019	1.4
P196	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
P197	Formparanate	Formparanate	17702–57–7	0.056	1.4
P198	Formetanate hydrochloride	Formetanate hydrochloride	23422–53–9	0.056	1.4
P199	Methiocarb	Methiocarb	2032–65–7	0.056	1.4
P200	Propoxur	Propoxur	114–26–1	0.056	1.4
P201	Promecarb	Promecarb	2631–37–0	0.056	1.4
P202	Hercules AC–5727	Hercules AC–5727	64–00–6	0.056	1.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
P203	Aldicarb sulfone	Aldicarb sulfone	1646–88–4	0.056	0.28
P204	Physostigmine	Physostigmine	57–47–6	0.056	1.4
P205	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U001	Acetaldehyde	Acetaldehyde	75–07–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U002	Acetone	Acetone	67–64–1	0.28	160
U003	Acetonitrile	Acetonitrile	75–05–8	5.6	CMBST
		Acetonitrile; alternate[6] standard for nonwastewaters only.	75–05–8	NA	1.8
U004	Acetophenone	Acetophenone	98–86–2	0.010	9.7
U005	2-Acetylaminofluorene	2-Acetylaminofluorene	53–96–3	0.059	140
U006	Acetyl chloride	Acetyl Chloride	75–36–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U007	Acrylamide	Acrylamide	79–06–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U008	Acrylic acid	Acrylic acid	79–10–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U009	Acrylonitrile	Acrylonitrile	107–13–1	0.24	84
U010	Mitomycin C	Mitomycin C	50–07–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U011	Amitrole	Amitrole	61–82–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U012	Aniline	Aniline	62–53–3	0.81	14
U014	Auramine	Auramine	492–80–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U015	Azaserine	Azaserine	115–02–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U016	Benz(c)acridine	Benz(c)acridine	225–51–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U017	Benzal chloride	Benzal chloride	98–87–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U018	Benz(a)anthracene	Benz(a)anthracene	56–55–3	0.059	3.4
U019	Benzene	Benzene	71–43–2	0.14	10
U020	Benzenesulfonyl chloride	Benzenesulfonyl chloride	98–09–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U021	Benzidine	Benzidine	92–87–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U022	Benzo(a)pyrene	Benzo(a)pyrene	50–32–8	0.061	3.4
U023	Benzotrichloride	Benzotrichloride	98–07–7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U024	bis(2-Chloroethoxy)methane	bis(2-Chloroethoxy)methane	111–91–1	0.036	7.2
U025	bis(2-Chloroethyl)ether	bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
U026	Chlornaphazine	Chlornaphazine	494–03–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U027	bis(2-Chloroisopropyl)ether	bis(2-Chloroisopropyl)ether	39638–32–9	(WETOX or CHOXD) fb CARBN; or CMBST	7.2
U028	bis(2-Ethylhexyl) phthalate	bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
U029	Methyl bromide (Bromomethane)	Methyl bromide (Bromomethane)	74–83–9	0.11	15
U030	4-Bromophenyl phenyl ether	4-Bromophenyl phenyl ether	101–55–3	0.055	15
U031	n-Butyl alcohol	n-Butyl alcohol	71–36–3	5.6	2.6
U032	Calcium chromate	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
U033	Carbon oxyfluoride	Carbon oxyfluoride	353–50–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U034	Trichloroacetaldehyde (Chloral)	Trichloroacetaldehyde (Chloral)	75–87–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U035	Chlorambucil	Chlorambucil	305–03–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U036	Chlordane	Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26
U037	Chlorobenzene	Chlorobenzene	108–90–7	0.057	6.0
U038	Chlorobenzilate	Chlorobenzilate	510–15–6	0.10	CMBEST
U039	p-Chloro-m-cresol	p-Chloro-m-cresol	59–50–7	0.018	14
U041	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	Epichlorohydrin (1-Chloro-2,3-epoxypropane).	106–89–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U042	2-Chloroethyl vinyl ether	2-Chloroethyl vinyl ether	110–75–8	0.062	CMBST
U043	Vinyl chloride	Vinyl chloride	75–01–4	0.27	6.0
U044	Chloroform	Chloroform	67–66–3	0.046	6.0
U045	Chloromethane (Methyl chloride)	Chloromethane (Methyl chloride)	74–87–3	0.19	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
U046	Chloromethyl methyl ether	Chloromethyl methyl ether	107–30–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U047	2-Chloronaphthalene	2-Chloronaphthalene	91–58–7	0.055	5.6
U048	2-Chlorophenol	2-Chlorophenol	95–57–8	0.044	5.7
U049	4-Chloro-o-toluidine hydrochloride	4-Chloro-o-toluidine hydrochloride	3165–93–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U050	Chrysene	Chrysene	218–01–9	0.059	3.4
U051	Creosote	Naphthalene	91–20–3	0.059	5.6
		Pentachlorophenol	87–86–5	0.089	7.4
		Phenanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Toluene	108–88–3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
U052	Cresols (Cresylic acid)	o-Cresol	95–48–7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations).	1319–77–3	0.88	11.2
U053	Crotonaldehyde	Crotonaldehyde	4170–30–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U055	Cumene	Cumene	98–82–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U056	Cyclohexane	Cyclohexane	110–82–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U057	Cyclohexanone	Cyclohexanone	108–94–1	0.36	CMBST
		Cyclohexanone; alternate[6] standard for nonwastewaters only.	108–94–1	NA	0.75 mg/l TCLP
U058	Cyclophosphamide	Cyclophosphamide	50–18–0	CARBN; or CMBST	CMBST

U059	Daunomycin	Daunomycin	20830–81–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U060	DDD	o,p'-DDD	53–19–0	0.023	0.087
		p,p'-DDD	72–54–8	0.023	0.087
U061	DDT	o,p'-DDT	789–02–6	0.0039	0.087
		p,p'-DDT	50–29–3	0.0039	0.087
		o,p'-DDD	53–19–0	0.023	0.087
		p,p'-DDD	72–54–8	0.023	0.087
		o,p'-DDE	3424–82–6	0.031	0.087
		p,p'-DDE	72–55–9	0.031	0.087
U062	Diallate	Diallate	2303–16–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U063	Dibenz(a,h)anthracene	Dibenz(a,h)anthracene	53–70–3	0.055	8.2
U064	Dibenz(a,i)pyrene	Dibenz(a,i)pyrene	189–55–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U066	1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	96–12–8	0.11	15
U067	Ethylene dibromide (1,2-Dibromoethane)	Ethylene dibromide (1,2-Dibromoethane).	106–93–4	0.028	15
U068	Dibromomethane	Dibromomethane	74–95–3	0.11	15
U069	Di-n-butyl phthalate	Di-n-butyl phthalate	84–74–2	0.057	28
U070	o-Dichlorobenzene	o-Dichlorobenzene	95–50–1	0.088	6.0
U071	m-Dichlorobenzene	m-Dichlorobenzene	541–73–1	0.036	6.0
U072	p-Dichlorobenzene	p-Dichlorobenzene	106–46–7	0.090	6.0
U073	3,3'-Dichlorobenzidine	3,3'-Dichlorobenzidine	91–94–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U074	1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1476–11–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		trans-1,4-Dichloro-2-butene	764–41–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U075	Dichlorodifluoromethane	Dichlorodifluoromethane	75–71–8	0.23	7.2
U076	1,1-Dichloroethane	1,1-Dichloroethane	75–34–3	0.059	6.0
U077	1,2-Dichloroethane	1,2-Dichloroethane	107–06–2	0.21	6.0
U078	1,1-Dichloroethylene	1,1-Dichloroethylene	75–35–4	0.025	6.0
U079	1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156–60–5	0.054	30
U080	Methylene chloride	Methylene chloride	75–09–2	0.089	30
U081	2,4-Dichlorophenol	2,4-Dichlorophenol	120–83–2	0.044	14
U082	2,6-Dichlorophenol	2,6-Dichlorophenol	87–65–0	0.044	14
U083	1,2-Dichloropropane	1,2-Dichloropropane	78–87–5	0.85	18
U084	1,3-Dichloroproplyene	cis-1,3-Dichloroproplyene	10061–01–5	0.036	18
		trans-1,3-Dichloroproplyene	10061–02–6	0.036	18
U085	1,2:3,4-Diepoxybutane	1,2:3,4-Diepoxybutane	1464–53–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
U086	N,N′-Diethylhydrazine	N,N′-Diethylhydrazine	1615–80–1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U087	O,O-Diethyl S-methyldithiophosphate	O,O-Diethyl S-methyldithiophosphate.	3288–58–2	CARBN; CMBST	CMBST
U088	Diethyl phthalate	Diethyl phthalate	84–66–2	0.20	28
U089	Diethyl stilbestrol	Diethyl stilbestrol	56–53–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U090	Dihydrosafrole	Dihydrosafrole	94–58–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U091	3,3′-Dimethoxybenzidine	3,3′-Dimethoxybenzidine	119–90–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U092	Dimethylamine	Dimethylamine	124–40–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U093	p-Dimethylaminoazobenzene	p-Dimethylaminoazobenzene	60–11–7	0.13	CMBST
U094	7,12-Dimethylibenz(a)anthracene	7,12-Dimethylbenz(a)anthracene	57–97–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST CMBST
U095	3,3′-Dimethylbenzidine	3,3′-Dimethylbenzidine	119–93–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U096	alpha, alpha-Dimethyl benzyl hydroperoxide	alpha, alpha-Dimethyl benzyl hydroperoxide.	80–15–9	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U097	Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79–44–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U098	1,1-Dimethylhydrazine	1,1-Dimethylhydrazine	57–14–7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST

U099	1,2-Dimethylhydrazine	1,2-Dimethylhydrazine	540–73–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
				CHOXD, CHRED; or CMBST	
U101	2,4-Dimethylphenol	2,4-Dimethylphenol	105–67–9	0.036	14
U102	Dimethyl phthalate	Dimethyl phthalate	131–11–3	0.047	28
U103	Dimethyl sulfate	Dimethyl sulfate	77–78–1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U105	2,4-Dinitrotoluene	2,4-Dinitrotoluene	121–14–2	0.32	140
U106	2,6-Dinitrotoluene	2,6-Dinitrotoluene	606–20–2	0.55	28
U108	1,4-Dioxane	1,4-Dioxane	123–91–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		1,4-Dioxane; alternate [6] standard for nonwastewaters only.	123–91–1	NA	170
U109	1,2-Diphenylhydrazine	1,2-Diphenylhydrazine	122–66–7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
		1,2-Diphenylhydrazine; alternate [6] standard for wastewaters only.	122–66–7	0.087	NA
U110	Dipropylamine	Dipropylamine	142–84–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U111	Di-n-propylnitrosamine	Di-n-propylnitrosamine	621–64–7	0.40	14
U112	Ethyl acetate	Ethyl acetate	141–78–6	0.34	33
U113	Ethyl acrylate	Ethyl acrylate	140–88–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U114	Ethylenebisdithiocarbamic acid salts and esters	Ethylenebisdithiocarbamic acid	111–54–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U115	Ethylene oxide	Ethylene oxide	75–21–8	(WETOX or CHOXD) fb CARBN; or CMBST	CHOXD; or CMBST
		Ethylene oxide; alternate [6] standard for wastewaters only.	75–21–8	0.12	NA
U116	Ethylene thiourea	Ethylene thiourea	96–45–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U117	Ethyl ether	Ethyl ether	60–29–7	0.12	160
U118	Ethyl methacrylate	Ethyl methacrylate	97–63–2	0.14	160
U119	Ethyl methane sulfonate	Ethyl methane sulfonate	62–50–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U120	Fluoranthene	Fluoranthene	206–44–0	0.068	3.4
U121	Trichloromonofluoromethane	Trichloromonofluoromethane	75–69–4	0.020	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
U122	Formaldehyde	Formaldehyde	50–00–0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U123	Formic acid	Formic acid	64–18–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U124	Furan	Furan	110–00–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U125	Furfural	Furfural	98–01–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U126	Glycidylaldehyde	Glycidylaldehyde	765–34–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U127	Hexachlorobenzene	Hexachlorobenzene	118–74–1	0.055	10
U128	Hexachlorobutadiene	Hexachlorobutadiene	87–68–3	0.055	5.6
U129	Lindane	alpha-BHC	319–84–6	0.00014	0.066
		beta-BHC	319–85–7	0.00014	0.066
		delta-BHC	319–86–8	0.023	0.066
		gamma-BHC (Lindane)	58–89–9	0.0017	0.066
U130	Hexachlorocyclopentadiene	Hexachlorocyclopentadiene	77–47–4	0.057	2.4
U131	Hexachloroethane	Hexachloroethane	67–72–1	0.055	30
U132	Hexachlorophene	Hexachlorophene	70–30–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U133	Hydrazine	Hydrazine	302–01–2	CHOXD; CHRED; CARBN; DIODG; or CMBST	CHOXD; CHRED; or CMBST
U134	Hydrogen fluoride	Fluoride (measured in wastewaters only).	16964–48–8	35	ADGAS fb NEUTR; or NEUTR
U135	Hydrogen Sulfide	Hydrogen Sulfide	7783–06–4	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U136	Cacodylic acid	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
U137	Indeno(1,2,3-c,d)pyrene	Indeno(1,2,3-c,d)pyrene	193–39–5	0.0055	3.4
U138	Iodomethane	Iodomethane	74–88–4	0.19	65
U140	Isobutyl alcohol	Isobutyl alcohol	78–83–1	5.6	170
U141	Isosafrole	Isosafrole	120–58–1	0.081	2.6
U142	Kepone	Kepone	143–50–8	0.0011	0.13

U143	Lasiocarpine	Lasiocarpine	303–34–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U144	Lead acetate	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U145	Lead phosphate	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U146	Lead subacetate	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U147	Maleic anhydride	Maleic anhydride	108–31–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U148	Maleic hydrazide	Maleic hydrazide	123–33–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U149	Malononitrile	Malononitrile	109–77–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U150	Melphalan	Melphalan	148–82–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U151	U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439–97–6	NA	RMERC
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are residues from RMERC only.	Mercury	7439–97–6	NA	0.20 mg/l TCLP
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are not residues from RMERC.	Mercury	7439–97–6	NA	0.025 mg/l TCLP
	All U151 (mercury) wastewaters	Mercury	7439–97–6	0.15	NA
	Elemental Mercury Contaminated with Radioactive materials.	Mercury	7439–97–6	NA	AMLGM
U152	Methacrylonitrile	Methacrylonitrile	126–98–7	0.24	84
U153	Methanethiol	Methanethiol	74–93–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U154	Methanol	Methanol	67–56–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Methanol, alternate [6] set of standards for both wastewaters and nonwastewaters.	67–56–1	5.6	0.75 mg/l TCLP
U155	Methapyrilene	Methapyrilene	91–80–5	0.081	1.5
U156	Methyl chlorocarbonate	Methyl chlorocarbonate	79–22–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U157	3-Methylcholanthrene	3-Methylcholanthrene	56–49–5	0.0055	15
U158	4,4'-Methylene bis(2-chloroaniline)	4,4'-Methylene bis(2-chloroaniline)	101–14–4	0.50	30
U159	Methyl ethyl ketone	Methyl ethyl ketone	78–93–3	0.28	36
U160	Methyl ethyl ketone peroxide	Methyl ethyl ketone peroxide	1338–23–4	CHOXD; CHRED; CARBN; BIODG; OR CMBST	CHOXD; CHRED; OR CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
U161	Methyl isobutyl ketone	Methyl isobutyl ketone	108–10–1	0.14	33
U162	Methyl methacrylate	Methyl methacrylate	80–62–6	0.14	160
U163	N-Methyl N'-nitro N-nitrosoguanidine	N-Methyl N'-nitro N-nitrosoguanidine.	70–25–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U164	Methylthiouracil	Methylthiouracil	56–04–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U165	Naphthalene	Naphthalene	91–20–3	0.059	5.6
U166	1,4-Naphthoquinone	1,4-Naphthoquinone	130–15–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U167	1-Naphthlyamine	1-Naphthlyamine	134–32–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U168	2-Naphthlyamine	2-Naphthlyamine	91–59–8	0.52	CMBST
U169	Nitrobenzene	Nitrobenzene	98–95–3	0.068	14
U170	p-Nitrophenol	p-Nitrophenol	100–02–7	0.12	29
U171	2-Nitropropane	2-Nitropropane	79–46–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U172	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-butylamine	924–16–3	0.40	17
U173	N-Nitrosodiethylamine	N-Nitrosodiethanolamine	1116–54–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U174	N-Nitrosodiethanolamine	N-Nitrosodiethylamine	55–18–5	0.40	28
U176	N-Nitroso-N-ethylurea	N-Nitroso-N-ethylurea	759–73–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U177	N-Nitroso-N-methylurea	N-Nitroso-N-methylurea	684–93–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U178	N-Nitroso-N-methylurethane	N-Nitroso-N-methylurethane	615–53–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U179	N-Nitrosopiperidine	N-Nitrosopiperidine	100–75–4	0.013	35
U180	N-Nitrosopyrrolidine	N-Nitrosopyrrolidine	930–55–2	0.013	35
U181	5-Nitro-o-toluidine	5-Nitro-o-toluidine	99–55–8	0.32	28

U182	Paraldehyde	Paraldehyde	123–63–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U183	Pentachlorobenzene	Pentachlorobenzene	608–93–5	0.055	10
U184	Pentachloroethane	Pentachloroethane	76–01–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Pentachloroethane; alternate [6] standards for both wastewaters and nonwastewaters.	76–01–7	0.055	6.0
U185	Pentachloronitrobenzene	Pentachloronitrobenzene	82–68–8	0.055	4.8
U186	1,3-Pentadiene	1,3-Pentadiene	504–60–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U187	Phenacetin	Phenacetin	62–44–2	0.081	16
U188	Phenol	Phenol	108–95–2	0.039	6.2
U189	Phosphorus sulfide	Phosphorus sulfide	1314–80–3	CHOXD, CHRED, or CMBST	CHOXD, CHRED, or CMBST
U190	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid).	100–21–0	0.055	28
		Phthalic anhydride	85–44–9	0.055	28
U191	2-Picoline	2-Picoline	109–06–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U192	Pronamide	Pronamide	23950–58–5	0.093	1.5
U193	1,3-Propane sultone	1,3-Propane sultone	1120–71–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U194	n-Propylamine	n-Propylamine	107–10–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U196	Pyridine	Pyridine	110–86–1	0.014	16
U197	p-Benzoquinone	p-Benzoquinone	106–51–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U200	Reserpine	Reserpine	50–55–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U201	Resorcinol	Resorcinol	108–46–3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U202	Saccharin and salts	Saccharin	81–07–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U203	Safrole	Safrole	94–59–7	0.081	22
U204	Selenium dioxide	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
U205	Selenium sulfide	Selenium	7782–49–2	0.82	0.16 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
U206	Streptozotocin	Streptozotocin	18883–66–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U207	1,2,4,5-Tetrachlorobenzene	1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
U208	1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
U209	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79–34–5	0.057	6.0
U210	Tetrachloroethylene	Tetrachloroethylene	127–18–4	0.056	6.0
U211	Carbon tetrachloride	Carbon tetrachloride	56–23–5	0.057	6.0
U213	Tetrahydrofuran	Tetrahydrofuran	109–99–9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U214	Thallium (I) acetate	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U215	Thallium (I) carbonate	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U216	Thallium (I) chloride	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U217	Thallium (I) nitrate	Thallium (measured in wastewaters only).	7440–28–0	1.4	RTHRM; or STABL
U218	Thioacetamide	Thioacetamide	62–55–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U219	Thiourea	Thiourea	62–56–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U220	Toluene	Toluene	108–83–3	0.080	10
U221	Toluenediamine	Toluenediamine	25376–45–8	CARBN; or CMBST	CMBST
U222	o-Toluidine hydrochloride	o-Toluidine hydrochloride	636–21–5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U223	Toluene diisocyanate	Toluene diisocyanate	26471–62–5	CARBN; or CMBST	CMBST
U225	Bromoform (Tribromomethane)	Bromoform (Tribromomethane)	75–25–2	0.63	15
U226	1,1,1-Trichloroethane	1,1,1-Trichloroethane	71–55–6	0.054	6.0
U227	1,1,2-Trichloroethane	1,1,2-Trichloroethane	79–00–5	0.054	6.0
U228	Trichloroethylene	Trichloroethylene	79–01–6	0.054	6.0
U234	1,3,5-Trinitrobenzene	1,3,5-Trinitrobenzene	99–35–4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

U235	tris-(2,3-Dibromoprophyl)-phosphate	tris-(2,3-Dibromoprophyl)-phosphate.	126–72–7	0.11	0.10
U236	Trypan Blue	Trypan Blue	72–57–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U237	Uracil mustard	Uracil mustard	66–75–1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U238	Urethane (Ethyl carbamate)	Urethane (Ethyl carbamate)	51–79–6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U239	Xylenes	Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations).	1330–20–7	0.32	30
U240	2,4-D (2,4-Dichlorophenoxyacetic acid)	2,4–D (2,4-Dichlorophenoxyacetic acid).	94–75–7	0.72	10
	2,4-D (2,4-Dichlorophenoxyacetic acid) salts and esters.		NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U243	Hexachloropropylene	Hexachloropropylene	1888–71–7	0.035	30
U244	Thiram	Thiram	137–26–8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U246	Cyanogen bromide	Cyanogen bromide	506–68–3	CHOXD; WETOX; or CMBST	CHOXD, WETOX; or CMBST
U247	Methoxychlor	Methoxychlor	72–43–5	0.25	0.18
U248	Warfarin, & salts, when present at concentrations of 0.3% or less.	Warfarin	81–81–2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U249	Zinc phosphide, Zn_3P_2, when present at concentrations of 10% or less.	Zinc Phosphide	1314–84–7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U271	Benomyl	Benomyl	17804–35–2	0.056	1.4
U277	Sulfallate	Sulfallate	95–06–7	0.056	1.4
U279	Carbaryl	Carbaryl	63–25–2	0.006	0.14
U280	Barban	Barban	101–27–9	0.056	1.4
U328	o-Toluidine	o-Toluidine	95–53–4	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN.	CMBST
U353	p-Toluidine	p-Toluidine	106–49–0	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN.	CMBST
U359	2-Ethoxyethanol	2-Ethoxyethanol	110–80–5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
U360	Carbamates, N.O.S	Carbamates, N.O.S	NA	0.056	1.4
U361	Carbamoyl Oximes, N.O.S	Carbamoyl Oximes, N.O.S	NA	0.056	0.28
U362	Thiocarbamates, N.O.S	Thiocarbamates, N.O.S	NA	0.003	1.4
U363	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Antimony	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
	Lead	Lead	7439–92–1	0.69	0.37 mg/l TCLP
	Nickel	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
	Selenium	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
U364	Bendiocarb phenol	Bendiocarb phenol	22961–82–6	0.056	1.4
U365	Molinate	Molinate	2212–67–1	0.003	1.4
U366	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U367	Carbofuran phenol	Carbofuran phenol	1563–38–8	0.056	1.4
U368	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Antimony	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
U369	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Antimony	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
U370	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U371	Hexazinone intermediate	Hexazinone intermediate	65086–85–3	0.056	1.4
U372	Carbendazim	Carbendazim	10605–21–7	0.056	1.4
U373	Propham	Propham	122–42–9	0.056	1.4
U374	U9069	U9069	112006–94–7	0.056	1.4
U375	Troysan Polyphase	Troysan Polyphase	55406–53–6	0.056	1.4
U376	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Selenium	Selenium	7782–49–2	0.82	0.16 mg/l TCLP
U377	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U378	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U379	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U380	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U381	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U382	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U383	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U384	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U385	Vernolate	Vernolate	1929–77–7	0.003	1.4
U386	Cycloate	Cycloate	1134–23–2	0.003	1.4
U387	Prosulfocarb	Prosulfocarb	52888–80–9	0.003	1.4
U388	Esprocarb	Esprocarb	85785–20–2	0.003	1.4
U389	Triallate	Triallate	2303–17–5	0.003	1.4
U390	Eptam	Eptam	759–94–4	0.003	1.4
U391	Pebulate	Pebulate	1114–71–2	0.003	1.4
U392	Butylate	Butylate	2008–41–5	0.003	1.4
U393	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U394	A2213	A2213	30558–43–1	0.003	1.4
U395	Reactacrease 4–DEG	Reactacrease 4–DEG	5952–26–1	0.056	1.4
U396	Ferbam	Ferbam	14484–64–1	0.056	1.4
U397	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Lead	Lead	7439–92–1	0.69	0.37 mg/l TCLP
U398	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28

U399	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
	Nickel	Nickel	7440–02–0	3.98	5.0 mg/l TCLP
U400	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U401	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U402	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U403	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U404	Triethylamine	Triethylamine	121–44–8	0.081	1.5
U405	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U406	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U407	Dithiocarbamates (total)	Dithiocarbamates (total)	NA	0.028	28
U408	2,4,6-Tribromophenol	2,4,6-Tribromophenol	118–79–6	0.035	7.4

Notes to Table:

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish betweenapplicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[6] Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[8] As an alternative to these standards, the underlying hazardous constituents in the waste must meet a CWA limitation, which can include a toxic pollutant indicator for the constituent; Pretreatment Standards for Existing Sources; Pretreatment Standards for New Sources; local limitations based upon a pass-through determination; or a Fundamentally Different Factors variance under 40 CFR 125.30–125.32.

17. In § 268.42 Table 1. is amended by revising the entry ''CMBST'' to read as follows:

§ 268.42 Treatment standards expressed as specified technologies.

* * * * *

TABLE 1.—TECHNOLOGY CODES AND DESCRIPTION OF TECHNOLOGY-BASED STANDARDS

Technology code	Description of technology-based standards
* * * * * * *	
CMBST:	High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or 40 CFR part 266, subpart H, and in other units operated in accordance with applicable technical operating requirements; and certain non-combustive technologies, such as the Catalytic Extraction Process.
* * * * * * *	

* * * * *

18. Section 268.44 is amended by revising paragraph (a) to read as follows:

§ 268.44 Variance from a treatment standard.

(a) Where the treatment standard is expressed as a concentration in a waste or waste extract and a waste cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or treatment facility may petition the Administrator for a variance from the treatment standard. The petitioner must demonstrate that because the physical or chemical properties of the waste differs significantly from wastes analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods. The petitioner may also demonstrate that it is treating underlying hazardous constituents in characteristically hazardous wastewaters by sending the waste to a properly designed and operated BAT/PSES system, which may not be achieving the treatment standards found in § 268.48.

* * * * *

19. In § 268.48 the table in paragraph (a) is revised to read as follows:

§ 268.48 Universal treatment standards.

(a) * * *

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as ''mg/l TCLP''
I. Organic constituents:			
A2213	30558–43–1	0.003	1.4
Acenaphthene	83–32–9	0.059	3.4
Acenaphthylene	208–96–8	0.059	3.4
Acetone	67–64–1	0.28	160
Acetonitrile	75–05–8	5.6	38
Acetophenone	96–86–2	0.010	9.7
2-Acetylaminofluorene	53–96–3	0.059	140
Acrolein	107–02–8	0.29	NA
Acrylamide	79–06–1	19	23
Acrylonitrile	107–13–1	0.24	84
Aldicarb sulfone	1646–88–4	0.056	0.28
Aldrin	309–00–2	0.021	0.066
4-Aminobiphenyl	92–67–1	0.13	NA
Aniline	62–53–3	0.81	14
Anthracene	120–12–7	0.059	3.4
Aramite	140–57–8	0.36	NA
Barban	101–27–9	0.056	1.4
Bendiocarb	22781–23–3	0.056	1.4
Bendiocarb phenol	22961–82–6	0.056	1.4
Benomyl	17804–35–2	0.056	1.4
Benz(a)anthracene	56–55–3	0.059	3.4
Benzal chloride	98–87–3	0.055	6.0
Benzene	71–43–2	0.14	10
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205–99–2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207–08–9	0.11	6.8
Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
Benzo(a)pyrene	50–32–8	0.061	3.4

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
alpha-BHC	319–84–6	0.00014	0.066
beta-BHC	319–85–7	0.00014	0.066
delta-BHC	319–86–8	0.023	0.066
gamma-BHC	58–89–9	0.0017	0.066
Bromodichloromethane	75–27–4	0.35	15
Bromomethane/Methyl bromide	74–83–9	0.11	15
4-Bromophenyl phenyl ether	101–55–3	0.055	15
n-Butyl alcohol	71–36–3	5.6	2.6
Butyl benzyl phthalate	85–68–7	0.017	28
Butylate	2008–41–5	0.003	1.4
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	88–85–7	0.066	2.5
Carbaryl	63–25–2	0.006	0.14
Carbenzadim	10605–21–7	0.056	1.4
Carbofuran	1563–66–2	0.006	0.14
Carbofuran phenol	1563–38–8	0.056	1.4
Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56–23–5	0.057	6.0
Carbosulfan	55285–14–8	0.028	1.4
Chlordane (alpha and gamma isomers)	57–74–9	0.0033	0.26
p-Chloroaniline	106–47–8	0.46	16
Chlorobenzene	108–90–7	0.057	6.0
Chlorobenzilate	510–15–6	0.10	NA
2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
Chlorodibromomethane	124–48–1	0.057	15
Chloroethane	75–00–3	0.27	6.0
bis(2-Chloroethoxy)methane	111–91–1	0.036	7.2
bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
2-Chloroethyl vinyl ether	110–75–8	0.062	NA
Chloroform	67–66–3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638–32–9	0.055	7.2
p-Chloro-m-cresol	59–50–7	0.018	14
Chloromethane/Methyl chloride	74–87–3	0.19	30
2-Chloronaphthalene	91–58–7	0.055	5.6
2-Chlorophenol	95–57–8	0.044	5.7
3-Chloropropylene	107–05–1	0.036	30
Chrysene	218–01–9	0.059	3.4
o-Cresol	95–48–7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108–39–4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106–44–5	0.77	5.6
m-Cumenyl methylcarbamate	64–00–6	0.056	1.4
Cycloate	1134–23–2	0.003	1.4
Cyclohexanone	108–94–1	0.36	0.75 mg/l TCLP
o,p′-DDD	53–19–0	0.023	0.087
p,p′-DDD	72–54–8	0.023	0.087
o,p′-DDE	3424–82–6	0.031	0.087
p,p′-DDE	72–55–9	0.031	0.087
o,p′-DDT	789–02–6	0.0039	0.087
p,p′-DDT	50–29–3	0.0039	0.087
Dibenz(a,h)anthracene	53–70–3	0.055	8.2
Dibenz(a,e)pyrene	192–65–4	0.061	NA
1,2-Dibromo-3-chloropropane	96–12–8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106–93–4	0.028	15
Dibromomethane	74–95–3	0.11	15
m-Dichlorobenzene	541–73–1	0.036	6.0
o-Dichlorobenzene	95–50–1	0.088	6.0
p-Dichlorobenzene	106–46–7	0.090	6.0
Dichlorodifluoromethane	75–71–8	0.23	7.2
1,1-Dichloroethane	75–34–3	0.059	6.0
1,2-Dichloroethane	107–06–2	0.21	6.0
1,1-Dichloroethylene	75–35–4	0.025	6.0
trans-1,2-Dichloroethylene	156–60–5	0.054	30
2,4-Dichlorophenol	120–83–2	0.044	14
2,6-Dichlorophenol	87–65–0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94–75–7	0.72	10
1,2-Dichloropropane	78–87–5	0.85	18

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
cis-1,3-Dichloropropylene	10061–01–5	0.036	18
trans-1,3-Dichloropropylene	10061–02–6	0.036	18
Dieldrin	60–57–1	0.017	0.13
Diethyl phthalate	84–66–2	0.20	28
Diethylene glycol, dicarbamate	5952–26–1	0.056	1.4
p-Dimethylaminoazobenzene	60–11–7	0.13	NA
2-4-Dimethyl phenol	105–67–9	0.036	14
Dimethyl phthalate	131–11–3	0.047	28
Dimetilan	644–64–4	0.056	1.4
Di-n-butyl phthalate	84–74–2	0.057	28
1,4-Dinitrobenzene	100–25–4	0.32	2.3
4,6–Dinitro-o-cresol	534–52.1	0.28	160
2,4-Dinitrophenol	51–28–5	0.12	160
2,4-Dinitrotoluene	121–14–2	0.32	140
2,6-Dinitrotoluene	606–20–2	0.55	28
Di-n-octyl phthalate	117–84–0	0.017	28
Di-n-propylnitrosamine	621–64–7	0.40	14
1,4-Dioxane	123–91–1	12.0	170
Diphenylamine (difficult to distinguish from diphenylitrosamine)	122–39–4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86–30–6	0.92	13
1,2-Diphenylhydrazine	122–66–7	0.087	NA
Disulfoton	298–04–3	0.017	6.2
Dithiocarbamates (total)	137–30–4	0.028	28
Endosulfan I	959–98–8	0.023	0.066
Endosulfan II	33213–65–9	0.029	0.13
Endosulfan sulfate	1031–07–8	0.029	0.13
Endrin	72–20–8	0.0028	0.13
Endrin aldehyde	7421–93–4	0.025	0.13
EPTC	759–94–4	0.003	1.4
Ethyl acetate	141–78–6	0.34	33
Ethyl benzene	100–41–4	0.057	10
Ethyl cyanide/Propanenitrile	107–12–0	0.24	360
Ethyl ether	60–29–7	0.12	160
Ethyl methacrylate	97–63–2	0.14	160
Ethylene oxide	75–21–8	0.12	NA
bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
Famphur	52–85–7	0.017	15
Fluoranthene	206–44–0	0.068	3.4
Fluorene	86–73–7	0.059	3.4
Formetanate hydrochloride	23422–53–9	0.056	1.4
Formparanate	17702–57–7	0.056	1.4
Heptachlor	76–44–8	0.0012	0.066
Heptachlor epoxide	1024–57–3	0.016	0.066
Hexachlorobenzene	118–74–1	0.055	10
Hexachlorobutadiene	87–68–3	0.055	5.6
Hexachlorocyclopentadiene	77–47–4	0.057	2.4
Hexachloroethane	67–72–1	0.055	30
Hexachloropropylene	1888–71–7	0.035	30
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Indeno (1,2,3-c,d) pyrene	193–39–5	0.0055	3.4
Iodomethane	74–88–4	0.19	65
3-Iodo-2-propynyl n-butylcarbamate	55406–53–6	0.056	1.4
Isobutyl alcohol	78–83–1	5.6	170
Isodrin	465–73–6	0.021	0.066
Isolan	119–38–0	0.056	1.4
Isosafrole	120–58–1	0.081	2.6
Kepone	143–50–0	0.0011	0.13
Methacrylonitrile	126–98–7	0.24	84
Methanol	67–56–1	5.6	0.75 mg/l TCLP
Methapyrilene	91–80–5	0.081	1.5
Methiocarb	2032–65–7	0.056	1.4
Methomyl	16752–77–5	0.028	0.14
Methoxychlor	72–43–5	0.25	0.18
Methyl ethyl ketone	78–93–3	0.28	36

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
Methyl isobutyl ketone	108–10–1	0.14	33
Methyl methacrylate	80–62–6	0.14	160
Methyl methansulfonate	66–27–3	0.018	NA
Methyl parathion	298–00–0	0.014	4.6
3-Methylchlolanthrene	56–49–5	0.0055	15
4,4-Methylene bis(2-chloroaniline	101–14–4	0.50	30
Methylene chloride	75–09–2	0.089	30
Metolcarb	1129–41–5	0.056	1.4
Mexacarbate	315–18–4	0.056	1.4
Molinate	2212–67–1	0.003	1.4
Naphthalene	91–20–3	0.059	5.6
2-Naphthylamine	91–59–8	0.52	NA
o-Nitroaniline	88–74–4	0.27	14
p-Nitroaniline	100–01–6	0.028	28
Nitrobenzene	98–95–3	0.068	14
5-Nitro-o-toluidine	99–55–8	0.32	28
o-Nitrophenol	88–75–5	0.028	13
p-Nitrophenol	100–02–7	0.12	29
N-Nitrosodiethylamine	55–18–5	0.40	28
N-Nitrosodimethylamine	62–75–9	0.40	2.3
N-Nitroso-di-n-butylamine	924–16–3	0.40	17
N-Nitrosomethylethylamine	10595–95–6	0.40	2.3
N-Nitrosomorpholine	59–89–2	0.40	2.3
N-Nitrosopiperidine	100–75–4	0.013	35
N-Nitrosopyrrolidine	930–55–2	0.013	35
Oxamyl	23135–22–0	0.056	0.28
Parathion	56–38–2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)	1336–36–3	0.10	10
Pebulate	1114–71–2	0.003	1.4
Pentachlorobenzene	608–93–5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
Pentachloroethane	76–01–7	0.055	6.0
Pentachloronitrobenzene	82–68–8	0.055	4.8
Pentachlorophenol	87–86–5	0.089	7.4
Phenacetin	62–44–2	0.081	16
Phenanthrene	85–01–8	0.059	5.6
Phenol	108–95–2	0.039	6.2
o-Phenylenediamine	95–54–5	0.056	5.6
Phorate	298–02–2	0.021	4.6
Phthalic acid	100–21–0	0.055	28
Phthalic anhydride	85–44–9	0.055	28
Physostigmine	57–47–6	0.056	1.4
Physostigmine salicylate	57–64–7	0.056	1.4
Promecarb	2631–37–0	0.056	1.4
Pronamide	23950–58–5	0.093	1.5
Propham	122–42–9	0.056	1.4
Propoxur	114–26–1	0.056	1.4
Prosulfocarb	52888–80–9	0.003	1.4
Pyrene	129–00–0	0.067	8.2
Pyridine	110–86–1	0.014	16
Safrole	94–59–7	0.081	22
Silvex/2,4,5-TP	93–72–1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
1,1,2,2-Tetrachloroethane	79–34–5	0.057	6.0
Tetrachloroethylene	127–18–4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
Thiodicarb	59669–26–0	0.019	1.4
Thiophanate-methyl	23564–05–8	0.056	1.4
Tirpate	26419–73–8	0.056	0.28
Toluene	108–88–3	0.080	10
Toxaphene	8001–35–2	0.0095	2.6

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
Triallate	2303–17–5	0.003	1.4
Tribromomethane/Bromoform	75–25–2	0.63	15
1, 2, 4-Trichlorobenzene	120–82–1	0.055	19
1,1,1-Trichlorethane	71–55–6	0.054	6.0
1,1,2-Trichlorethane	79–00–5	0.054	6.0
Trichloroethylene	79–01–6	0.054	6.0
Trichloromonofluoromethane	75–69–4	0.020	30
2,4,5-Trichlorophenol	95–95–4	0.18	7.4
2,4,6-Trichlorophenol	88–06–2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93–.76–5	0.72	7.9
1,2,3-Trichloropropane	96–18–4	0.85	30
1,1,2-Trichloro-2,2,2-trifluoroethane	76–13–1	0.057	30
Triethylamine	101–44–8	0.081	1.5
tris-(2,3-Dibromopropyl) phosphate	126–72–7	0.11	0.10
Vernolate	1929–77–7	0.003	1.4
Vinyl chloride	75–01–4	0.27	6.0
Xylenes-mixed isomers (sum of o-,m-, and p-xylene concentrations)	1330–20–7	0.32	30
II. Inorganic Constituents:			
Antimony	7440–36–0	1.9	2.1 mg/l TCLP
Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
Barium	7440–39–3	1.2	7.6 mg/l TCLP
Beryllium	7440–41–7	0.82	0.014 mg/l TCLP
Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
Cyanides (Total) [4]	57–12–5	1.2	590
Cyanides (Amenable) [4]	57–12–5	0.86	30
Fluoride [5]	16984–48–8	35	NA
Lead	7439–92–1	0.69	0.37 mg/l TCLP
Mercury—Nonwastewater from Retort	7439–97–6	NA	0.20 mg/l TCLP
Mercury—All Others	7439–97–6	0.15	0.25 mg/l TCLP
Nickel	7440–02–0	3.98	5.0 mg/l TCLP
Selenium	7782–49–2	0.82	0.16 mg/l TCLP
Silver	7440–22–4	0.43	0.30 mg/l TCLP
Sulfide	18496–25–8	14	NA
Thallium	7440–28–0	1.4	0.78 mg/l TCLP
Vanadium [4]	7440–62–2	4.3	0.23 mg/l TCLP
Zinc [5]	7440–66–6	2.61	5.3 mg/l TCLP

Notes to table:

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

[2] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[3] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[4] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[5] These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at § 268.2(i).

20. Appendix XI is added to part 268 to read as follows:

APPENDIX XI TO PART 268—METAL BEARING WASTES PROHIBITED FROM DILUTION IN A COMBUSTION UNIT ACCORDING TO 40 CFR 268.3(C) [1]

Waste code	Waste description
D004	Toxicity Characteristic for Arsenic.
D005	Toxicity Characteristic for Barium.
D006	Toxicity Characteristic for Cadmium.
D007	Toxicity Characteristic for Chromium.
D008	Toxicity Characteristic for Lead.
D009	Toxicity Characteristic for Mercury.
D010	Toxicity Characteristic for Selenium.
D011	Toxicity Characteristic for Silver.

APPENDIX XI TO PART 268—METAL BEARING WASTES PROHIBITED FROM DILUTION IN A COMBUSTION UNIT ACCORDING TO 40 CFR 268.3(C) [1]—Continued

Waste code	Waste description
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.
F007	Spent cyanide plating bath solutions from electroplating operations.
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.
F010	Quenching bath residues from oil baths from metal treating operations where cyanides are used in the process.
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum car washing when such phosphating is an exclusive conversion coating process.
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003	Wastewater treatment sludge from the production of molybdate orange pigments.
K004	Wastewater treatment sludge from the production of zinc yellow pigments.
K005	Wastewater treatment sludge from the production of chrome green pigments.
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007	Wastewater treatment sludge from the production of iron blue pigments.
K008	Oven residue from the production of chrome oxide green pigments.
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.
K069	Emission control dust/sludge from secondary lead smelting.
K071	Brine purification muds from the mercury cell processes in chlorine production, where separately prepurified brine is not used.
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.
K106	Sludges from the mercury cell processes for making chlorine.
P010	Arsenic acid H_3AsO_4
P011	Arsenic oxide As_2O_5
P012	Arsenic trioxide
P013	Barium cyanide
P015	Beryllium
P029	Copper cyanide Cu(CN)
P074	Nickel cyanide $Ni(CN)_2$
P087	Osmium tetroxide
P099	Potassium silver cyanide
P104	Silver cyanide
P113	Thallic oxide
P114	Thallium (I) selenite
P115	Thallium (I) sulfate
P119	Ammonium vanadate
P120	Vanadium oxide V_2O_5
P121	Zinc cyanide.
U032	Calcium chromate.
U145	Lead phosphate.
U151	Mercury.
U204	Selenious acid.
U205	Selenium disulfide.
U216	Thallium (I) chloride.
U217	Thallium (I) nitrate.

[1] A combustion unit is defined as any thermal technology subject to 40 CFR part 264, subpart O; Part 265, subpart O; and/or 266, subpart H.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

21. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a) and 6926.

Subpart A—Requirements for Final Authorization

22. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by date of publication in the Federal Register, and by adding the following entries to Table 2 in chronological order by effective date in the Federal Register to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* *	* * *	*	*
April 8, 1996	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Aluminum Potliners in § 268.39..	61 FR [Insert page numbers].	July 8, 1996.
* *	* * *	*	*

* * * * *

TABLE 2—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
* *	* *	*	* *
July 8, 1996	Prohibition on land disposal of carbamate wastes..	3004(m).	April 8, 1996, 61 FR [Insert page numbers].
* *	* *	*	* *
October 8, 1996	Prohibition on land disposal of K088 wastes. .	3004(m).	April 8, 1998, 61 FR [Insert page numbers].
April 8, 1996		3004(m)	April 8, 1996, 61 FR [Insert page numbers].
* *	* *	*	* *

* * * * *

PART 403—GENERAL PRETREATMENT REGULATIONS FOR EXISTING AND NEW SOURCES OF POLLUTION

23. The authority citation for part 403 continues to read as follows:

Authority: Sec. 54(c)(2) of the Clean Water Act of 1977, (Pub. L. 95–217) sections 204(b)(1)(C), 208(b)(2)(C)(iii), 301(b)(1)(A)(ii), 301(b)(2)(A)(ii), 301(b)(2)(C), 301(h)(5), 301(i)(2), 304(e), 304(g), 307, 308, 309, 402(b), 405 and 501(a) of the Federal Water Pollution Control Act (Pub. L. 92–500) as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (Pub. L. 100–4).

24. In § 403.5, paragraphs (c) heading, (c)(1) and (d) are revised to read as follows:

§ 403.5 National pretreatment standards: Prohibited discharges.

* * * * *

(c) *Development of specific limits by POTW.* (1) Each POTW developing a POTW Pretreatment Program pursuant to § 403.8 shall develop and enforce specific limits to implement the prohibitions listed in paragraphs (a)(1) and (b) of this section. Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits. In addition, the POTW may establish such limits as necessary to address the land disposal restrictions at 40 CFR 268.40.

* * * * *

(d) *Local limits.* Where specific prohibitions or limits on pollutants or pollutant parameters are developed by a POTW in accordance with paragraph (c) of this section, including those standards established to address land disposal restrictions at 40 CFR 268.40, such limits shall be deemed Pretreatment Standards for the purposes of section 307(d) of the Act.

* * * * *

[FR Doc. 96–7597 Filed 4–5–96; 8:45 am]

BILLING CODE 6560–50–P

40 CFR Parts 148, 268 and 403

[EPA # 530–Z–96–002; FRL–5452–7]

RIN 2050–AD38

Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

AGENCY: Environmental Protection Agency (EPA).

ACTION: Partial withdrawal and amendment of final rule.

SUMMARY: Elsewhere in this Federal Register, EPA is promulgating a final rule which, among other things, revises treatment standards for hazardous wastewaters that exhibit the characteristic of ignitability, corrosivity, reactivity, or toxicity. The revised treatment standards were promulgated to implement the mandate of the opinion of the Circuit Court of Appeals for the District of Columbia Circuit in *Chemical Waste Management (CWM)* v. *EPA*, 976 F. 2d 2 (D.C. Cir. 1992) cert. denied 507 U.S. 1057 (1993). On March 26, 1996, President Clinton signed into law the Land Disposal Program Flexibility Act of 1996 which, among other things, provides that the wastes in question are no longer prohibited from land disposal so long as they are not hazardous wastes at the point they are land disposed. By operation of the statute, this provision is made effective immediately and therefore essentially overrules this portion of the CWM opinion. EPA accordingly is incorporating the statutory provision into the regulations by amending and/or withdrawing the portions of the regulations that are superseded by the new legislation. The amendment/withdrawal of these standards does not affect any other part of the final rule; and the effective dates of the other actions in the final rule likewise will not change. Furthermore, EPA is amending parts of the LDR Phase II final rule, published on September 19, 1994 (59 FR 47982) which are also overruled by the legislation.

EFFECTIVE DATE: April 5, 1996.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For specific information on the LDR Phase III rule

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
* *	* * *	*	*
April 8, 1996	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Aluminum Potliners in § 268.39..	61 FR [Insert page numbers].	July 8, 1996.
* *	* * *	*	*

* * * * *

TABLE 2—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
* *	* *	*	* *
July 8, 1996	Prohibition on land disposal of carbamate wastes..	3004(m).	April 8, 1996, 61 FR [Insert page numbers].
* *	* *	*	* *
October 8, 1996	Prohibition on land disposal of K088 wastes. .	3004(m).	April 8, 1998, 61 FR [Insert page numbers].
April 8, 1996		3004(m)	April 8, 1996, 61 FR [Insert page numbers].
* *	* *	*	* *

* * * * *

PART 403—GENERAL PRETREATMENT REGULATIONS FOR EXISTING AND NEW SOURCES OF POLLUTION

23. The authority citation for part 403 continues to read as follows:

Authority: Sec. 54(c)(2) of the Clean Water Act of 1977, (Pub. L. 95–217) sections 204(b)(1)(C), 208(b)(2)(C)(iii), 301(b)(1)(A)(ii), 301(b)(2)(A)(ii), 301(b)(2)(C), 301(h)(5), 301(i)(2), 304(e), 304(g), 307, 308, 309, 402(b), 405 and 501(a) of the Federal Water Pollution Control Act (Pub. L. 92–500) as amended by the Clean Water Act of 1977 and the Water Quality Act of 1987 (Pub. L. 100–4).

24. In § 403.5, paragraphs (c) heading, (c)(1) and (d) are revised to read as follows:

§ 403.5 National pretreatment standards: Prohibited discharges.

* * * * *

(c) *Development of specific limits by POTW.* (1) Each POTW developing a POTW Pretreatment Program pursuant to § 403.8 shall develop and enforce specific limits to implement the prohibitions listed in paragraphs (a)(1) and (b) of this section. Each POTW with an approved pretreatment program shall continue to develop these limits as necessary and effectively enforce such limits. In addition, the POTW may establish such limits as necessary to address the land disposal restrictions at 40 CFR 268.40.

* * * * *

(d) *Local limits.* Where specific prohibitions or limits on pollutants or pollutant parameters are developed by a POTW in accordance with paragraph (c) of this section, including those standards established to address land disposal restrictions at 40 CFR 268.40, such limits shall be deemed Pretreatment Standards for the purposes of section 307(d) of the Act.

* * * * *

[FR Doc. 96–7597 Filed 4–5–96; 8:45 am]

BILLING CODE 6560–50–P

40 CFR Parts 148, 268 and 403

[EPA # 530–Z–96–002; FRL–5452–7]

RIN 2050–AD38

Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

AGENCY: Environmental Protection Agency (EPA).

ACTION: Partial withdrawal and amendment of final rule.

SUMMARY: Elsewhere in this Federal Register, EPA is promulgating a final rule which, among other things, revises treatment standards for hazardous wastewaters that exhibit the characteristic of ignitability, corrosivity, reactivity, or toxicity. The revised treatment standards were promulgated to implement the mandate of the opinion of the Circuit Court of Appeals for the District of Columbia Circuit in *Chemical Waste Management (CWM)* v. *EPA*, 976 F. 2d 2 (D.C. Cir. 1992) cert. denied 507 U.S. 1057 (1993). On March 26, 1996, President Clinton signed into law the Land Disposal Program Flexibility Act of 1996 which, among other things, provides that the wastes in question are no longer prohibited from land disposal so long as they are not hazardous wastes at the point they are land disposed. By operation of the statute, this provision is made effective immediately and therefore essentially overrules this portion of the CWM opinion. EPA accordingly is incorporating the statutory provision into the regulations by amending and/or withdrawing the portions of the regulations that are superseded by the new legislation. The amendment/withdrawal of these standards does not affect any other part of the final rule; and the effective dates of the other actions in the final rule likewise will not change. Furthermore, EPA is amending parts of the LDR Phase II final rule, published on September 19, 1994 (59 FR 47982) which are also overruled by the legislation.

EFFECTIVE DATE: April 5, 1996.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For specific information on the LDR Phase III rule

and this document, contact Peggy Vyas in the Office of Solid Waste, phone 703–308–8594.

SUPPLEMENTARY INFORMATION:

I. Today's Action

Elsewhere in this Federal Register, a final rule is published which revises treatment standards for decharacterized wastewaters that are managed in surface impoundments regulated under the Clean Water Act (CWA) or in CWA-equivalent systems, and in Class I nonhazardous waste injection wells regulated under the Safe Drinking Water Act (SDWA). Among other actions, the final rule would have (1) revised 40 CFR 148.1(b) and (d), 148.3, 148.4, 148.20(a), 268.3, 268.40(e), 268.44(a), and 403.5(d); and (2) amended 268.1(e), 268.9(d), and 403.5(c); as well as (3) added 148.18, 268.2 (k) and (l), 268.9 (e), (f), and (g), and 268.39. EPA also promulgated certain regulations as part of the LDR Phase II rule prohibiting injection of certain decharacterized wastes (see 40 CFR 148.17(c) and 268.1(c)(3) at 59 FR 48041 and 48043 (September 19, 1994)).

EPA promulgated these provisions to implement the holding and reasoning of the D.C. Circuit's opinion in *CWM* v. *EPA*, 976 F. 2d 2 (D.C. Cir. 1992), cert. denied 507 U.S. 1057 (1993). EPA interpreted this opinion to require hazardous constituents in characteristic wastes to be treated so that the constituents were removed, destroyed or immobilized before the wastes were permanently land disposed, in order to minimize threats posed by land disposal of the wastes. This requirement extended to wastewaters managed in the types of centralized wastewater management systems mentioned above. In doing so, EPA noted in the LDR Phase III final rule, published elsewhere in this Federal Register, that it would not have set treatment standards for hazardous constituents in these characteristic wastewaters at this time but for the court's opinion, and noted the pendency of legislation which could overrule the court's opinion and so require amendments to the final rule.

Congress has now passed that legislation, the Land Disposal Program Flexibility Act of 1996, and President Clinton signed it into law on March 26, 1996 (Public Law 104–119, 100 Stat. 830). A main purpose of the legislation is to put back in place the approach for centrally-managed, decharacterized wastewater which EPA adopted in the LDR ''Third Third'' rule promulgated on June 1, 1990 (55 FR 22520). The new legislation states, in essence, that hazardous wastes which are hazardous only because they are identified as exhibiting a characteristic are not prohibited from land disposal if they are managed in either a treatment system whose ultimate discharge is regulated under the CWA (including both direct and indirect dischargers), a CWA-equivalent treatment system, or a Class I nonhazardous injection well regulated under the SDWA, provided that the wastes no longer are hazardous (i.e. no longer exhibit a characteristic) at the point land disposal occurs (RCRA § 3004(g) (7) and (8)). The characteristic can be removed by any means, including dilution or other deactivation through aggregation of different wastestreams preceding land disposal (see H. Rep. No. 454, 104th Cong. 2d Sess. at 9). For wastes managed in CWA or CWA-equivalent systems, there is a further caveat that characteristic wastes for which EPA has promulgated a method of treatment as the treatment standard (for example, high TOC ignitable wastes for which the treatment standard is recovery of organics (RORGS) or combustion (CMBST)) remain prohibited unless treated pursuant to that method (RCRA § 3004(g)(7)). Reactive cyanide wastes (i.e. wastes that may release toxic emissions when exposed to pH conditions between 2 and 12 as defined in 40 CFR 261.23(a)(5)) likewise remain prohibited from disposal units in CWA and CWA-equivalent treatment systems unless first treated to satisfy the treatment standard (*id.*).

The purpose of this notice is to withdraw the portions of the existing rules which are inconsistent with the new statute and therefore no longer in effect, or, in a few limited instances, to amend language which cannot be feasibly withdrawn. Thus, treatment standards for wastes identified as exhibiting a characteristic and managed in centralized wastewater management systems identified above will require only that the wastes be deactivated (i.e. rendered non-hazardous) before they are land disposed. The exception will continue to be for wastes for which the treatment standard is a method of treatment—namely high TOC ignitables—and for reactive cyanide wastes, which must be treated to satisfy the existing treatment standard before land disposal in a surface impoundment at CWA and CWA-equivalent treatment systems.

This action puts back in place the rules which existed before EPA promulgated the LDR Phase III provisions. Thus, for example, withdrawing the version of 148.1(d) promulgated in the LDR Phase III rule has the effect of restoring the previous version of that provision. EPA believes that withdrawing the portions of the rules that have been superseded is the quickest and simplest way of amending the rules that conform to the new legislation. Certain portions of the LDR Phase III rule have to be amended (namely §§ 268.3, 268.39 and 268.40) because withdrawing them would undo other revisions which are not affected by the legislation. [1]

EPA realizes that there may be certain questions relating to other provisions of the rules which may benefit from clarifying revisions in light of the statutory amendment. (Communications from various affected parties suggesting such changes are part of the record for this notice.) EPA is limiting this notice to changes that have to be made to eliminate superceded regulatory provisions. EPA intends to pursue the possibility of whether clarifying amendments are needed in other proceedings.

EPA does wish, however, that to clarify that as a result of withdrawing these provisions, generators with decharacterized wastewaters that are being managed in CWA or CWA-equivalent systems or injected into Class I nonhazardous injection wells do not have to identify underlying hazardous constituents. EPA also wishes to make clear to States that withdrawing these provisions removes the obligation for States to adopt them as part of an authorized program.

II. Interpretive Issues

A. Definition of CWA-Equivalent Treatment

The legislation does not define what a CWA-equivalent treatment system is, leaving the issue to the Administrator (RCRA § 3004(g)(7)(A)). EPA's existing rules at 40 CFR 268.38(a) provide a definition: ''CWA equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies.'' EPA intends to use this definition in implementing the new statute.

B. Wastes Listed Because They Exhibit a Characteristic

A number of wastes, such as F003 ignitable solvents, are listed as hazardous solely because they exhibit a characteristic of hazardous waste. The legislation does not by its terms apply

[1] In addition, EPA is withdrawing § 148.18(d) because this prohibition already exists in § 148.16 (c) and (f).

to such wastes (it applies only to wastes that are identified by characteristic, and so does not apply to listed wastes). EPA's current rules addressing the status of this type of waste under the LDR program are tangled. The Agency initially found that the dilution prohibition should apply to such wastes. See 56 FR 3864 and 3871 (Jan. 31, 1991). However, in a later notice, EPA amended the rules so that wastewaters that are listed solely because they exhibit a characteristic would not be subject to the dilution prohibition. 57 FR 37194 and 37263 (August 18, 1992). EPA did so to be consistent with the Third Third rule's approach to characteristic wastewaters. Id. at 37210–37211. This action occurred before the D.C. Circuit issued its decision remanding portions of the Third Third rule dealing with wastewaters. The Agency never corrected the regulation (found at 40 CFR 261.3(a)(2)(iii)) to conform to the opinion.

EPA's initial view is that the existing regulatory provision not applying the dilution prohibition to wastewaters listed because they exhibit a characteristic is probably inconsistent with the court's opinion, but that the principles of the new legislation (although not its language) could apply to these wastes. EPA thus has a policy choice as to whether to amend the existing rule. Today's notice is not intended to make policy choices, but rather to withdraw those rules no longer in effect. EPA plans to revisit this issue in a later proceeding. In the interim, the existing rule which provides that the dilution prohibition does not apply to wastewaters listed solely because they exhibit a characteristic remains in effect.

III. Status of Other LDR Treatment Standards

EPA is not withdrawing other treatment standards promulgated in either the LDR Phase III rule or other rules implementing portions of the court's opinion that are unaffected by the new legislation. Consequently, the provisions of the May 24, 1993, Interim Final Rule (58 FR 29860), which applied to disposal not involving the types of centralized wastewater management systems covered by the legislation, remain unaffected. Thus, underlying hazardous constituents in decharacterized wastes that are disposed of in systems other than these centralized wastewater management systems must continue to be treated before land disposal. Similarly, EPA amended the treatment standards for reactive wastes in the LDR Phase III final rule, published elsewhere in this Federal Register, to require that underlying hazardous constituents be treated when the wastes are land disposed (with an exception for certain types of emergency detonation situations). These requirements are likewise not addressed by the legislation (unless centralized wastewater management of the wastes is involved), and EPA is consequently not withdrawing these treatment standards.

IV. Rationale for Immediate Effective Date

EPA is taking this action without prior notice and opportunity to comment. Because the provisions of the legislation are effective immediately, the legislation overrules the D.C. Circuit's opinion, and thus necessarily overrules the rules implementing those parts of the opinion. Consequently, those rules need to be withdrawn to reflect the new statute. The situation is similar to what the Agency faced in 1985 when it codified portions of the 1984 amendments to RCRA without prior notice and opportunity to comment. 50 FR 28704 (July 15, 1985). The Agency's action was upheld in *United Technologies* v. *EPA,* 821 F. 2d 714, 720 (D.C. Cir. 1987). See also *Metzenbaum* v. *Federal Energy Regulatory Commission (FERC),* 675 F. 2d 1282, 1291 (D.C. Cir. 1982) (funding orders implementing statutory waiver were non-discretionary acts regulated by such waiver and that notice and comment procedures were unnecessary and possibly contrary to public interest ''given the expense that would have been involved in the futile gesture''); *Hadson Gas Systems* v. *FERC,* _____ F. 2d ____ (D.C. Cir. Feb. 9, 1996) (because controlling statute left FERC no authority to retain a regulation, notice and comment is not needed to withdraw it). EPA views today's effort as comparable to that involved in codifying the 1984 amendments since the legislation is focused clearly on one particular set of regulations and requires little interpretation by the Agency, and consequently that the decision to issue an immediately final withdrawal is justified. Consequently, EPA believes that good cause exists to issue this rule in immediately final form.

List of Subjects

40 CFR Part 148

Environmental protection, Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 403

Reporting and recordkeeping requirements, Waste treatment and disposal, Water pollution controls.

Dated: March 29, 1996.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

1. The amendments revising 40 CFR 148.1(b) and (d), 148.3, 148.4, 148.20(a) introductory text, 268.3, 268.40(e), 268.44(a), and 403.5(d); as well as the amendments amending 40 CFR 268.1(e), 268.9(d), and 403.5(c); as well as the amendments adding 40 CFR 148.18, 268.2(k) and (l), 268.9(e), (f), and (g), and 268.39 as published elsewhere in this issue of the Federal Register are withdrawn.

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

2. The authority citation for part 148 continues to read as follows:

Authority: Sec. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

§ 148.17—[Amended]

3. Section 148.17 is amended by removing and reserving paragraph (c).

4. Section 148.18 is added to subpart B to read as follows:

§ 148.18 Waste specific prohibitions—newly identified wastes.

(a) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste numbers K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–387, U389–U396, U400–U404, U407, and U409–U411 are prohibited from underground injection.

(b) On January 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste number K088 is prohibited from underground injection.

(c) On April 8, 1998, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers D018–043, and Mixed TC/Radioactive wastes, are prohibited from underground injection.

PART 268—LAND DISPOSAL RESTRICTIONS

5. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

6. Section 268.1 is amended by removing and reserving paragraph (c)(3).

7. Section 268.3 is revised to read as follows:

§ 268.3 Dilution prohibited as a substitute for treatment.

(a) Except as provided in paragraph (b) of this section, no generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with subpart D of this part, to circumvent the effective date of a prohibition in subpart C of this part, to otherwise avoid a prohibition in subpart C of this part, or to circumvent a land disposal prohibition imposed by RCRA section 3004.

(b) Dilution of wastes that are hazardous only because they exhibit a characteristic in a treatment system which treats wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act (CWA), or which treats wastes in a CWA-equivalent treatment system, or which treats wastes for the purposes of pretreatment requirements under section 307 of the CWA is not impermissible dilution for purposes of this section unless a method has been specified in § 268.40 as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

(c) Combustion of the hazardous waste codes listed in Appendix XI of this part is prohibited, unless the waste, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, can be demonstrated to comply with one or more of the following criteria (unless otherwise specifically prohibited from combustion):

(1) The waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard found in § 268.48;

(2) The waste consists of organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste;

(3) The waste, at point of generation, has reasonable heating value such as greater than or equal to 5000 BTU per pound;

(4) The waste is co-generated with wastes for which combustion is a required method of treatment;

(5) The waste is subject to Federal and/or State requirements necessitating reduction of organics (including biological agents); or

(6) The waste contains greater than 1% Total Organic Carbon (TOC).

8. Section 268.39 is added to read as follows:

§ 268.39 Waste specific prohibitions—spent aluminum potliners; reactive; and carbamate wastes.

(a) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K156–K161; and in 40 CFR 261.33 as EPA Hazardous Waste numbers P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

(b) On July 8, 1996, the wastes identified in 40 CFR 261.23 as D003 that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. This prohibition does not apply to unexploded ordnance and other explosive devices which have been the subject of an emergency response. (Such D003 wastes are prohibited unless they meet the treatment standard of DEACT before land disposal (see § 268.40)).

(c) On January 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

(d) On April 8, 1998, Radioactive wastes mixed with K088, K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, and U407, U409–U411 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

(e) Between July 8, 1996, and April 8, 1998, the wastes included in paragraphs (a), (b), (c), and (d) of this section may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in § 268.5(h)(2).

(f) The requirements of paragraphs (a), (b), (c), and (d) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in Subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under § 268.44;

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to these wastes covered by the extension.

(g) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Subpart D levels, the waste is prohibited from land disposal, and all requirements of this part 268 are applicable, except as otherwise specified.

9. Section 268.40 is amended by revising paragraph (e) to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

(e) For characteristic wastes (D001–D003, and D018–D043) that are subject to treatment standards in the following table ''Treatment Standards for Hazardous Wastes,'' all underlying hazardous constituents (as defined in § 268.2(i)) must meet Universal Treatment Standards, found in § 268.48, ''Table UTS,'' prior to land disposal as defined in § 268.2(c).

* * * * *

10. In § 268.40, Table § 268.40, as revised elsewhere in this issue of the Federal Register, is further amended by removing note 8 at the end of the table and by revising the entries for D001, D002, D003 and D018–D043 to read as follows:

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
D001 ..	Ignitable Characteristic Wastes, except for the § 261.21(a)(1) High TOC Subcategory, that are managed in non-CWA/non-CWA-equivalent/non-Class I SDWA systems.	NA	NA	DEACT and meet § 268.48 standards; or RORGS; or CMBST	DEACT and meet § 268.48 standards; or RORGS; or CMBST
	Ignitable Characteristic Wastes, except for the § 261.21(a)(1) High TOC Subcategory, that are managed in CWA/CWA-equivalent/Class I SDWA systems.	NA	NA	DEACT	DEACT
	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1)—Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only).	NA	NA	NA	RORGS; or CMBST
D002 ..	Corrosive Characteristic Wastes that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems.	NA	NA	DEACT and meet § 268.48 standards	DEACT and meet § 268.48 standards
	Corrosive Characteristic Wastes that are managed in CWA, CWA-equivalent, or Class I SDWA systems.	NA	NA	DEACT	DEACT
	* * *	*	*	*	*
D003 ..	Reactive Sulfides Subcategory based on 261.23(a)(5).	NA	NA	DEACT	DEACT
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Explosives Subcategory based on 261.23(a)(6), (7), and (8).	NA	NA	DEACT and meet § 268.48 standards	DEACT and meet § 268.48 standards
	Other Reactives Subcategory based on 261.23(a)(1).	NA	NA	DEACT	DEACT
	Water Reactive Subcategory based on 261.23(a) (2), (3), and (4). (Note: This subcategory consists of nonwastewaters only.).	NA	NA	NA	DEACT and meet § 268.48 standards
	Reactive Cyanides Subcategory based on 261.23(a)(5).	Cyanides (Total) [7]	57–12–5	Reserved	590
		Cyanides (Amenable) [7]	57–12–5	0.86	30
	* * *	*	*	*	*
D018 ..	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Benzene	71–43–2	0.14 and meet § 268.48 standards	10 and meet § 268.48 standards
	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Benzene	71–43–2	0.14	10
D019 ..	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Carbon tetrachloride	56–23–5	0.057 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Carbon tetrachloride	56–23–5	0.057	6.0
D020 ..	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Chlordane (alpha and gamma isomers).	57–74–9	0.0033 and meet § 268.48 standards	0.26 and meet § 268.48 standards
	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Chlordane (alpha and gamma isomers).	57–74–9	0.0033	0.26

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
D021 ..	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Chlorobenzene	108–90–7	0.057 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Chlorobenzene	108–90–7	0.057	6.0
D022 ..	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Chloroform	67–66–3	0.046 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Chloroform	67–66–3	0.046	6.0
D023 ..	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	o-Cresol	95–48–7	0.11 and meet § 268.48 standards	5.6 and meet § 268.48 standards
	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	o-Cresol	95–48–7	0.11	5.6
D024 ..	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77 and meet § 268.48 standards	5.6 and meet § 268.48 standards
	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	m-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77	5.6
D025 ..	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77 and meet § 268.48 standards	5.6 and meet § 268.48 standards
	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77	5.6
D026 ..	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, p-cresol concentrations).	1319–77–3	0.88 and meet § 268.48 standards	11.2 and meet § 268.48 standards
	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations).	1319–77–3	0.88	11.2
D027 ..	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	p-Dichlorobenzene (1,4-Dichlorobenzene).	106–46–7	0.090 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	p-Dichlorobenzene (1,4-Dichlorobenzene).	106–46–7	0.090	6.0
D028 ..	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA system only.	1,2-Dichloroethane	107–06–2	0.21 and meet § 268.48 standards	6.0 and meet § 268.48 standards

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	1,2-Dichloroethane	107–06–2	0.21	6.0
D029 ..	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA system only.	1,1-Dichloroethylene	75–35–4	0.025 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	1,1-Dichloroethylene	75–35–4	0.025	6.0
D030 ..	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA system only.	2,4-Dinitrotoluene	121–14–2	0.32 and meet § 268.48 standards	140 and meet § 268.48 standards
	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	2,4-Dinitrotoluene	121–14–2	0.32	140
D031 ..	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Heptachlor	76–44–8	0.0012 and meet § 268.48 standards	0.066 and meet § 268.48 standards
		Heptachlor epoxide	1024–57–3	0.016 and meet § 268.48 standards	0.066 and meet § 268.48 standards
	Wastes that are TC for Heptachlor based on the TCLP ion SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Heptachlor	76–44–8	0.0012	0.066
		Heptachlor epoxide	1024–57–3	0.016	0.066
D032 ..	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA system only.	Hexachlorobenzene	118–74–1	0.55 and meet § 268.48 standards	10 and meet § 268.48 standards
	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Hexachlorobenzene	118–74–1	0.055	10
D033 ..	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Hexachlorobutadiene	87–68–3	0.055 and meet § 268.48 standards	5.6 and meet § 268.48 standards
	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Hexachlorobutadiene	87–68–3	0.055	5.6
D034 ..	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Hexachloroethane	67–72–1	0.055 and meet § 268.48 standards	30 and meet § 268.48 standards
	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Hexachlorethane	67–72–1	0.055	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
D035 ..	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Methyl ethyl ketone	78–93–3	0.28 and meet § 268.48 standards	36 and meet § 268.48 standards
	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, Class I SDWA systems.	Methyl ethyl ketone	78–93–3	0.28	36
D036 ..	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Nitrobenzene	98–95–3	0.068 and meet § 268.48 standards	14 and meet § 268.48 standards
	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, Class I SDWA systems.	Nitrobenzene	98–95–3	0.068	14
D037 ..	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Pentachlorophenol	87–86–5	0.089 and meet § 268.48 standards	7.4 and meet § 268.48 standards
	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, Class I SDWA systems.	Pentachlorophenol	87–86–5	0.089	7.4
D038 ..	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Pyridine	110–86–1	0.014 and meet § 268.48 standards	16 and meet § 268.48 standards
	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Pyridine	110–86–1	0.014	16
D039 ..	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Tetrachloroethylene	127–18–4	0.056 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Tetrachloroethylene	127–18–4	0.056	6.0
D040 ..	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Trichloroethylene	79–01–6	0.054 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Trichloroethylene	79–01–6	0.054	6.0
D041 ..	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	2,4,5-Trichlorophenol	95–95–4	0.18 and meet § 268.48 standards	7.4 and meet § 268.48 standards
	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	2,4,5-Trichlorophenol	95–95–4	0.18	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
D042 ..	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	2,4,6-Trichlorophenol	88–06–2	0.035 and meet § 268.48 standards	7.4 and meet § 268.48 standards
	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	2,4,6-Trichlorophenol	88–06–2	0.035	7.4
D043 ..	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311 and that are managed in non-CWA/non-CWA equivalent/non-Class I SDWA systems only.	Vinyl chloride	75–01–4	0.27 and meet § 268.48 standards	6.0 and meet § 268.48 standards
	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311 and that are managed in CWA, CWA equivalent, or Class I SDWA systems.	Vinyl chloride	75–01–4	0.27	6.0
	* * *	*	*	*	*

Notes to table:

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number if given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * * *

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and distillation time of one hour and 15 minutes.

[FR Doc. 96–8249 Filed 4–5–96; 8:45 am]

BILLING CODE 6560–50–P

Corrections

Federal Register
Vol. 61, No. 84
Tuesday, April 30, 1996

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Part 51

[Docket Number FV-95-305]

Shelled Almonds and Almonds in the Shell; Grade Standards

Correction

In Proposed Rule document 96–9829 beginning on page 17580 in the issue of Monday, April 22, 1996 make the following correction:

On page 17580, in the first column, under **DATES**, in the third line ''July 21, 1996'' should read ''June 21, 1996''.

BILLING CODE 1505–01–D

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP96-190-008]

Colorado Interstate Gas Company; Proposed Changes in FERC Gas Tariff

Correction

In notice document 96–8725 appearing on page 15792 in the issue of Tuesday, April 9, 1996, the docket number should read as set forth above.

BILLING CODE 1505–01–D

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 268 and 403

[EPA # 530-Z-96-002; FRL-5452-7]

RIN 2050-AD38

Land Disposal Restrictions Phase III -- Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

Correction

In rule document 96–8249 beginning on page 15660 in the issue of Monday, April 8, 1996 make the following correction:

On page 15660, in the third column, under **EFFECTIVE DATE** ''April 5, 1996'' should read ''April 8, 1996''.

BILLING CODE 1505–01–D

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[EPA # 530-Z-96-002; FRL-5438-3]

RIN 2050-AD38

Land Disposal Restrictions Phase III -- Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

Correction

In rule document 96–7597 beginning on page 15566 in the issue of Monday, April 8, 1996 make the following corrections:

On page 15566, in the first column, in the penultimate line ''July 1, 1996'' should read ''July 8, 1996''.

§268.39 [Corrected]

On page 15599, in the third column, in §268.39(c), in the first line ''July 8, 1996'' should read ''January 8, 1997''.

BILLING CODE 1505–01–D

and 604. Alternatively, EPA may certify that the rule will not have a significant impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and government entities with jurisdiction over populations of less than 50,000.

SIP approvals under section 110 and Subchapter I, Part D of the Clean Air Act do not create any new requirements, but simply approve requirements that the State is already imposing. Therefore, because the federal SIP-approval does not impose any new requirements, I certify that it does not have a significant impact on any small entities affected. Moveover, due to the nature of the federal-state relationship under the Clean Air Act, preparation of a regulatory flexibility analysis would constitute federal inquiry into the economic reasonableness of state action. The Clean Air Act forbids EPA to base its actions concerning SIPs on such grounds. *Union Electric Co.* v *US EPA,* 427 US 246, 256–66 (S.Ct. 1976); 42 U.S.C. 7410(a)(2).

Under sections 202, 203, and 205 of the Unfunded Mandates Reform Act of 1995 (''Unfunded Mandates Act''), signed into law on March 22, 1995, EPA must undertake various actions in association with proposed or final rules that include a federal mandate that may result in estimated annual costs of $100 million or more to the private sector, or to state, local, or tribal governments in the aggregate.

Through submission of this SIP or plan revision, the state and any affected local or tribal governments have elected to adopt the program provided for under sections 110 and 187 of the Clean Air Act. These rules may bind state, local and tribal governments to perform certain actions and also require the private sector to perform certain duties. To the extent that the rules being approved by this action would impose any mandate upon the state, local or tribal governments either as the owner or operator of a source or as a regulator, or would impose any mandate upon the private sector, EPA's action will impose no new requirements; such sources are already subject to these regulations under State law. Accordingly, no additional costs to state, local, or tribal governments, or to the private sector, result from this action. EPA has also determined that this final action does not include a mandate that may result in estimated annual costs of $100 million or more to state, local, or tribal governments in the aggregate or to the private sector.

Under 5 U.S.C. section 605(b), I certify that redesignations do not have a significant economic impact on a substantial number of small entities. (See 46 FR 8709.)

This action has been classified as a Table 3 action for signature by the Regional Administrator under the procedures published in the Federal Register on January 19, 1989 (54 FR 2214–2225), as revised by a July 10, 1995 memorandum from Mary Nichols, Assistant Administrator for Air and Radiation. The Office of Management and Budget (OMB) has exempted this regulatory action from E.O. 12866 review.

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this rule must be filed in the United States Court of Appeals for the appropriate circuit within 60 days from date of publication. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed and shall not postpone the effectiveness of such rule or action. This rule may not be challenged later in proceedings to enforce its requirements. (See 307(b)(2).)

List of Subjects 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations.

40 CFR Part 81

Air pollution control, National parks, and Wilderness areas.

Authority: 42 U.S.C. 7401–7671q.

Dated: May 31, 1996.

William J. Muszynski,

Acting Regional Administrator.

[FR Doc. 96–16158 Filed 6–27–96; 8:45 am]

BILLING CODE 6560–50–P

40 CFR Parts 148 and 268

[EPA # F–96–PH3F–FFFFF; FRL–5528–1]

RIN 2050–AD38

Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

AGENCY: Environmental Protection Agency (EPA).

ACTION: Technical correction.

SUMMARY: On April 8, 1996, EPA published regulations covering both congressionally-mandated and court-ordered prohibitions on land disposal of certain hazardous wastes. On the same day, EPA published a partial withdrawal and correction of those regulations to the extent the Land Disposal Program Flexibility Act (LDPFA) (signed by the President on March 26, 1996) revoked most of the court-ordered prohibitions. This notice corrects technical errors in the final regulations and the partial withdrawal notice.

EFFECTIVE DATE: This rule is effective on June 28, 1996.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–PH3F–FFFFF. The RCRA Docket is open from 9 a.m. to 4 p.m. Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424–9346 (toll free) or (703) 920–9810 in the Washington, DC metropolitan area. For information on this notice contact Michael Petruska (5302W), Office of Solid Waste, 401 M Street, S.W., Washington, DC 20460, (703) 308–8434.

SUPPLEMENTARY INFORMATION:

I. Reasons and Basis for Today's Amendment

The Agency has received comments from the regulated community and State agencies requesting clarification on certain aspects of the April 8, 1996 Land Disposal Restrictions (LDR) Phase III final rule (61 FR 15566) and the April 8, 1996 withdrawal notice (61 FR 15660). Today's amendment responds to these comments and makes technical corrections where appropriate.

II. Amendments to the LDR Phase III Final Rule

There were several errors in the treatment standard table in § 268.40, and in the table of Universal Treatment Standards (UTS) in § 268.48. The errors pertained to portions of the final rule which were not affected by the LDPFA. It should be noted that certain errors in both of these tables are not being corrected here as they are being corrected by the Office of Federal Register.

A. Section 268.40 Table

There were several errors in the table ''Treatment Standards for Hazardous

Waste'' in section 268.40. First, the waste codes for the proposed organobromine wastes—K140 and U404—inadvertently appeared in the table. As was explained in the preamble to the final rule (61 FR 15566, 15569, April 8, 1996), however, the Agency is not promulgating treatment standards for these wastes at this time since the listing of these wastes as hazardous has not been finalized. Today's notice removes these entries from the table.

Second, the treatment standards set out in the table for the carbamate wastes were incorrect. These entries reflected the waste codes and constituents in the proposed listing instead of the waste codes and constituents in the finalized listing (60 FR 7824, February 9, 1995). These entries also are being corrected in today's notice.

Third, the entries for F006, F007, F010, F037, F039, K006, and K062 included treatment standards for constituents for which previously there was no standard (''NA'' had appeared instead). The proposed rule had included treatment standards to replace all of the ''NA'' entries in the table. However, as was explained in the preamble to the final rule (61 FR at 15569), the Agency agreed with commenters who felt it was arbitrary to add a standard for the sake of completeness where previously there was none, and, therefore, the Agency did not finalize the proposed changes. However, EPA inadvertently continued to include the standard for these waste codes in the final rule. Today's notice restores the ''NA'' entries.

B. Section 268.48 Table

The wastewater treatment standards for A2213, Butylate, Cycloate, EPTC, Molinate, Pebulate, Prosulfocarb, Triallate, and Vernolate appeared in the table of UTS as 0.003, although the preamble gave the correct standard as 0.042 (61 FR 15584). Today's notice corrects the UTS table.

III. Amendments to the LDR Phase III Withdrawal Notice

There are four sections in the withdrawal notice that need correction/clarification—§§ 148.1, 268.1, 268.3, and 268.40.

A. Section 148.1

The Agency today is amending the language in § 148.1(d) to more accurately reflect the recently enacted LDPFA. The revised language clarifies that decharacterized wastes injected in any Class I injection well—either hazardous or nonhazardous—are not prohibited wastes, and, therefore, are not subject to the Land Disposal Restrictions (LDR) treatment standards. This result was alluded to in the April 8, 1996 withdrawal notice (61 FR 15661), but the Agency believes it is appropriate to further make it clear that both hazardous and nonhazardous Class I wells are excepted, as provided in the text of the legislation.

B. Section 268.1

The Agency also is amending the language in § 268.1(c) to mirror the amended language in § 148.1(d) described above. We also are clarifying that decharacterized wastewaters managed in Clean Water Act (CWA) or equivalent systems with land disposal units are not prohibited wastes, and, thus, are not subject to LDR treatment standards. As provided in the legislation, the decharacterized wastes managed in CWA or CWA-equivalent systems which remain prohibited are those that have a specified ''method of treatment'' for a treatment standard, or are reactive cyanide wastes. This clarification was also alluded to in the April 8, 1996 withdrawal notice (61 FR 15661).

C. Section 268.3

The Agency is today amending the dilution prohibition language in § 268.3(b) to clarify that the treatment method of deactivation (DEACT) is not considered a specified method of treatment for the purposes of that section. This change merely codifies existing Agency interpretation (see preamble discussion at 55 FR 22666, June 1, 1990; and 57 FR 8087–8088, March 6, 1992).

D. Section 268.40

As discussed in A. and B. of this section, decharacterized wastes managed in CWA or CWA-equivalent systems (with land disposal units receiving the decharacterized waste) are no longer prohibited wastes, with the exception of characteristic wastes that have a specified method as a treatment standard and reactive cyanide. All decharacterized wastes injected into Class I wells also are no longer prohibited wastes.

In the rush of preparing a notice to reflect the new legislation as quickly as possible, EPA inadvertently failed to remove the numerical standards for these categories of wastes and replace them with the characteristic level (61 FR at 15664–15668). Therefore, the treatment standards in the April 8 withdrawal notice for these wastes were in error. For instance, the wastewater treatment standard for benzene in D018 wastes that are managed in CWA, CWA equivalent, or Class I injection wells was given as 0.14 mg/l. In fact, a D018 wastewater managed in one of these systems need only meet the regulatory level of 0.5 mg/l to be rendered nonhazardous (i.e. decharacterized) and, hence, no longer prohibited. Today's notice corrects this mistake by removing that category from the table of Treatment Standards for Hazardous Wastes, and indicating via a footnote that these wastes, once decharacterized, are no longer subject to LDR treatment standards.

The Agency wishes to clarify further that these non-LDR wastes also are not subject to the LDR notification and certification requirements of § 268.7 and § 268.9.

IV. Clarification to the Phase III Withdrawal Notice

Under RCRA regulations in effect before the LDPFA, wastes that are listed solely because they exhibit a hazardous characteristic are not prohibited from land disposal if they are managed in CWA, CWA-equivalent, or Class I injection well systems and are no longer hazardous at the point of land disposal. Id.; see also the codification of this principle at 40 CFR 261.3(a)(2)(iii) and 57 FR at 37210–211 (August 18, 1992). (The exception is for listed wastes that are subject to a method of treatment; these wastes cannot be disposed of in CWA or equivalent systems. See 55 FR at 22656, 22657 (general principle in Third Third final rule that characteristic wastes subject to a method of treatment remain subject to dilution prohibition even when managed in CWA treatment systems) and 57 FR 37210 (same principle should apply to wastes listed solely because they exhibit a characteristic).

In the April 8, 1996 withdrawal notice, EPA stated that it would not, at least for the time being, reopen those land disposal restriction rules applicable to wastes listed solely because they exhibit a hazardous waste characteristic (e.g. U002 commercial chemical product acetone). See 61 FR at 15661–62. This is because the new legislation does not directly apply to such wastes. Id.

EPA is taking this opportunity to clarify that the existing rules on wastes listed solely because they exhibit a characteristic apply to all wastes, regardless of whether they are wastewaters or non-wastewaters, so long as they are managed in the prescribed types of wastewater management systems. Notwithstanding unclear language in the August, 1992 preamble cited above, what the Agency intended to do was to put wastes listed solely because they exhibit a characteristic on

the same footing vis-a-vis the dilution prohibition as the characteristic wastes covered by the Third Third rule. 57 FR at 37210. Under that Third Third rule, most characteristic wastes (whether or not they were in the wastewater or nonwastewater treatability group) could be permissibly be managed in CWA systems and Class I UIC injection wells so long as they were rendered non-hazardous by any means before being placed in a land disposal unit (i.e. surface impoundment or Class I injection well). 55 FR at 22656–658 (June 1, 1990). EPA is formally clarifying this point by means of today's preamble discussion.

V. Rationale for Immediate Effective Date

Today's notice does not create any new regulatory requirements; rather, it restates and clarifies requirements already in effect (by virtue of the new legislation) by correcting a number of errors in the April 8, 1996 final rule and withdrawal notice. For these reasons, EPA finds that good cause exists under section 3010(b)(3) of RCRA, 42 U.S.C. 9903(b)(3), to provide for an immediate effective date. See generally 61 FR at 15662. For the same reasons, EPA finds that there is good cause under 5 U.S.C. 553(b)(3) to promulgate today's corrections in final form and that there is good cause under 5 U.S.C. 553(b)(3) to waive the requirement that regulations be published at least 30 days before they become effective.

VI. Analysis Under Executive Order 12866, the Unfunded Mandates Reform Act of 1995, the Regulatory Flexibility Act, and the Paperwork Reduction Act

This technical correction does not create any new regulatory requirements. It merely corrects technical errors and clarifies requirements already in effect (by virtue of the new legislation) and therefore is not a ''significant'' regulatory action within the meaning of Executive Order 12866, and does not impose any Federal mandate on State, local, or tribal governments or the private sector within the meaning of the Unfunded Mandates Reform Act of 1995. For the same reasons, pursuant to the Regulatory Flexibility Act, I certify that this action would not have a significant impact on a substantial number of small entities. Finally, because this is a technical correction, it does not affect requirements under the Paperwork Reduction Act.

VII. Submission to Congress and the General Accounting Office

Under section 801(a)(1)(A) of the Administrative Procedure Act (APA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's Federal Register. This rule is not a ''major rule'' as defined by section 804(2) of the APA as amended.

List of Subjects

40 CFR Part 148

Environmental protection, Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

Dated: June 21, 1996.

Elliott Laws,

Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Secs. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.

2. Section 148.1 is amended by revising paragraph (d) to read as follows:

§ 148.1 Purpose, scope and applicability.

* * * * *

(d) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this part, or part 268 of this chapter, are not prohibited if the wastes:

(1) Are disposed into a nonhazardous or hazardous injection well as defined under 40 CFR § 146.6(a); and

(2) Do not exhibit any prohibited characteristic of hazardous waste identified in 40 CFR part 261, subpart C at the point of injection.

PART 268—LAND DISPOSAL RESTRICTIONS

3. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

4. In section 268.1, paragraph (c) is amended by adding paragraphs (3) and (4) to read as follows:

§ 268.1 Purpose, scope and applicability.

* * * * *

(c) * * *

(3) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this part, or part 148 of this chapter, are not prohibited if the wastes:

(i) Are disposed into a nonhazardous or hazardous injection well as defined under 40 CFR 146.6(a); and

(ii) Do not exhibit any prohibited characteristic of hazardous waste identified in 40 CFR part 261, subpart C at the point of injection.

(4) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this part, are not prohibited if the wastes meet any of the following criteria, unless the wastes are subject to a specified method of treatment other than DEACT in § 268.40, or are D003 reactive cyanide:

(i) The wastes are managed in a treatment system which subsequently discharges to waters of the U.S. pursuant to a permit issued under section 402 of the Clean Water Act; or

(ii) The wastes are treated for purposes of the pretreatment requirements of section 307 of the Clean Water Act; or

(iii) The wastes are managed in a zero discharge system engaged in Clean Water Act-equivalent treatment as defined in § 268.37(a); and

(iv) The wastes no longer exhibit a prohibited characteristic at the point of land disposal (i.e., placement in a surface impoundment).

* * * * *

5. Section 268.2 is amended by revising paragraph (j) to read as follows:

§ 268.2 Definitions applicable in this part.

* * * * *

(j) *Inorganic metal-bearing waste* is one for which EPA has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content as described in § 268.3(c)(1), and is specifically listed in appendix XI of this part.

* * * * *

6. Section 268.3 is amended by revising paragraph (b) to read as follows:

§ 268.3 Dilution prohibited as a substitute for treatment.

* * * * *

(b) Dilution of wastes that are hazardous only because they exhibit a characteristic in treatment systems which include land- based units which treat wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Clean Water Act (CWA), or which treat wastes in a CWA-equivalent treatment system, or which treat wastes for the purposes of pretreatment requirements under section 307 of the CWA is not impermissible dilution for purposes of this section unless a method other than DEACT has been specified in § 268.40 as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

* * * * *

7. Section 268.39 is amended by revising paragraph (e) to read as follows:

§ 268.39 Waste specific prohibitions—spent aluminum potliners; reactive; and carbamate wastes.

* * * * *

(e) Between July 8, 1996, and April 8, 1998, the wastes included in paragraphs (a), (c), and (d) of this section may be disposed in a landfill or surface impoundment, only if such unit is in compliance with the requirements specified in § 268.5(h)(2).

* * * * *

8. Section 268.40 is amended by revising the first sentence of paragraph (a), and paragraph (e) to read as follows:

§ 268.40 Applicability of treatment standards.

(a) A prohibited waste identified in the table ''Treatment Standards for Hazardous Wastes'' may be land disposed only if it meets the requirements found in the table. * * *

* * * * *

(e) For characteristic wastes (D001–D003, and D012–D043) that are subject to treatment standards in the following table ''Treatment Standards for Hazardous Wastes,'' all underlying hazardous constituents (as defined in § 268.2(i)) must meet Universal Treatment Standards, found in § 268.48, ''Table UTS,'' prior to land disposal as defined in § 268.2(c) of this part.

* * * * *

§ 268.40 [Amended]

9. In § 268.40, the table at the end of the section is amended by removing the entries for K140, P187, P193, P195, P200, U360–U363, U368–U371, U374, U380, U388, U397–U399, U405, U406, and U408; and by revising the entries for D001–D003, D012–D043, F006, F007, F010, F037, F039, K006, K008, K062, K108, K156–K161, P093, P196, P202, U277, U365, U366, U375–U379, U381–U387, U389–U396, U400–U404, and U407; and by adding the entries for U278, U409, U410, and U411; and by adding footnotes 8 and 9 to read as follows:

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters (Concentration in mg/l [3], or technology code [4])	Nonwastewaters (Concentration in mg/kg [5] unless noted as ''mg/l TCLP''; or technology code)
		Common name	CAS [2] No.		
D001	Ignitable Characteristic Wastes, except for the § 261.21(a)(1) High TOC Subcategory.	NA	NA	DEACT and meet § 268.48 standards;[8] or RORGS;[9] or CMBST [9].	DEACT and meet § 268.48 standards;[8] or RORGS;[9] or CMBST.[9]
	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1)—Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only).	NA	NA	NA	RORGS;[9] or CMBST.[9]
D002	Corrosive Characteristic Wastes	NA	NA	DEACT and meet § 268.48 standards [8].	DEACT and meet § 268.48 standards [8]
	* * *	*	*	*	*
D003	Reactive Sulfides Subcategory based on 261.23(a)(5).	NA	NA	DEACT and meet § 268.48 standards [8].	DEACT and meet § 268.48 standards.[8]
	Explosives Subcategory based on 261.23(a)(6), (7), and (8).	NA	NA	DEACT and meet § 268.48 standards [8].	DEACT and meet § 268.48 standards.[8]
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other Reactives Subcategory based on 261.23(a)(1).	NA	NA	DEACT and meet § 268.48 standards [8].	DEACT and meet § 268.48 standards.[8]
	Water Reactive Subcategory based on 261.23(a)(2),(3), and (4). (Note: This subcategory consists of nonwastewaters only).	NA	NA	NA	DEACT and meet § 268.48 standards.[8]
	Reactive Cyanides Subcategory based on 261.23(a)(5).	Cyanides (Total) [7]	57–12–5	Reserved	590.[9]
		Cyanides (Amenable)[7].	57–12–5	0.86[9]	30.[9]

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters (Concentration in mg/l [3], or technology code [4])	Nonwastewaters (Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code)
		Common name	CAS [2] No.		
*	* *	*	*	*	*
D012	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.	Endrin	72–20–8	BIODG;[9] or CMBST [9].	0.13 and meet § 268.48 standards.[8]
		Endrin aldehyde	7421–93–4	BIODG;[9] or CMBST [9].	0.13 and meet § 268.48 standards [8]
D013	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.	alpha-BHC	319–84–6	CARBN;[9] or CMBST [9].	0.066 and meet § 268.48 standards [8]
		beta-BHC	319–85–7	CARBN;[9] or CMBST [9].	0.066 and meet § 268.48 standards [8]
		delta-BHC	319–86–8	CARBN;[9] or CMBST [9].	0.066 and meet § 268.48 standards [8]
		gamma-BHC (Lindane).	58–89–9	CARBN;[9] or CMBST [9].	0.066 and meet § 268.48 standards [8]
D014	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.	Methoxychlor	72–43–5	WETOX [9] or CMBST [9].	0.18 and meet § 268.48 standards [8]
D015	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.	Toxaphene	8001–35–2	BIODG [9] or CMBST [9].	2.6 and meet § 268.48 standards [8]
D0l6	Wastes that are TC for 2,4-D(2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.	2,4-D(2,4-Dichlorophenoxyacetic acid).	94–75–7	CHOXD;[9] BIODG;[9] or CMBST [9].	10 and meet § 268.48 standards [8]
D017	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.	2,4,5-TP(Silvex)	93–72–1	CHOXD [9] or CMBST [9].	7.9 and meet § 268.48 standards [8]
D018	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.	Benzene	71–43–2	0.14 and meet § 268.48 standards [8].	10 and meet § 268.48 standards [8]
D019	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.	Carbon tetrachloride	56–23–5	0.057 and meet § 268.48 standards [8].	6.0 and meet § 268.48 standards [8]
D020	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.	Chlordane (alpha and gamma isomers).	57–74–9	0.0033 and meet § 268.48 standards [8].	0.26 and meet § 268.48 standards [8]
D021	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.	Chlorobenzene	108–90–7	0.057 and meet § 268.48 standards[8].	6.0 and meet § 268.48 standards.[8]
D022	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.	Chloroform	67–66–3	0.046 and meet § 268.48 standards[8].	6.0 and meet § 268.48 standards.[8]
D023	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.	o-Cresol	95–48–7	0.11 and meet § 268.48 standards[8].	5.6 and meet § 268.48 standards.[8]
D024	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.	M-Cresol (difficult to distinguish from p-cresol).	108–39–4	0.77 and meet § 268.48 standards[8].	5.6 and meet § 268.48 standards.[8]
D025	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol).	106–44–5	0.77 and meet § 268.48 standards[8].	5.6 and meet § 268.48 standards.[8]
D026	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations).	1319–77–3	0.88 and meet § 268.48 standards[8].	11.2 and meet § 268.48 standards.[8]
D027	Wastes that are TC for p-Dichloro- benzene based on the TCLP in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene).	106–46–7	0.090 and meet § 268.48 standards[8].	6.0 and meet § 268.48 standards.[8]
D028	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.	1,2-Dichloroethane	107–06–2	0.21 and meet § 268.48 standard[8].	6.0 and meet § 268.48 standards.[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters (Concentration in mg/l [3], or technology code [4])	Nonwastewaters (Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code)
		Common name	CAS [2] No.		
D029	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.	1,1-Dichlorethylene	75–35–4	0.025 and meet § 268.48 standards[8].	6.0 and meet § 268.48 standards.[8]
D030	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.	2,4-Dinitrotoluene	121–14–2	0.32 and meet § 268.48 standards[8].	140 and meet § 268.48 standards.[8]
D031	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.	Heptachlor	76–44–8	0.0012 and meet § 268.48 standards[8].	0.066 and meet § 268.48 standards.[8]
		Heptachlor epoxide	1024–57–3	0.016 and meet § 268.48 standards[8].	0.066 and meet § 268.48 standards.[8]
D032	Wastes that are TC for Hexachloro- benzene based on the TCLP in SW846 Method 1311.	Hexachlorobenzene	118–74–1	0.055 and meet § 268.48 standards[8].	10 and meet § 268.48 standards.[8]
D033	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.	Hexachlorobutadiene.	87–68–3	0.055 and meet § 268.48 standards[8].	5.6 and meet § 268.48 standards.[8]
D034	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.	Hexachloroethane ...	67–72–1	0.055 and meet § 268.48 standards[8].	30 and meet § 268.48 standards.[8]
D035	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.	Methyl ethyl ketone	78–93–3	0.28 and meet § 268.48 standard[8].	36 and meet § 268.48 standards.[8]
D036	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.	Nitrobenzene	98–95–3	0.068 and meet § 268.48 standards[8].	14 and meet § 268.48 standards.[8]
D037	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.	Pentachlorophenol	87–86–5	0.089 and meet § 268.48 standards[8].	7.4 and meet § 268.48 standards.[8]
D038	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.	Pyridine	110–86–1	0.014 and meet § 268.48 standards[8].	16 and meet § 268.48 standards.[8]
D039	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	Tetracholorethylene	127–18–4	0.056 and meet § 268.48 standards..	6.0 and meet § 268.48 standards.[8]
D040	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.	Trichloroethylene	79–01–6	0.054 and meet § 268.48 standards[8].	6.0 and meet § 268.48 standards.[8]
D041	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,5-Trichlorophenol.	95–95–4	0.18 and meet § 268.48 standards[8].	7.4 and meet § 268.48 standards.[8]
D042	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,6-Tricholorphenol.	88–06–2	0.035 and meet § 268.48 standards[8].	7.4 and meet § 268.48 standards.[8]
D043	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.	Vinyl chloride	75–01–4	0.27 and meet § 268.48 standards[8].	6.0 and meet § 268.48 standards.[8]
	* * *	*	*	*	*
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carton steel; and (6) chemical etching and milling of aluminum.	Cadmium	7440–43–9	.069	0.19 mg/l TCLP.
		* *	*	*	*
		Silver	7440–22–4	NA	0.30 mg/l TCLP.
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440–43–9	NA	0.19 mg/l TCLP.
		* *	*	*	*

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters (Concentration in mg/l [3], or technology code [4])	Nonwastewaters (Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code)
		Common name	CAS [2] No.		
*	* *	*	*	*	*
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total) [7] ...	57–12–5	1.2	590.
		Cyanides (Amenable) [7].	57–12–5	0.86	NA.
*	* *	*	*	*	*
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from noncontact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and KO51 wastes are not included in this listing.	Acenaphthene	83–32–9	0.059	3.4.
		* *	*	*	*
		Nickel	7440–02–0	NA	5.0 mg/l TCLP.
*	* *	*	*	*	*
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	Acenaphthylene	208–96–8	0.059	NA.
		* *	*	*	*
		Acetonitrile	75–05–8	5.6	NA.
		* *	*	*	*
		Carbon disulfide	75–15–0	3.8	NA.
		* *	*	*	*
		2-Chloro-1,3-butadiene.	126–99–8	0.057	NA.
		* *	*	*	*
		Cyclohexanone	108–94–1	0.36	NA
		* *	*	*	*
		1,4-Dioxane	123–91–1	12.0	170.
		Diphenylamine (difficult to distinguish from diphenylnitrosamine).	122–39–4	0.92	NA.
		Diphenylnitrosamine (difficult to distinguish from diphenylamine).	86–30–6	0.92	NA.
		1,2-Diphenylhydrazine.	122–66–7	0.087	NA.
		* *	*	*	*
		Methanol	67–56–1	5.6	NA.
		* *	*	*	*

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters (Concentration in mg/l [3], or technology code [4])	Nonwastewaters (Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code)
		Common name	CAS [2] No.		
		N-Nitrosodimethylamine.	62–75–9	0.40	NA.
		* * *	*	*	*
		Phthalic anhydride	85–44–9	0.055	NA.
		* * *	*	*	*
		tris(2,3-Dibromopropyl) phosphate.	126–72–7	0.11	NA.
		* *	*	*	*
		Beryllium	7440–41–7	0.82	NA.
		* *	*	*	*
		Cyanides (Amenable).	57–12–5	0.86	NA.
		Fluoride	16964–48–8	35	NA.
		* *	*	*	*
		Thallium	7440–28–0	1.4	NA.
		Vanadium	7440–62–2	4.3	NA.
	* * *	*	*	*	*
K006	Wastewater treatement sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP.
		Lead	7439–92–1	0.69	0.37 mg/l TCLP.
	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP.
		Lead	7439–92–1	0.69	0.37 mg/l TCLP.
	* * *	*	*	*	*
K008	Oven residue from the production of chrome oxide green pigments.	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP.
		Lead	7439–92–1	0.69	0.37 mg/l TCLP.
	* * *	*	*	*	*
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP.
		Lead	7439–92–1	0.69	0.37 mg/l TCLP.
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP.
	* * *	*	*	*	*
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazide (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN.	CMBST.
	* * *	*	*	*	*
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.	Acetonitrile	75–05–8	5.6	1.8.
		Acetophenone	96–86–2	0.010	9.7.
		Aniline	62–53–3	0.81	14.
		Benomyl	17804–35–2	0.056	1.4.
		Benzene	71–43–2	0.14	10.
		Carbaryl	63–25–2	0.006	0.14.
		Carbenzadim	10605–21–7	0.056	1.4.
		Carbofuran	1563–66–2	0.006	0.14.
		Carbosulfan	55285–14–8	0.028	1.4.
		Chlorobenzene	108–90–7	0.057	6.0.
		Chloroform	67–66–3	0.046	6.0.
		o-Dichlorobenzene	95–50–1	0.088	6.0.
		Methomyl	16752–77–5	0.028	0.14.
		Methylene chloride	75–09–2	0.089	30.
		Methyl ethyl ketone	78–93–3	0.28	36.
		Naphthalene	91–20–3	0.059	5.6.
		Phenol	108–95–2	0.039	6.2.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters (Concentration in mg/l [3], or technology code [4])	Nonwastewaters (Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code)
		Common name	CAS [2] No.		
		Pyridine	110–86–1	0.014	16.
		Toluene	108–88–3	0.080	10.
		Triethylamine	121–44–8	0.081	1.5.
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.	Carbon tetrachloride	56–23–5	0.057	6.0.
		Chloroform	67–66–3	0.046	6.0.
		Chloromethane	74–87–3	0.19	30.
		Methomyl	16752–77–5	0.028	0.14.
		Methylene chloride	75–09–2	0.089	30.
		Methyl ethyl ketone	78–93–3	0.28	36.
		o-Phenylenediamine	95–54–5	0.056	5.6.
		Pyridine	110–86–1	0.014	16.
		Triethylamine	121–44–8	0.081	1.5.
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes.	Benomyl	17804–35–2	0.056	1.4.
		Benzene	71–43–2	0.14	10.
		Carbenzadim	10605–21–7	0.056	1.4.
		Carbofuran	1563–66–2	0.006	0.14.
		Carbosulfan	55285–14–8	0.028	1.4.
		Chloroform	67–66–3	0.046	6.0.
		Methylene chloride	75–09–2	0.089	30.
		Phenol	108–95–2	0.039	6.2.
K159	Organics from the treatment of thiocarbamate wastes.	Benzene	71–43–2	0.14	10.
		Butylate	2008–41–5	0.042	1.4.
		EPTC (Eptam)	759–94–4	0.042	1.4.
		Molinate	2212–67–1	0.042	1.4.
		Pebulate	1114–71–2	0.042	1.4.
		Vernolate	1929–77–7	0.042	1.4.
K160	Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarabamates and solids from the treatment of thiocarbamate wastes.	Butylate	2008–41–5	0.042	1.4.
		EPTC (Eptam)	759–94–4	0.042	1.4.
		Molinate	2212–67–1	0.042	1.4.
		Pebulate	1114–71–2	0.042	1.4.
		Toluene	108–88–3	0.080	10.
		Vernolate	1929–77–7	0.042	1.4.
K161	Purifcation solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings, from the production of dithiocarbarmate acids and their salts.	Antimony	7440–36–0	1.9	2.1mg/l TCLP.
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP.
		Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP.
		Dithiocarbamates (total).	NA	0.028	28.
		Lead	7439–92–1	0.069	0.37 mg/l TCLP.
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP.
		Selenium	7782–49–2	0.82	0.16 mg/l TCLP.
*	* *	*	*	*	*
P093	Phenylthiourea	Phenylthiourea	103–85–5	(WETOX or CHOXD) fb CARBN; or CMBST.	CMBST.
*	* *	*	*	*	*
P196	Manganese dimethyldithiocarbamate	Dithiocarbamates (total).	NA	0.028	28.
*	* *	*	*	*	*
P202	M-Cumenyl methylcarbamate	m-Cumenyl methycarbamate.	64–00–6	0.056	1.4.

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters (Concentration in mg/l [3], or technology code [4])	Nonwastewaters (Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code)
		Common name	CAS [2] No.		
	* * *	*	*	*	*
P205	Ziram	Dithiocarbamates (total).	NA	0.028	28.
	* * *	*	*	*	*
U277	Sulfallate	Dithiocarbamates (total).	NA	0.028	28.
U278	Bendiocarb	Bendiocarb	22781–23–3	0.056	1.4.
	* * *	*	*	*	*
U365	Molinate	Molinate	2212–67–1	0.042	1.4.
U366	Dazomet	Dithiocarbamates (total).	NA	0.028	28.
	* * *	*	*	*	*
U375	3-Iodo-2-propynyl n-butylcarbamate	3-Iodo-2-propynyl n-butylcarbamate.	55406–53–6	0.056	1.4.
U376	Selenium, tetrakis (dimethyldithio- carbamate)	Dithiocarbamates (total).	NA	0.028	28.
	Selenium	Selenium	7782–49–2	0.82	0.16 mg/l TCLP.
U377	Pottasium n-methyldithiocarbamate	Dithiocarbamates (total).	NA	0.028	28.
U378	Potassium n-hydroxymethyl-n-methyldithiocarbamate.	Dithiocarbamates (total).	NA	0.028	28.
U379	Sodium dibutyldithiocarbamate	Dithiocarbamates (total).	NA	0.028	28.
U381	Sodium diethyldithiocarbamate	Dithiocarbamates (total).	NA	0.028	28.
U382	Sodium dimethyldithiocarbamate	Dithiocarbamates (total).	NA	0.028	28.
U383	Potassium dimethyl dithiocarbamate	Dithiocarbamates (total).	NA	0.028	28.
U384	Metam Sodium	Dithiocarbamates (total).	NA	0.028	28.
U385	Vernolate	Vernolate	1929–77–7	0.042	1.4.
U386	Cycloate	Cycloate	1134–23–2	0.042	1.4.
U387	Prosulfocarb	Prosulfocarb	52888–80–9	0.042	1.4.
U389	Triallate	Triallate	2303–17–5	0.042	1.4.
U390	EPTC	EPTC	759–94–4	0.042	1.4.
U391	Pebulate	Pebulate	1114–71–2	0.042	1.4.
U392	Butylate	Butylate	2008–41–5	0.042	1.4.
U393	Copper dimethyldithiocarbamate	Dithiocarbamates (total).	NA	0.028	28.
U394	A2213	A2213	30558–43–1	0.042	1.4.
U395	Diethylene glycol, dicarbamate	Diethylene glycol, dicarbamate.	5952–26–1	0.056	1.4.
U396	Ferbam	Dithiocarbamates (total).	NA	0.028	28.
U400	Bis (pentamethylene) thiuram tetrasulfide	Dithiocarbamates (total).	NA	0.028	28.
U401	Tetramethyl thiuram monosulfide	Dithiocarbamates (total).	NA	0.028	28.
U402	Tetrabutylthiuram disulfide	Dithiocarbamates (total).	NA	0.028	28.
U403	Disulfiram	Dithiocarbamates (total).	NA	0.028	28.
U404	Triethylamine	Triethylamine	101–44–8	0.081	1.5.
U407	Ethyl Ziram	Dithiocarbamates (total).	NA	0.028	28.
U409	Thiophanate-methyl	Thiophanate-methyl	23564–05–8	0.056	1.4.
U410	Thiodicarb	Thiodicarb	59669–26–0	0.019	1.4.
U411	Propoxur	Propoxur	114–26–1	0.056	1.4.

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264 Subpart O or Part 265 Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * * * *

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[8] These wastes, when rendered nonhazardous and then subsequently managed in CWA, CWA-equivalent, or Class I SDWA systems are not subject to treatment standards. (See § 148.1(d) and § 268.1(c) (3) and (4)).

[9] These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well are not subject to treatment standards. (See § 148.1(d)).

10. In subpart D, § 268.48 the table in paragraph (a) is revised to read as follows:

§ 268.48 Universal treatment standards.

(a) * * *

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable.]

Regulated constituent/common name	CAS [1] No.	Wastewater standard (Concentration in mg/l [2])	Nonwastewater Pstandard (Concentration in mg/kg [3] unless noted as ''mg/l TCLP'')
* * * *	*	*	*
A2213	30558–43–1	0.042	1.4
* * * *	*	*	*
Butylate	2008–41–5	0.042	1.4
* * * *	*	*	*
Cycloate	1134–23–2	0.042	1.4
* * * *	*	*	*
EPTC	759–94–4	0.042	1.4
* * * *	*	*	*
Molinate	2212–67–1	0.042	1.4
* * * *	*	*	*
Pebulate	1114–71–2	0.042	1.4
* * * *	*	*	*
Prosulfocarb	52888–80–9	0.042	1.4
* * * *	*	*	*
Triallate	2303–17–5	0.042	1.4
* * * *	*	*	*
Vernolate	1929–77–7	0.042	1.4
* * * *	*	*	*

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.

[2] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[3] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * *

[FR Doc. 96–16540 Filed 6–27–96; 8:45 am]
BILLING CODE 6560–50–P

40 CFR Part 279

[FRL–5529–1]

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Recycled Used Oil Management Standards

AGENCY: Environmental Protection Agency.

ACTION: Final rule, notice of judicial vacatur of administrative stay.

SUMMARY: On January 19, 1996, the United States Court of Appeals for the District of Columbia Circuit vacated the Environmental Protection Agency's (EPA) October 30, 1995, administrative stay of part of the regulatory provision, known as the ''used oil mixture rule', set forth in 40 CFR 279.10(b)(2). The provisions of the used oil mixture rule at issue relate to mixtures of used oil destined for recycling and characteristic hazardous waste (including waste listed as hazardous because it exhibits a hazardous waste characteristic). This action clarifies the regulatory status of mixtures of used oil and the hazardous wastes destined for recycling described above in light of the Court's vacatur of the administrative stay and eliminates the explanatory note to 40 CFR 279.10(b)(2) that was included in the notice of the administrative stay. In addition it notifies the public as to the provisions of a recent EPA proposal that may affect such mixtures.

EFFECTIVE DATE: June 28, 1996.

ADDRESSES: EPA does not seek comment on this notice, however any data the public wishes EPA to consider concerning mixtures of used oil and characteristic hazardous waste should be submitted to the public docket. Submissions should include the original and two copies, should reference docket No. F–96–U2SW–FFFFF, and should be addressed to: RCRA Docket Information Center, Office of Solid Waste (5305W), U.S. Environmental Protection Agency Headquarters, 401 M Street, SW., Washington, DC 20460. Hand deliveries should be made to the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9:00 to 4:00, Monday through Friday, except federal holidays. To review docket materials at the RIC, it is recommended that the public make an appointment by calling 703 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at 800 424–9346 or TDD 800 553–7672 (hearing impaired). In the Washington D.C. metropolitan area at 703 412–9810 or TDD 703 412–3323. For more detailed information on specific aspects of this action, contact Tracy Bone, Office of Solid Waste (5304w), U.S. EPA, D.C., 20460 at 703 308–8826.

SUPPLEMENTARY INFORMATION:

Background Information

Legal Challenge to the Used Oil Mixture Rule. On September 10, 1992, EPA promulgated regulations pursuant to section 3014(a) of the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. 6935(a), governing the management of used oil destined for recycling. 57 FR 41566 (September 9, 1992). These regulations are codified at 40 CFR Part 279. As part of these regulations, EPA promulgated a used oil mixture rule, 40 CFR 279.10(b), that specifies when mixtures of used oil destined for recycling and hazardous waste are regulated as used oil and when they are regulated as hazardous waste. Among other things, the used oil mixture rule specifies that mixtures of used oil destined for recycling and characteristic hazardous waste are regulated as a hazardous waste under Subtitle C of RCRA only if the resultant mixture exhibits a hazardous waste characteristic. 40 CFR 279.10(b)(2)(I). If the mixture does not exhibit a hazardous waste characteristic, it is regulated under the used oil management standards, and the hazardous waste regulations (including those relating to land-disposal restrictions (LDRs)) are inapplicable to the mixture. Further, wastes which are hazardous solely because they exhibit the characteristic of ignitability may be mixed with used oil and the mixture regulated as used oil so long as the mixture does not exhibit the characteristic of ignitability (despite exhibiting any of the other characteristics). 40 CFR 279.10(b)(2)(ii)-(iii). The hazardous waste regulations and LDR requirements continue to apply to the hazardous waste prior to mixing with used oil.

Petitions for review challenging EPA's used oil mixture rule subsequently were filed in the United States Court of Appeals for the District of Columbia Circuit. Petitioners argued, in relevant part, that the provision of the management standards which governed mixtures of recycled used oil and characteristic hazardous waste was inconsistent with the Court's decision in *Chemical Waste Management, Inc.* v. *EPA,* 976 F.2d 2 (D.C. Cir. 1992), *cert. denied,* 113 S. Ct. 1961 (1993) (''Chem Waste''). *Chem Waste,* which was issued two weeks after the management standards were promulgated, held that EPA could not allow certain wastes exhibiting the hazardous characteristics of ignitability, reactivity, or corrosivity to be diluted to eliminate the characteristic and then be land-disposed unless the hazardous constituents in the waste were adequately treated to minimize threats to human health and the environment.

On September 12, 1994, petitioner, Safety-Kleen, and EPA filed a joint motion requesting the Court to vacate the mixture provision and remand the issue to EPA. Intervenors in the *Safety-Kleen* litigation opposed this motion. On September 15, 1994, the Court remanded the record in this matter to EPA, stating: ''If the EPA determines that its rule is invalid, [citation omitted], it can proceed accordingly.'' Order (Sept. 15, 1994) (citing *American Tele. & Telegraph Co.* v. *FCC,* 978 F.2d 727, 733 (D.C. Cir. 1992)). The Court did not vacate the mixture rule.

Administrative Stay of the Used Oil Mixture Rule. In 1995, EPA issued an order staying the used oil mixture rule. The Agency determined that a stay was necessary to the effective implementation of the recycled used oil management program, pending the Agency's completion of a rulemaking on the issue of whether the used oil mixture rule should be modified or repealed in light of the Court's decision in *Chem Waste.* See 60 FR 55202 (Oct. 30, 1995).

On January 19, 1996, the Court, in ruling on a motion filed by the intervenors, vacated the Administrative stay. The Court explained that EPA could not suspend a promulgated rule without notice and comment. The Court further noted that, if EPA determines that the used oil mixture rule is invalid, it may be able to rely on the good cause exception, 5 U.S.C. 553(b), to vacate the rule without notice and comment rulemaking.

Effect of the Court's Vacatur of the Administrative Stay. The vacatur of the administrative stay reinstates the used oil mixture rule found at 40 CFR 279.10(b)(2) as part of the federal used oil management standards. Accordingly, as a matter of federal RCRA law, the regulated community may mix certain characteristic hazardous wastes and used oil to be recycled (*e.g.*, mixtures of solvents compatible with the use of

Corrections

Federal Register
Vol. 61, No. 133
Wednesday, July 10, 1996

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[EPA #530-Z-96-002; FRL-5438-3]

RIN 2050-AD38

Land Disposal Restrictions Phase III-Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners

Correction

In rule document 96–7597 beginning on page 15566 in the issue of Monday, April 8, 1996 make the following corrections:

§268.40 [Corrected]

1. Beginning on page 15601, in the table Treatment Standards for Hazardous Wastes, the following entries are reprinted to correct typographical errors.

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

(Note: NA means not applicable.)

Waste code	Waste description and treatment/regulatory subcategory[1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS[2] No.	Concentration in mg/l[3]; or technology code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or technology code
F001, F002, F003, F004, & F005	F001, F002, F003, F004, and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluorethane, trichloroethylene, trichloromonofluoromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in § 261.31.	Acetone	67–64–1	0.28	160
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
F025	Condensed light ends from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution F025 - Light Ends Subcategory.	Carbon tetrachloride	56–23–5	0.057	6.0
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	Acenaphthylene	208–96–8	0.059	3.4
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene.	207–08–9	0.11	6.8
		1,2-Dibromo-3-chloropropane	96–12–8	0.11	15
		o,p′-DDD	53–19–0	0.023	0.087
		N-Nitrosopyrrolidine	930–55–2	0.013	35
		1,1,2,2-Tetrachloroethane	79–34–6	0.057	6.0
K015	Still bottoms from the distillation of benzyl chloride.	Anthracene	120–12–7	0.059	3.4
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production..	bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
		Chloroform	67–66–3	0.046	6.0
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	Benzene	71–43–2	0.14	10
		Benz(a)anthracene	56–55–3	0.059	3.4
P007	5-Aminomethyl 3-isoxazolol	5-Aminomethyl 3-isoxazolol	2763–96–4	(WETOX or CHOXD) fb CARBN; or CBMST	CMBST
P010	Arsenic acid	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
P011	Arsenic pentoxide	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
P012	Arsenic trioxide	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
P038	Diethylarine	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
P074	Nickel-cyanide	Cyanides (Total)[7]	57–12–5	1.2	590

		Cyanides (Amenable[7]	57–12–5	0.86	30
P087	Osmium tetroxide	Osmium tetroxide	20816–12–0	RMETL; or RTHRM	RMETL; or RTHRM
P099		Cyanides (Amenable)[7]	57–12–5	0.86	30
		Silver	7440–22–4	.043	0.30 mg/l TCLP
U099	1,2-Dimethylhydrazine	1,2-Dimethylhydrazine	540–73–8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U107	Di-n-octyl phthalate	Di-n-octyl phthalate	117–84–0	0.017	28
U172	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-butylamine	924–16–3	0.40	17
U173	N-Nitrosodiethanolamine	N-Nitrosodiethylamine	1116–54–7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U174	N-Nitrosodiethylamine	N-Nitrosodiethanolamine	55–18–5	0.40	28

BILLING CODE 1505–01–D

Federal Register

Monday
August 26, 1996

Part V

Environmental Protection Agency

40 CFR Parts 268 and 271

Emergency Revision of the Land Disposal Restrictions (LDR) Phase III Treatment Standards for Listed Hazardous Wastes From Carbamate Production; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 268 and 271

[EPA # 530–Z–96–002; FRL–5560–1]
RIN 2050–AD38

Emergency Revision of the Land Disposal Restrictions (LDR) Phase III Treatment Standards for Listed Hazardous Wastes From Carbamate Production

AGENCY: Environmental Protection Agency (EPA, the Agency).

ACTION: Immediate final rule.

SUMMARY: On April 8, 1996, EPA published treatment standards (the ''Phase III'' final rule) for a number of hazardous wastes associated with the production of carbamate pesticides (''carbamate wastes'') (61 FR 15566, April 8, 1996). The treatment standards were expressed as levels of chemical constituents that had to be measured in treatment residues before land disposal. They became effective July 8, 1996.

The Agency recently has become aware, however, of a serious analytic monitoring problem associated with the carbamate constituent treatment standards. Laboratory standards (chemicals used to calibrate laboratory instruments) do not exist for every carbamate constituent. Since commercial laboratories currently are unable to analyze all of the carbamate waste constituents, treatment facilities cannot certify that the LDR treatment standards have been achieved. Today's final rule revises the carbamate waste treatment standards for one year from the date of publication by allowing carbamate wastes to be treated either by any technology which achieves the constituent concentration levels promulgated in the Phase III rule, or by treatment technologies specified in this final rule as alternative treatment standards. This rule also suspends the requirement to treat carbamate waste constituents when they are expected to be present in ignitable, corrosive, reactive or toxic hazardous wastes as ''underlying hazardous constituents.''

The Agency believes that these temporary alternative treatment standards will assure that carbamate wastes are adequately treated prior to land disposal, while providing time for analytic chemical standards to be developed. At the end of the year EPA expects that laboratories will be able to perform the analyses necessary to measure compliance with treatment levels. At that time, therefore, the LDR treatment standards for carbamate wastes will revert to those originally promulgated in the Phase III rule.

EFFECTIVE DATE: August 26, 1996.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–P32F–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For technical information on the carbamate treatment standards, contact Shaun McGarvey in the Office of Solid Waste, phone 703–308–8603. For specific information about this rule, contact Rhonda Craig, phone 703–308–8771.

SUPPLEMENTARY INFORMATION:

I. Background

The Phase III final rule established treatment standards for 64 listed hazardous wastes associated with carbamate pesticide production (61 FR 15583; see also the attached appendix for the list of carbamate wastes). The treatment standards were at Universal Treatment Standard (UTS) levels for 21 of the constituents of concern (16 organic constituents and 5 metals), and at newly-established levels for 42 other constituents that were added to the UTS list.

The wastewater standards for the 42 new constituents were based on data developed by the Office of Water for the development of effluent guideline limitations, or on data transferred from other UTS constituents. These data reflected performance of biodegradation, combustion, carbon adsorption, or chemical oxidation.

There were no sampling data from treatment of carbamate nonwastewaters at the time treatment standards were being developed; thus, the nonwastewater treatment standard levels were calculated using analytical detection limits, based on EPA's experience that combustion technologies destroy organic constituents to nondetectable levels. To account for variability, the treatment standards were based on the detection limit for the waste constituent times a variability factor. (See BDAT Background Document for Carbamates at 4–4 through 4–9.)

During the comment period for the Phase III proposed rule, EPA became aware that commenters thought a number of the 42 constituents with newly-established UTS levels did not have EPA-recommended analytical methods for measuring compliance. Furthermore, some commenters noted that laboratory standards were not available for some of the constituents. Thus, laboratories would not be able to calibrate their instruments to measure compliance with treatment standards for those constituents. EPA responded that analytical methods had been recommended for all carbamate waste constituents, and that analytical standards were expected to become available prior to the Phase III effective date, as laboratories geared up for the new regulation.

After EPA published the Phase III rule on April 8, 1996, but shortly before the treatment standards took effect on July 8, several companies in the waste management industry again contacted EPA reporting that analytic laboratory standards were in fact not available for some of the carbamate waste constituents. The Agency contacted several laboratories (see Memorandum to the Docket from Shaun McGarvey, EPA, August 1, 1996). EPA now agrees that the waste management industry was unintentionally left in a quandary: they were required to certify compliance with the carbamate waste treatment standards but commercial laboratories indicated that they were only able to perform the necessary analyses for some of the newly regulated constituents. Thus, it would be impossible to document that the treatment standards were or were not achieved for those constituents which cannot be analyzed.

The problem was complicated by the LDR rules that pertain to regulation of underlying hazardous constituents (UHCs) in characteristic (or formerly characteristic) hazardous wastes. Because 42 new carbamate constituents have been added to the UTS list (61 FR 15584), they thus become UHCs. Under the regulations published on May 24, 1993 (the ''Emergency Rule,'' 58 FR 29860; codified at 40 CFR 268.2(i), 268.7(a) and 268.9), and on September 19, 1994 (Phase II Rule, 59 FR 47982; same citations as above), whenever a generator sends a characteristic (or formerly-characteristic) waste to a treatment facility, they must identify for treatment not only the hazardous characteristic, but also all UHCs reasonably expected to be present in the waste at the point of generation. Because of the lack of laboratory

standards for all carbamate constituents, generators could not in all cases identify the UHCs reasonably expected to be present in their wastes, and treatment facilities and EPA could not monitor compliance with the standards for the carbamate UHCs.

II. The Revised Carbamate Treatment Standards

This final rule establishes temporary treatment standards for carbamate wastes for a one-year period. EPA believes that one year is sufficient time for laboratory standards to be developed and for laboratories to take appropriate steps to do the necessary analyses for these wastes. The temporary alternative treatment standards will be in effect for one year from the date of publication of this final rule.

The Phase III rule required treatment of carbamate wastes to UTS levels. The temporary alternative standards being promulgated today provide waste handlers with a choice of meeting the Phase III treatment levels, or of using a specified treatment technology. Combustion is the specified technology for nonwastewaters; combustion, biodegradation, chemical oxidation, and carbon adsorption are the specified technologies for wastewaters. These technologies are defined at 40 CFR 268.42, Table 1 (see technology codes: BIODG, CARBN, CHOXD, and CMBST). If the wastes are treated by a specified technology, there is no requirement to measure compliance with treatment levels (thus the analytical problems are avoided). Because the performance of these Best Demonstrated Available Technologies (BDATs) was the basis of the originally promulgated treatment levels, EPA believes that temporarily allowing the use of these BDATs—without a requirement to monitor the treatment residues—fully satisfies the core requirement of the LDR program: hazardous wastes must be effectively treated before they are land disposed.

EPA considered completely replacing the carbamate treatment standard levels with specified treatment methods, rather than providing the alternative approach being promulgated in this rule. EPA decided it was better to retain the treatment levels (along with the alternative treatment methods) and let the regulated community decide which treatment standards to meet. EPA believes that it is important to retain the treatment levels because laboratories may be ready to analyze all carbamate waste constituents before the end of the year. Furthermore, it is possible that a carbamate waste would not contain any of the problem constituents that cannot be analyzed at this time. Thus compliance with the treatment levels for such a waste could easily be measured.

The Agency's preference, ultimately, is to establish only constituent treatment standard levels for these wastes. The Agency believes that compliance with treatment levels provides maximum flexibility in selecting treatment technologies, while ensuring that the technologies are optimally operated to achieve full waste treatment. Therefore, the alternative specified treatment technologies only temporarily satisfy the LDR treatment standards. The treatment standards will revert exclusively to treatment levels at the end of one year.

The Agency is also temporarily suspending inclusion of carbamate waste constituents on the UTS list at 40 CFR 268.48. Not including these constituents on the UTS list elimiantes the need to identify and treat them, and monitor compliance with their UTS levels, when they are present as UHCs in characteristic hazardous wastes.

The Agency believes that suspending the carbamate constituents from the UTS list will not have adverse environmental consequences because it will be in effect for only one year. Furthermore, EPA found in the Phase III rulemaking that these constituents are unlikely to occur in wastes generated outside the carbamate production industry (61 FR 15584, April 8, 1996), so today's rule may not cause an adverse environmental impact because carbamate constituents simply are not present in most characteristic hazardous wastes.

III. Good Cause for Foregoing Notice and Comment Requirements

This final rule is being issued without notice and opportunity for public comment. Under the Administrative Procedure Act (APA), 5 U.S.C. 553(b)(B), an agency may forgo notice and comment in promulgating a rule when, according to the APA, the agency for good cause finds (and incorporates the finding and a brief statement of the reasons for that finding into the rules issues) that notice and public comments procedures are impracticable, unnecessary, or contrary to the public interest. For the reasons set forth below, EPA believes it has good cause to find that notice and comment would be unnecessary and contrary to the public interest, and therefore is not required by the APA.

First, the Agency has discovered an unanticipated unavailability of analytic laboratory standards for a number of the carbamate waste constituents covered by the Phase III rule. As a practical matter, therefore, members of the regulated community cannot fully document compliance with the requirements of the treatment standard through no fault of their own. For the same reason, EPA cannot ascertain compliance for these constituents.

In addition, this unavailability of analytic standards is likely to create a serious disruption in the production of at least some carbamate pesticides. Although the treatment of the restricted carbamate wastes through biodegradation, carbon adsorption, chemical oxidation (for wastewaters), and combustion is both possible and highly effective, certification that the treatment actually meets the treatment standard levels may not be possible in many instances. Without the certification, disposal of the residuals left after treatment cannot legally occur. The Agency believes this situation will quickly impede production of certain pesticides, since legal disposal of some carbamate wastes will no longer be available. *See Steel Manufacturers Ass'n* v. *EPA,* 27 F.3d 642, 646–47 (D.C. Cir. 1994) (absence of a treatment standard providing a legal means of disposing of wastes from a process is equivalent to shutting down that process). With regard to the suspension of certain carbamates as underlying hazardous constituents in characteristic (and formerly-characteristic) prohibited wastes, the Agency believes that the same practical difficulties described for listed carbamate wastes would be created.

Finally, today's rule merely removes, on a temporary basis, an administrative hurdle that would impede sound management of certain hazardous wastes. By altering the treatment standard to allow certification of compliance, the Agency can ensure that treatment through use of the BDAT basis of the treatment standard levels actually occurs without delay.

Consequently, EPA today is preserving the core of the promulgated Phase III rule by ensuring that the restricted carbamate wastes are treated by a BDAT before they are land disposed. At the same time, EPA is eliminating the situation which could halt production of carbamate pesticides. For these reasons, EPA believes there is good cause to issue the rule immediately without prior notice and opportunity for comment.

IV. Rationale for Immediate Effective Date

The Agency believes that the regulated community is in the untenable position of having to comply with treatment standards for which there is not an analytical way to measure

compliance. Therefore, it is imperative that relief be immediately provided from those treatment standards. In addition, today's rule does not create additional regulatory requirements; rather, it provides greater flexibility for compliance with treatment standards. For these reasons, EPA finds that good cause exists under section 3010(b)(3) of RCRA, 42 U.S.C. 6903(b)(3), to provide for an immediate effective date. See generally 61 FR at 15662. For the same reasons, EPA finds that there is good cause under 5 U.S.C. 553(b)(3) to waive the requirement that regulations be published at least 30 days before they become effective.

V. Analysis Under Executive Order 12866, the Unfunded Mandates Reform Act of 1995, the Regulatory Flexibility Act, and the Paperwork Reduction Act

This final rule does not create new regulatory requirements; rather, it provides a temporary alternative means to comply with the treatment standards already promulgated. Therefore, this final rule is not a ''significant'' regulatory action within the meaning of Executive Order 12866.

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector, and does not impose any Federal mandate on State, local, or tribal governments or the private sector within the meaning of the Unfunded Mandates Reform Act of 1995. This final rule does not create new regulatory requirements; rather, it provides a temporary alternative means to comply with the treatment standards already promulgated. EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA. For the same reasons, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments.

EPA has determined that this rule will not have a significant economic impact on a substantial number of small entities. EPA recognizes that small entities may own and/or operate carbamate pesticide manufacturing operations or TSDFs that will become subject to the requirements of the land disposal restrictions program. However, since such small entities are already subject to the requirements in 40 CFR part 268, this rule does not impose any additional burdens on these small entities, because this rule does not create new regulatory requirements. Rather, it provides a temporary alternative means to comply with the treatment standards already promulgated.

Therefore, EPA provides the following certification under the Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act. Pursuant to the provision at 5 U.S.C. 605(b), I hereby certify that this final rule will not have a significant economic impact on a substantial number of small entities. It does not impose any new burdens on small entities. This rule, therefore, does not require a regulatory flexibility analysis.

Today's rule does not contain any new information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* Because there are no new information collection requirements in today's rule, an Information Collection Request has not been prepared.

VI. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's Federal Register. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VII. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR Part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Today's rule is being promulgated pursuant to section 3004(m), of RCRA (42 U.S.C. 6924(m)). Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies

the Federal program requirements that are promulgated pursuant to HSWA. States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble.

B. Effect on State Authorization

As noted above, EPA will implement today's rule in authorized States until they modify their programs to adopt these rules and the modification is approved by EPA. Because today's rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. All HSWA interim authorizations will expire January 1, 2003. (See § 271.24 and 57 FR 60132, December 18, 1992.)

In general, EPA recommends that States pay close attention to the sunset date for today's rule. If States are adopting the Phase III rule before the sunset date of today's rule, and applying for authorization, EPA strongly encourages these States to adopt today's rule when they adopt the April 8, 1996, Phase III rule. States should note that after the sunset date, the provisions of this rule will be considered less stringent. Thus, States would be barred under section 3009 of RCRA, from adopting this rule after the date one year from the date of publication of today's rule, and would not be able to receive authorization for it. States that are planning to adopt and become authorized for today's rule and the Phase III rule should factor the sunset date into their rulemaking activities.

Appendix to Preamble —List of Regulated Carbamate Wastes

K156—Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.
K157—Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.
K158—Bag house dust, and filter/separation solids from the production of carbamates and carbamoyl oximes.
K159—Organics from the treatment of thiocarbamate wastes.
K160—Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes.
K161—Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust, and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)
P203 Aldicarb sulfone
P127 Carbofuran
P189 Carbosulfan
P202 m-Cumenyl methylcarbamate
P191 Dimetilan
P198 Formetanate hydrochloride
P197 Formparanate
P192 Isolan
P196 Manganese dimethyldithiocarbamate
P199 Methiocarb
P190 Metolcarb
P128 Mexacarbate
P194 Oxamyl
P204 Physostigmine
P188 Physostigmine salicylate
P201 Promecarb
P185 Tirpate
P205 Ziram
U394 A2213
U280 Barban
U278 Bendiocarb
U364 Bendiocarb phenol
U271 Benomyl
U400 Bis(pentamethylene)thiuram tetrasulfide
U392 Butylate
U279 Carbaryl
U372 Carbendazim
U367 Carbofuran phenol
U393 Copper dimethyldithiocarbamate
U386 Cycloate
U366 Dazomet
U395 Diethylene glycol, dicarbamate
U403 Disulfiram
U390 EPTC
U407 Ethyl Ziram
U396 Ferbam
U375 3–Iodo-2-propynyl n-butylcarbamate
U384 Metam Sodium
U365 Molinate
U391 Pebulate
U383 Potassium dimethyl dithiocarbamate
U378 Potassium n-hydroxymethyl-n-methyldithiocarbamate
U377 Potassium n-methyldithiocarbamate
U373 Propham
U411 Propoxur
U387 Prosulfocarb
U376 Selenium, tetrakis (dimethyldithiocarbamate)
U379 Sodium dibutyldithiocarbamate
U381 Sodium diethyldithiocarbamate
U382 Sodium dimethyldithiocarbamate
U277 Sulfallate
U402 Tetrabutylthiuram disulfide
U401 Tetramethylthiuram monosulfide
U410 Thiodicarb
U409 Thiophanate-methyl
U389 Triallate
U404 Triethylamine
U385 Vernolate

List of Subjects

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: August 20, 1996.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart D—Treatment Standards

2. Section 268.40 is amended by adding paragraph (g) and by revising in the table ''Treatment Standards for Hazardous Wastes'' the entries for K156–K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411; to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

(g) Between August 26, 1996 and August 26, 1997 the treatment standards for the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K156–K161; and in 40 CFR 261.33 as EPA Hazardous Waste numbers P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411; and soil contaminated with these wastes; may be satisfied by either meeting the constituent concentrations presented in the table ''Treatment Standards for Hazardous Wastes'' in this section, or by treating the waste by the following technologies: combustion, as defined by the technolgy code CMBST at § 268.42 Table 1, for nonwastewaters; and, biodegradation as definded by the technolgy code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technolgy code CMBST at § 268.42 Table 1, for wastewaters.

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP" or technology code
*	* *	* * *		*	
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes [10].	Acetonitrile	75–05–8	5.6	1.8
		Acetophenone	96–86–2	0.010	9.7
		Aniline	62–53–3	0.81	14
		Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbaryl	63–25–2	0.006	0.14
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Naphthalene	91–20–3	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyridine	110–86–1	0.014	16
		Toluene	108–88–3	0.080	10
		Triethylamine	121–44–8	0.081	1.5
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes [10].	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		o-Phenylenediamine	95–54–5	0.056	5.6
		Pyridine	110–86–1	0.014	16
		Triethylamine	121–44–8	0.081	1.5
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes [10].	Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chloroform	67–66–3	0.046	6.0
		Methylene chloride	75–09–2	0.089	30
		Phenol	108–95–2	0.039	6.2
K159	Organics from the treatment of thiocarbamate wastes [10]	Benzene	71–43–2	0.14	10
		Butylate	2008–41–5	0.003	1.5
		EPTC (Eptam)	759–94–4	0.003	1.4
		Molinate	2212–67–1	0.003	1.4

		Pebulate	1114–71–2	0.003	1.4
		Vernolate	1929–77–7	0.003	1.4
K160	Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarabamates and solids from the treatment of thiocarbamate wastes [10].	Butylate	2008–41–5	0.003	1.5
		EPTC (Eptam)	759–94–4	0.003	1.4
		Molinate	2212–67–1	0.003	1.4
		Pebulate	1114–71–2	0.003	1.4
		Toluene	108–88–3	0.080	10
		Vernolate	1929–77–7	0.003	1.4
K161	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts [10].	Antimony	7440–36–0	1.9	2.1 mg/l TCLP
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
		Dithiocarbamates (total)	137–30–4	0.028	28
		Lead	7439–92–1	0.69	0.37 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
		Selenium	7782–49–2	0.82	0.16 mg/l TCLP
*	* *	*	* *	*	
P127	Carbofuran [10]	Carbofuran	1563–66–2	0.006	0.14
P128	Mexacarbate [10]	Mexacarbate	315–18–4	0.056	1.4
P185	Tirpate [10]	Tirpate	26419–73–8	0.056	0.28
P188	Physostigmine salicylate [10]	Physostigmine salicylate	57–64–7	0.056	1.4
P189	Carbosulfan [10]	Carbosulfan	55285–14–8	0.028	1.4
P190	Metolcarb [10]	Metolcarb	1129–41–5	0.056	1.4
P191	Dimetilan [10]	Dimetilan	644–64–4	0.056	1.4
P192	Isolan [10]	Isolan	119–38–0	0.056	1.4
P194	Oxamyl [10]	Oxamyl	23135–22–0	0.056	0.28
P196	Manganese dimethyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
P197	Formparanate [10]	Formparanate	17702–57–7	0.056	1.4
P198	Formetanate hydrochloride [10]	Formetanate hydrochloride	23422–53–9	0.056	1.4
P199	Methiocarb [10]	Methiocarb	2032–65–7	0.056	1.4
P201	Promecarb [10]	Promecarb	2631–37–0	0.056	1.4
P202	m-Cumenyl methylcarbamate [10]	m-Cumenyl methylcarbamate	64–00–6	0.056	1.4
P203	Aldicarb sulfone [10]	Aldicarb sulfone	1646–88–4	0.056	0.28
P204	Physostigmine [10]	Physostigmine	57–47–6	0.056	1.4
P205	Ziram [10]	Dithiocarbamates (total)	NA	0.028	28
*	* *	*	* *	*	
U271	Benomyl [10]	Benomyl	17804–35–2	0.056	1.4
U277	Sulfallate [10]	Dithiocarbamates (total)	NA	0.028	28
U278	Bendiocarb [10]	Bendiocarb	22781–23–3	0.056	1.4
U279	Carbaryl [10]	Carbaryl	63–25–2	0.006	0.14
U280	Barban [10]	Barban	101–27–9	0.056	1.4
*	* *	*	* *	*	
U364	Bendiocarb phenol [10]	Bendiocarb phenol	22961–82–6	0.056	1.4
U365	Molinate [10]	Molinate	2212–67–1	0.042	1.4
U366	Dazomet [10]	Dithiocarbamates (total)	NA	0.028	28
U367	Carbofuran phenol [10]	Carbofuran phenol	1563–38–8	0.056	1.4
U372	Carbendazim [10]	Carbendazim	10605–21–7	0.056	1.4
U373	Propham [10]	Propham	122–42–9	0.056	1.4
U375	3-Iodo-2-propynyl n-butylcarbamate [10]	3-Iodo-2-propynyl n-butylcarbamate	55406–53–6	0.056	1.4
U376	Selenium, tetrakis (dimethyldithiocarbamate) [10]	Dithiocarbamates (total)	NA	0.028	28
		Selenium	7782–49–2	0.82	0.16 mg/l TCLP
U377	Potassium n-methyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
U378	Potassium n-hydroxymethyl-n-methyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP" or technology code
U379	Sodium dibutyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
U381	Sodium diethyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
U382	Sodium dimethyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
U383	Potassium dimethyl dithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
U384	Metam Sodium [10]	Dithiocarbamates (total)	NA	0.028	28
U385	Vernolate [10]	Vernolate	1929–77–7	0.042	1.4
U386	Cycloate [10]	Cycloate	1134–23–2	0.042	1.4
U387	Prosulfocarb [10]	Prosulfocarb	52888–80–9	0.042	1.4
U389	Triallate [10]	Triallate	2303–17–5	0.042	1.4
U390	EPTC [10]	EPTC	759–94–4	0.042	1.4
U391	Pebulate [10]	Pebulate	1114–71–2	0.042	1.4
U392	Butylate [10]	Butylate	2008–41–5	0.042	1.4
U393	Copper dimethyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
U394	A2213 [10]	A2213	30558–43–1	0.042	1.4
U395	Diethylene glycol, dicarbamate [10]	Diethylene glycol, dicarbamate	5952–26–1	0.056	1.4
U396	Ferbam [10]	Dithiocarbamates (total)	NA	0.028	28
U400	Bis(pentamethylene)thiuram tetrasulfide [10]	Dithiocarbamates (total)	NA	0.028	28
U401	Tetramethyl thiuram monosulfide [10]	Dithiocarbamates (total)	NA	0.028	28
U402	Tetrabutylthiuram disulfide [10]	Dithiocarbamates (total)	NA	0.028	28
U403	Disulfiram [10]	Dithiocarbamates (total)	NA	0.028	28
U404	Triethylamine [10]	Triethylamine	101–44–8	0.081	1.5
U407	Ethyl Ziram [10]	Dithiocarbamates (total)	NA	0.028	28
U409	Thiophanate-methyl [10]	Thiophanate-methyl	23564–05–8	0.056	1.4
U410	Thiodicarb [10]	Thiodicarb	59669–26–0	0.019	1.4
U411	Propoxur [10]	Propoxur	114–26–1	0.056	1.4

Notes to the Table:

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * * * *

[10] Between August 26, 1996 and August 27, 1997, the treatment standard for this waste may be satisfied by either meeting the constituent concentrations if this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST at § 268.42 Table 1, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1, for wastewaters.

4. In § 268.48, the table in paragraph (a) is amended by adding footnote number ''[6]'' in column one, under the heading *Regulated Constituents/ Common Name,* under I. Organic constituents, after the following chemical names: ''2213''; ''Aldicarb sulfone''; ''Barban''; ''Bendiocarb''; ''Bendiocarb phenol''; ''Benomyl''; ''Butylate''; ''Carbaryl''; ''Carbenzadim''; ''Carbofuran''; ''Carbofuran phenol''; ''Carbosulfan''; ''m-Cumenyl methylcarbamate''; ''Cycloate''; ''Diethylene glycol, dicarbamate''; ''Dimetilan''; ''Dithiocarbamates (total)''; ''EPTC''; ''Formetanate hydrochloride''; ''Formparanate''; ''3-Iodo-2-propynyl n-butylcarbamate''; ''Isolan''; ''Methiocarb''; ''Methomyl''; ''Metolcarb''; ''Mexacarbate''; ''Molinate''; ''Oxamyl''; ''Pebulate''; ''o-Phenylenediamine''; ''Physostigmine''; ''Physostigmine salicylate''; ''Promecarb''; ''Propham''; ''Propoxur''; ''Prosulfocarb''; ''Thiodicarb''; ''Thiophanate-methyl''; ''Tirpate''; ''Triallate''; ''Triethylamine''; and, ''Vernolate''; and adding footnote [6] at the end of the table to read as follows:

§ 268.48 Universal treatment standards.

(a) * * *

[6] Between August 26, 1996 and August 26, 1997, these constituents are not underlying hazardous constituents as defined at § 268.2(i).

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

5. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

Subpart A—Requirements for Final Authorization

6. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication in the Federal Register to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	*	*	*
Aug. 26, 1996	Emergency Revision of the Land Disposal Restrictions (LDR) Phase III Treatment Standards for Listed Hazardous Wastes from Carbamate Production.	61 FR (Insert ..... page numbers).	Aug. 26, 1996 until Aug. 26, 1997.
*	*	*	*

[FR Doc. 96–21626 Filed 8–23–96; 8:45 am]

BILLING CODE 6560–50–P

Federal Register

Wednesday
February 19, 1997

Part II

Environmental Protection Agency

40 CFR Part 268

Land Disposal Restrictions: Correction of Tables; Treatment Standards for Hazardous Waste and Universal Treatment Standards; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[EPA #530–296–002; FRL–5681–4]

RIN 2050–AD38

Land Disposal Restrictions: Correction of Tables; Treatment Standards for Hazardous Wastes and Universal Treatment Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Technical amendment of final rule.

SUMMARY: On April 8, 1996, EPA published Land Disposal Restrictions Phase III; Final Rule and Partial Withdrawal and Amendment of Final Rule, including the complete tables ''Treatment Standards for Hazardous Wastes'' at § 268.40, and ''Universal Treatment Standards'' at § 268.48. The Agency is today publishing updated and corrected versions of these two tables, incorporating all revisions to the treatment standards promulgated since the Phase III Final Rule. The updated tables also incorporate additional technical corrections which the Agency is making today, including the removal of treatment standards for the 25 waste codes whose listings were vacated by the November 1, 1996 court decision, *Dithiocarbamate Task Force* v. *Environmental Protection Agency* (DTC Court Case), *F.3d (D.C.Cir. November 1, 1996).* These corrected tables will eliminate confusion as to what levels of treatment must be achieved by the regulated community as they comply with the LDR requirements.

EFFECTIVE DATE: This rule is effective on February 19, 1997.

ADDRESSES: Supporting materials are available for viewing in the RCRA information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–PH3F–FFFFF. The RCRA Docket is open from 9 a.m. to 4 p.m. Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424–9346 (toll free) or (703) 920–9810 in the Washington, DC metropolitan area. For information on this document contact Shaun McGarvey (5302W), Office of Solid Waste, 401 M Street, S.W., Washington, DC 20460, (703) 308–8603.

SUPPLEMENTARY INFORMATION:

I. Reasons and Basis for Today's Amendment

The Agency has received comments from the regulated community and State agencies pointing out mistakes in the ''Treatment Standards for Hazardous Wastes'' table at 40 CFR 268.40 and the ''Universal Treatment Standards'' table at 40 CFR 268.48, published in the April 8, 1996 Land Disposal Restrictions (LDR) Phase III Final Rule (61 FR 15566) that were not addressed by Phase III: Technical correction of final rule (June 28, 1996, 61 FR 33680). Today's amendment addresses these comments, makes further technical corrections where necessary, and incorporates all revisions and corrections made since the Phase III Final Rule into complete and updated versions of these tables.

Today's amendment corrects all the errors that are considered appropriate for correction without notice and comment. The Agency is aware of certain other issues or problems that may be addressed at a later time, with notice and comment as appropriate. An example is that the rules currently specify that compliance with LDR standards is be measured using ''grab samples'' (see 40 CFR 268.40, the table ''Treatment Standards for Hazardous Wastes'', footnote 5). We note that some data used to develop standards for some of the constituents required for K061 were derived from composite samples from high temperature metal recovery (HTMR) facilities, and it would not be appropriate to require HTMR facilities to comply with the standards for those constituents using grab samples. We plan to correct this problem in the near future.

II. Incorporating Revisions Since the LDR Phase III Final Rule

The updated versions of the tables, ''Treatment Standards for Hazardous Wastes'' and ''Universal Treatment Standards'' incorporate the following revisions and corrections which have been promulgated since the Phase III Final Rule, the last time the complete tables were published in the Federal Register.

A. Partial Withdrawal of Phase III: April 8, 1996

The revisions of the standards for characteristic waste codes D001–D003 and D018–D043 that were promulgated in the Partial Withdrawal were superceded by the Phase III Technical Correction. Therefore, the treatment standards for these waste codes as they appeared in the Partial Withdrawal do not appear in today's updated tables.

B. Phase III Technical Correction: June 28, 1996

This rule implemented the following changes to the ''Treatment Standards for Hazardous Wastes'' table at § 268.40:

- Removal of entries for codes which were considered for listing at one time but were never finalized: K140, P187, P193, P195, P200, U360–U363, U368–U371, U374, U380, U388, U397–U399, U405, U406, U408.
- Correct revision of standards for the following waste codes: D001, D002, D012–D043, F006, F007, F010, K008, K108, and P093.

Please note that revisions to the ''Treatment Standards for Hazardous Wastes'' table for the following waste codes were either partially incorrect or were superceded by the Carbamate Emergency Rule or the vacature of the hazardous waste listing due to the DTC Court Decision: D003, F037, F039, K006, K062, K108, K156–K161, P196, P202, P205, U277–U278, U365–U366, U375–U379, U381–U387, U389–U396, U400–U404, U407, U409–U411.

Also note that although footnotes 8 and 9 were added to the treatment standard table by the June 28 Technical correction, the position of footnote 9 in the table and the text of footnote 8 are being modified by today's rule, as described further below.

This rule also implemented the following changes to the ''Universal Treatment Standards'' table at § 268.48:

- Revision of standards for the following constituents: A2213, Butylate, EPTC, Molinate, Pebulate, Prosulfocarb, Triallate, and Vernolate. Note that the UTS standard for Cycloate was also revised, but this constituent was later removed from the UTS list due to the DTC Court Decision.

C. Emergency Revision of Carbamate Standards: August 26, 1996

This rule implemented the following changes to the ''Treatment Standards for Hazardous Wastes'' table at § 268.40:

- Revision of all carbamate waste codes except K156.

Please note that the treatment standard for K156 and the second date specified by footnote 10 in the Emergency Revision included errors which are corrected in today's rule.

The Emergency Revision also promulgated the following change to the ''Universal Treatment Standards'' table at § 268.48:

- Addition of footnote 6 to the Universal Treatment Standard table for

all carbamate constituents added to the UTS table by the Phase III rule.

III. New Technical Corrections to Treatment Standards for Hazardous Wastes and Universal Treatment Standards

The Agency is today promulgating the following technical corrections to the ''Treatment Standards for Hazardous Wastes'' table at § 268.40:

• On November 1, 1996, the DTC Court Decision vacated the listing of the following 25 waste codes: K160, U277, U365–U366, U375–U379, U381–U386, U390–U393, U396, U400–U403, U407. Therefore, since these wastes are no longer listed as hazardous, they are not subject to LDR prohibitions (assuming they do not exhibit a characteristic; if they do exhibit a characteristic, they would be covered under the prohibition for that characteristic). For this reason, EPA is removing the treatment standards for these waste codes from the treatment standard table.

• The text of footnote 9, ''These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well are not subject to treatment standards,'' applies to all subcategories of wastes codes D001–D003 (except for radioactive high level D002), and D012–D043. Therefore, the position of all citations of footnote 9 in the table are being moved from the columns containing the treatment standards for wastewaters and nonwastewaters to the ''Waste Code'' column of the table. The text of footnote 8 is also being simplified to apply only to wastes managed in CWA or CWA-equivalent systems. Footnote 9 applies to all wastes for which footnote 8 applies; thus, it is no longer necessary for footnote 8 to apply to wastes managed in Class I SDWA wells.

• The standards for D003 now correctly reflect the preamble language from the Phase III final rule (61 FR at 15568–15569), which states that the requirement to meet § 268.48 standards does not apply to the reactive sulfides, unexploded ordnance, and reactive cyanides subcategories.

• For F037, the Phase III Technical Correction mistakenly reported the standard for Acenaphthene in nonwastewaters as 3.4 mg/l. This standard is now being corrected to read ''NA''.

• For F039, the Phase III Technical Correction mistakenly reported the standard for Acenaphthylene in nonwastewasters as ''NA''. This standard is now being corrected to read ''3.4 mg/l''.

• For K006, the Phase III Technical Correction mistakenly reported the standard for Lead in nonwastewaters from the ''hydrated'' subcategory as ''3.7 mg/l TCLP''. This standard is now being corrected to read ''NA''.

• For K062, the Phase III Technical Correction mistakenly reported the standard for Nickel in nonwastewaters as ''5.0 mg/l TCLP''. This standard is now being corrected to read ''NA''.

• For K088, the Phase III Final Rule mistakenly omitted footnote 7 from the entries for ''Cyanide (Total)'' and ''Cyanide (Amenable)'' in the common name column. Footnote 7 is now being added to these entries.

• For U003, the alternate standard for Acetronitrile in nonwastewaters is now being corrected to read ''38 mg/l''.

• For U190, the additional language ''(measured as Phthalic acid or Terephthalic acid)'' is being added to the common name for Phthalic acid with CAS number 85–44–9.

• For F027 and F028, all numerical treatment standards for these codes in the Phase III Final Rule were incorrect. The standards for all constituents are now being corrected to the concentrations that appeared in the Phase II Final Rule.

• For U027, the treatment standard for bis(2-Chloroisopropyl)ether in wastewaters is being corrected to read ''0.055 mg/l''.

• For K156, the treatment standard for Acetonitrile (CAS 78–05–8) in nonwastewaters has been corrected to read ''38 mg/l''.

• Footnote 10 to the treatment standard table is today being corrected to read as follows: ''Between August 26, 1996, and August 26, 1997, the treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST at § 268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1 of this Part, for wastewaters.'' This change corrects a minor discrepancy as to the dates during which the alternative treatment standards for carbamate wastes remain in effect.

The Agency is today promulgating the following technical corrections to the ''Universal Treatment Standards'' table at § 268.48:

• Cycloate and 3-Iodo-2-propynyl n-butylcarbamate were only regulated constituents for waste codes U386 and U375, respectively. Since the listing of these two waste codes were vacated by the DTC court decision, the Agency is today removing these constituents from the Universal Treatment Standards table.

IV. Rationale for Immediate Effective Date

Today's amendment does not create any new regulatory requirements; rather, it restates and clarifies requirements already in effect by correcting a number of errors in the April 8, 1996 final rule and withdrawal notice, the June 28, 1996 technical correction, and the August 26, 1996 emergency revision of the carbamate standards. For these reasons, EPA finds that good cause exists under section 3010(b)(3) of RCRA, 42 U.S.C. 9903(b)(3), to provide for an immediate effective date. See generally 61 FR at 15662. For the same reasons, EPA finds that there is good cause under 5 U.S.C. 553(b)(3) to promulgate today's corrections in final form and that there is good cause under 5 U.S.C. 553(b)(3) to waive the requirement that regulations be published at least 30 days before they become effective.

V. Analysis Under Executive Order 12866, the Unfunded Mandates Reform Act of 1995, the Regulatory Flexibility Act, and the Paperwork Reduction Act

Under Executive Order 12866, this action is not a ''significant regulatory action'' and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose annual costs of $100 million or more, will not significantly or uniquely affect small governments, and is not a significant federal intergovernmental mandate. The Agency thus has no obligations under sections 202, 203, 204 and 205 of the Unfunded Mandates Reform. Moreover, since this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to section 603 or 604 of the Regulatory Flexibility Act.

VI. Submission to Congress and the General Accounting Office

Because there is good cause to forego notice-and-comment procedures, the rule also may take effect upon promulgation without prior submission of the rule to the Congress. 5 U.S.C. section 808. EPA will thereafter submit the rule to Congress, as required by 5 U.S.C. 801(a).

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

Dated: January 13, 1997.

Elliott Laws,

Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart D—Treatment Standards

2. Section 268.40 is amended by revising the table ''Treatment Standards for Hazardous Wastes'' to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

BILLING CODE 6560–50–P

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D001 [9]	Ignitable Characteristic Wastes, except for the §261.21(a)(1) High TOC Subcategory.	NA	NA	DEACT and meet §268.48 standards[8]; or RORGS; or CMBST	DEACT and meet §268.48 standards[8]; or RORGS; or CMBST
	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1) - Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	RORGS; or CMBST
D002 [9]	Corrosive Characteristic Wastes.	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]
D002, D004, D005, D006, D007, D008, D009, D010, D011	Radioactive high level wastes generated during the reprocessing of fuel rods. (Note: This subcategory consists of nonwastewaters only.)	Corrosivity (pH)	NA	NA	HLVIT
		Arsenic	7440-38-2	NA	HLVIT
		Barium	7440-39-3	NA	HLVIT
		Cadmium	7440-43-9	NA	HLVIT
		Chromium (Total)	7440-47-3	NA	HLVIT
		Lead	7439-92-1	NA	HLVIT
		Mercury	7439-97-6	NA	HLVIT
		Selenium	7782-49-2	NA	HLVIT
		Silver	7440-22-4	NA	HLVIT
D003 [9]	Reactive Sulfides Subcategory based on 261.23(a)(5).	NA	NA	DEACT	DEACT
	Explosives Subcategory based on 261.23(a)(6), (7), and (8).	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other Reactives Subcategory based on 261.23(a)(1).	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]
	Water Reactive Subcategory based on 261.23(a)(2), (3), and (4). (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	DEACT and meet §268.48 standards[8]
	Reactive Cyanides Subcategory based on 261.23(a)(5).	Cyanides (Total)[7]	57-12-5	Reserved	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
D004	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the extraction procedure (EP) in SW846 Method 1310.	Arsenic	7440-38-2	5.0	5.0 mg/l EP
		Arsenic; alternate[6] standard for nonwastewaters only.	7440-38-2	NA	5.0 mg/l TCLP
D005	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the extraction procedure (EP) in SW846 Method 1310.	Barium	7440-39-3	100	100 mg/l TCLP
D006	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the extraction procedure (EP) in SW846 Method 1310.	Cadmium	7440-43-9	1.0	1.0 mg/l TCLP
	Cadmium Containing Batteries Subcategory. (Note: This subcategory consists of nonwastewaters only.)	Cadmium	7440-43-9	NA	RTHRM
D007	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the extraction procedure (EP) in SW846 Method 1310.	Chromium (Total)	7440-47-3	5.0	5.0 mg/l TCLP
D008	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the extraction procedure (EP) in SW846 Method 1310.	Lead	7439-92-1	5.0	5.0 mg/l EP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Lead; alternate[6] standard for nonwastewaters only	7439-92-1	NA	5.0 mg/l TCLP
	Lead Acid Batteries Subcategory (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of 40 CFR 268 or exempted under other EPA regulations (see 40 CFR 266.80). This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	RLEAD
	Radioactive Lead Solids Subcategory (Note: these lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organo-lead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	MACRO
D009	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory)	Mercury	7439-97-6	NA	IMERC; OR RMERC

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory)	Mercury	7439-97-6	NA	RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the extraction procedure (EP) in SW846 Method 1310; and contain less than 260 mg/kg total mercury. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	All D009 wastewaters.	Mercury	7439-97-6	0.20	NA
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	AMLGM
	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	IMERC
D010	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the extraction procedure (EP) in SW846 Method 1310.	Selenium	7782-49-2	1.0	5.7 mg/l TCLP
D011	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the extraction procedure (EP) in SW846 Method 1310.	Silver	7440-22-4	5.0	5.0 mg/l TCLP
D012 [9]	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.	Endrin	72-20-8	BIODG; or CMBST	0.13 and meet §268.48 standards[8]
		Endrin aldehyde	7421-93-4	BIODG; or CMBST	0.13 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D013 [9]	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.	alpha-BHC	319-84-6	CARBN; or CMBST	0.066 and meet §268.48 standards[8]
		beta-BHC	319-85-7	CARBN; or CMBST	0.066 and meet §268.48 standards[8]
		delta-BHC	319-86-8	CARBN; or CMBST	0.066 and meet §268.48 standards[8]
		gamma-BHC (Lindane)	58-89-9	CARBN; or CMBST	0.066 and meet §268.48 standards[8]
D014 [9]	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.	Methoxychlor	72-43-5	WETOX or CMBST	0.18 and meet §268.48 standards[8]
D015 [9]	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.	Toxaphene	8001-35-2	BIODG or CMBST	2.6 and meet §268.48 standards[8]
D016 [9]	Wastes that are TC for 2,4-D (2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.	2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	CHOXD, BIODG, or CMBST	10 and meet §268.48 standards[8]
D017 [9]	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.	2,4,5-TP (Silvex)	93-72-1	CHOXD or CMBST	7.9 and meet §268.48 standards[8]
D018 [9]	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.	Benzene	71-43-2	0.14 and meet §268.48 standards[8]	10 and meet §268.48 standards[8]
D019 [9]	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.	Carbon tetrachloride	56-23-5	0.057 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D020 [9]	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033 and meet §268.48 standards[8]	0.26 and meet §268.48 standards[8]
D021 [9]	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.	Chlorobenzene	108-90-7	0.057 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D022 [9]	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.	Chloroform	67-66-3	0.046 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D023 [9]	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.	o-Cresol	95-48-7	0.11 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D024 [9]	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.	m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D025 [9]	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D026 [9]	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid)(sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88 and meet §268.48 standards[8]	11.2 and meet §268.48 standards[8]
D027 [9]	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene)	106-46-7	0.090 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D028 [9]	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.	1,2-Dichloroethane	107-06-2	0.21 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D029 [9]	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.	1,1-Dichloroethylene	75-35-4	0.025 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D030 [9]	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.	2,4-Dinitrotoluene	121-14-2	0.32 and meet §268.48 standards[8]	140 and meet §268.48 standards[8]
D031 [9]	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.	Heptachlor	76-44-8	0.0012 and meet §268.48 standards[8]	0.066 and meet §268.48 standards[8]
		Heptachlor epoxide	1024-57-3	0.016 and meet §268.48 standards[8]	0.066 and meet §268.48 standards[8]
D032 [9]	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311.	Hexachlorobenzene	118-74-1	0.055 and meet §268.48 standards[8]	10 and meet §268.48 standards[8]
D033 [9]	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.	Hexachlorobutadiene	87-68-3	0.055 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D034 [9]	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.	Hexachloroethane	67-72-1	0.055 and meet §268.48 standards[8]	30 and meet §268.48 standards[8]
D035 [9]	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.	Methyl ethyl ketone	78-93-3	0.28 and meet §268.48 standards[8]	36 and meet §268.48 standards[8]
D036 [9]	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.	Nitrobenzene	98-95-3	0.068 and meet §268.48 standards[8]	14 and meet §268.48 standards[8]
D037 [9]	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.	Pentachlorophenol	87-86-5	0.089 and meet §268.48 standards[8]	7.4 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D038 [9]	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.	Pyridine	110-86-1	0.014 and meet §268.48 standards[8]	16 and meet §268.48 standards[8]
D039 [9]	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	Tetrachloroethylene	127-18-4	0.056 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D040 [9]	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.	Trichloroethylene	79-01-6	0.054 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D041 [9]	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,5-Trichlorophenol	95-95-4	0.18 and meet §268.48 standards[8]	7.4 and meet §268.48 standards[8]
D042 [9]	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,6-Trichlorophenol	88-06-2	0.035 and meet §268.48 standards[8]	7.4 and meet §268.48 standards[8]
D043 [9]	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.	Vinyl chloride	75-01-4	0.27 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F001, F002, F003, F004, & F005	F001, F002, F003, F004 and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene, trichloromonofluoromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in § 261.31	Acetone	67-64-1	0.28	160
		Benzene	71-43-2	0.14	10
		n-Butyl alcohol	71-36-3	5.6	2.6
		Carbon disulfide	75-15-0	3.8	NA
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chlorobenzene	108-90-7	0.057	6.0
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88	11.2
		Cyclohexanone	108-94-1	0.36	NA
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Ethyl acetate	141-78-6	0.34	33
		Ethyl benzene	100-41-4	0.057	10
		Ethyl ether	60-29-7	0.12	160
		Isobutyl alcohol	78-83-1	5.6	170
		Methanol	67-56-1	5.6	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Methylene chloride	75-9-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Nitrobenzene	98-95-3	0.068	14
		Pyridine	110-86-1	0.014	16
		Tetrachloroethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
		Trichloroethylene	79-01-6	0.054	6.0
		Trichloromonofluoromethane	75-69-4	0.020	30
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
	F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001-5 solvents: carbon disulfide, cyclohexanone, and/or methanol. (formerly 268.41(c))	Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
		Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
		Methanol	67-56-1	5.6	0.75 mg/l TCLP
	F005 solvent waste containing 2-Nitropropane as the only listed F001-5 solvent.	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
	F005 solvent waste containing 2-Ethoxyethanol as the only listed F001-5 solvent.	2-Ethoxyethanol	110-80-5	BIODG: or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	Cadmium	7440-43-9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Silver	7440-22-4	NA	0.30 mg/l TCLP
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440-43-9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Silver	7440-22-4	NA	0.30 mg/l TCLP
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Silver	7440-22-4	NA	0.30 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Silver	7440-22-4	NA	0.30 mg/l TCLP
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	NA
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium	7440-43-9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Silver	7440-22-4	NA	0.30 mg/l TCLP
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Silver	7440-22-4	NA	0.30 mg/l TCLP
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
F020, F021, F022, F023, F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives, excluding wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F020); (2) pentachlorophenol, or of intermediates used to produce its derivatives (i.e., F021); (3) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F022); and from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenols, excluding wastes from equipment used only for the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F023); (2) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F026).	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in §261.31 or §261.32.).	All F024 wastes	NA	CMBST	CMBST
		2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
		3-Chloropropylene	107-05-1	0.036	30
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Hexachloroethane	67-72-1	0.055	30
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
F025	Condensed light ends from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025 - Light Ends Subcategory	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	Spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025 - Spent Filters/Aids and Desiccants Subcategory	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Wastes Nos. F020, F021, F023, F026, and F027.	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F037	Petroleum refinery primary oil/water/solids separation sludge-Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	5.0 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air floatation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological units) and F037, K048, and K051 are not included in this listing.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	5.0 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	Acenaphthylene	208-96-8	0.059	3.4
		Acenaphthene	83-32-9	0.059	3.4
		Acetone	67-64-1	0.28	160
		Acetonitrile	75-05-8	5.6	NA
		Acetophenone	96-86-2	0.010	9.7
		2-Acetylaminofluorene	53-96-3	0.059	140
		Acrolein	107-02-8	0.29	NA
		Acrylonitrile	107-13-1	0.24	84
		Aldrin	309-00-2	0.021	0.066
		4-Aminobiphenyl	92-67-1	0.13	NA
		Aniline	62-53-3	0.81	14
		Anthracene	120-12-7	0.059	3.4
		Aramite	140-57-8	0.36	NA
		alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.066
		gamma-BHC	58-89-9	0.0017	0.066
		Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Bromodichloromethane	75-27-4	0.35	15
		Methyl bromide (Bromomethane)	74-83-9	0.11	15
		4-Bromophenyl phenyl ether	101-55-3	0.055	15
		n-Butyl alcohol	71-36-3	5.6	2.6
		Butyl benzyl phthalate	85-68-7	0.017	28
		2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
		Carbon disulfide	75-15-0	3.8	NA
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		p-Chloroaniline	106-47-8	0.46	16
		Chlorobenzene	108-90-7	0.057	6.0
		Chlorobenzilate	510-15-6	0.10	NA
		2-Chloro-1,3-butadiene	126-99-8	0.057	NA
		Chlorodibromomethane	124-48-1	0.057	15
		Chloroethane	75-00-3	0.27	6.0
		bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		Chloroform	67-66-3	0.046	6.0
		bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
		p-Chloro-m-cresol	59-50-7	0.018	14
		Chloromethane (Methyl chloride)	74-87-3	0.19	30
		2-Chloronaphthalene	91-58-7	0.055	5.6
		2-Chlorophenol	95-57-8	0.044	5.7
		3-Chloropropylene	107-05-1	0.036	30
		Chrysene	218-01-9	0.059	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cyclohexanone	108-94-1	0.36	NA
		1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
		Dibromomethane	74-95-3	0.11	15
		2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
		o,p'-DDE	3424-82-6	0.031	0.087
		p,p'-DDE	72-55-9	0.031	0.087
		o,p'-DDT	789-02-6	0.0039	0.087
		p,p'-DDT	50-29-3	0.0039	0.087
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Dibenz(a,e)pyrene	192-65-4	0.061	NA
		m-Dichlorobenzene	541-73-1	0.036	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Dichlorodifluoromethane	75-71-8	0.23	7.2
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		trans-1,2-Dichloroethylene	156-60-5	0.054	30
		2,4-Dichlorophenol	120-83-2	0.044	14
		2,6-Dichlorophenol	87-65-0	0.044	14
		1,2-Dichloropropane	78-87-5	0.85	18
		cis-1,3-Dichloropropylene	10061-01-5	0.036	18

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
		Dieldrin	60-57-1	0.017	0.13
		Diethyl phthalate	84-66-2	0.20	28
		2-4-Dimethyl phenol	105-67-9	0.036	14
		Dimethyl phthalate	131-11-3	0.047	28
		Di-n-butyl phthalate	84-74-2	0.057	28
		1,4-Dinitrobenzene	100-25-4	0.32	2.3
		4,6-Dinitro-o-cresol	534-52-1	0.28	160
		2,4-Dinitrophenol	51-28-5	0.12	160
		2,4-Dinitrotoluene	121-14-2	0.32	140
		2,6-Dinitrotoluene	606-20-2	0.55	28
		Di-n-octyl phthalate	117-84-0	0.017	28
		Di-n-propylnitrosamine	621-64-7	0.40	14
		1,4-Dioxane	123-91-1	12.0	170
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	NA
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	NA
		1,2-Diphenylhydrazine	122-66-7	0.087	NA
		Disulfoton	298-04-4	0.017	6.2
		Endosulfan I	939-98-8	0.023	0.066

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Endosulfan II	33213-6-5	0.029	0.13
		Endosulfan sulfate	1031-07-8	0.029	0.13
		Endrin	72-20-8	0.0028	0.13
		Endrin aldehyde	7421-93-4	0.025	0.13
		Ethyl acetate	141-78-6	0.34	33
		Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
		Ethyl benzene	100-41-4	0.057	10
		Ethyl ether	60-29-7	0.12	160
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Ethyl methacrylate	97-63-2	0.14	160
		Ethylene oxide	75-21-8	0.12	NA
		Famphur	52-85-7	0.017	15
		Fluoranthene	206-44-0	0.068	3.4
		Fluorene	86-73-7	0.059	3.4
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
		Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		Hexachloroethane	67-72-1	0.055	30
		Hexachloropropylene	1888-71-7	0.035	30
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Iodomethane	74-88-4	0.19	65
		Isobutyl alcohol	78-83-1	5.6	170
		Isodrin	465-73-6	0.021	0.066
		Isosafrole	120-58-1	0.081	2.6
		Kepone	143-50-8	0.0011	0.13
		Methacrylonitrile	126-98-7	0.24	84
		Methanol	67-56-1	5.6	NA
		Methapyrilene	91-80-5	0.081	1.5
		Methoxychlor	72-43-5	0.25	0.18
		3-Methylcholanthrene	56-49-5	0.0055	15
		4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Methyl methacrylate	80-62-6	0.14	160
		Methyl methansulfonate	66-27-3	0.018	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Methyl parathion	298-00-0	0.014	4.6
		Naphthalene	91-20-3	0.059	5.6
		2-Naphthylamine	91-59-8	0.52	NA
		p-Nitroaniline	100-01-6	0.028	28
		Nitrobenzene	98-95-3	0.068	14
		5-Nitro-o-toluidine	99-55-8	0.32	28
		p-Nitrophenol	100-02-7	0.12	29
		N-Nitrosodiethylamine	55-18-5	0.40	28
		N-Nitrosodimethylamine	62-75-9	0.40	NA
		N-Nitroso-di-n-butylamine	924-16-3	0.40	17
		N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
		N-Nitrosomorpholine	59-89-2	0.40	2.3
		N-Nitrosopiperidine	100-75-4	0.013	35
		N-Nitrosopyrrolidine	930-55-2	0.013	35
		Parathion	56-38-2	0.014	4.6
		Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
		Pentachlorobenzene	608-93-5	0.055	10
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachloronitrobenzene	82-68-8	0.055	4.8
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenacetin	62-44-2	0.081	16
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Phorate	298-02-2	0.021	4.6
		Phthalic anhydride	85-44-9	0.055	NA
		Pronamide	23950-58-5	0.093	1.5
		Pyrene	129-00-0	0.067	8.2
		Pyridine	110-86-1	0.014	16
		Safrole	94-59-7	0.081	22
		Silvex (2,4,5-TP)	93-72-1	0.72	7.9
		2,4,5-T	93-76-5	0.72	7.9
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Tetrachloroethylene	127-18-4	0.056	6.0
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		Toluene	108-88-3	0.080	10
		Toxaphene	8001-35-2	0.0095	2.6
		Bromoform (Tribromomethane)	75-25-2	0.63	15
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Trichloromonofluoromethane	75-69-4	0.020	30
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		1,2,3-Trichloropropane	96-18-4	0.85	30
		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
		tris(2,3-Dibromopropyl) phosphate	126-72-7	0.11	NA
		Vinyl chloride	75-01-4	0.27	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Antimony	7440-36-0	1.9	2.1 mg/l TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Barium	7440-39-3	1.2	7.6 mg/l TCLP
		Beryllium	7440-41-7	0.82	NA
		Cadmium	7440-43-9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	NA
		Fluoride	16964-48-8	35	NA
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Selenium	7782-49-2	0.82	0.16 mg/l TCLP
		Silver	7440-22-4	0.43	0.30 mg/l TCLP
		Sulfide	8496-25-8	14	NA
		Thallium	7440-28-0	1.4	NA
		Vanadium	7440-62-2	4.3	NA
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
K005	Wastewater treatment sludge from the production of chrome green pigments.	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	NA
K007	Wastewater treatment sludge from the production of iron blue pigments.	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K008	Oven residue from the production of chrome oxide green pigments.	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K015	Still bottoms from the distillation of benzyl chloride.	Anthracene	120-12-7	0.059	3.4
		Benzal chloride	98-87-3	0.055	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Phenanthrene	85-01-8	0.059	5.6
		Toluene	108-88-3	0.080	10
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		1,2,3-Trichloropropane	96-18-4	0.85	30
K018	Heavy ends from the fractionation column in ethyl chloride production.	Chloroethane	75-00-3	0.27	6.0
		Chloromethane	74-87-3	0.19	NA
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Hexachlorobenzene	118-74-1	0.055	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		p-Dichlorobenzene	106-46-7	0.090	NA
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Fluorene	86-73-7	0.059	NA
		Hexachloroethane	67-72-1	0.055	30
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	NA
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Carbon tetrachloride	56-23-5	0.057	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Chloroform	67-66-3	0.046	6.0
		Antimony	7440-36-0	1.9	2.1 mg/l TCLP
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	Toluene	108-88-3	0.080	10
		Acetophenone	96-86-2	0.010	9.7
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		Phenol	108-95-2	0.039	6.2
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	NA	NA	LLEXT fb SSTRP fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K026	Stripping still tails from the production of methyl ethyl pyridines.	NA	NA	CMBST	CMBST
K027	Centrifuge and distillation residues from toluene diisocyanate production.	NA	NA	CARBN; or CMBST	CMBST
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	1,1-Dichloroethane	75-34-3	0.059	6.0
		trans-1,2-Dichloroethylene	156-60-5	0.054	30
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Cadmium	7440-43-9	0.69	NA
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Chloroform	67-66-3	0.046	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Vinyl chloride	75-01-4	0.27	6.0
K030	Column bodies or heavy ends from the combined production of trichloroethylene and perchloroethylene.	o-Dichlorobenzene	95-50-1	0.088	NA
		p-Dichlorobenzene	106-46-7	0.090	NA
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Hexachloropropylene	1888-71-7	NA	30
		Pentachlorobenzene	608-93-5	NA	10
		Pentachloroethane	76-01-7	NA	6.0
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K031	By-product salts generated in the production of MSMA and cacodylic acid.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K032	Wastewater treatment sludge from the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K035	Wastewater treatment sludges generated in the production of creosote.	Acenaphthene	83-32-9	NA	3.4
		Anthracene	120-12-7	NA	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Dibenz(a,h)anthracene	53-70-3	NA	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Fluorene	86-73-7	NA	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	NA	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
K037	Wastewater treatment sludges from the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
		Toluene	108-88-3	0.080	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K038	Wastewater from the washing and stripping of phorate production.	Phorate	298-02-2	0.021	4.6
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	NA	NA	CARBN; or CMBST	CMBST
K040	Wastewater treatment sludge from the production of phorate.	Phorate	298-02-2	0.021	4.6
K041	Wastewater treatment sludge from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	2,4-Dichlorophenol	120-83-2	0.044	14
		2,6-Dichlorophenol	187-65-0	0.044	14
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		Pentachlorophenol	87-86-5	0.089	7.4
		Tetrachloroethylene	127-18-4	0.056	6.0
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	NA	NA	DEACT	DEACT
K045	Spent carbon from the treatment of wastewater containing explosives.	NA	NA	DEACT	DEACT
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Lead	7439-92-1	0.69	0.37 mg/l TCLP
K047	Pink/red water form TNT operations	NA	NA	DEACT	DEACT
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-33	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	5.0 mg/l TCLP
K049	Slop oil emulsion solids from the petroleum refining industry.	Anthracene	120-12-7	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Carbon disulfide	75-15-0	3.8	NA
		Chrysene	2218-01-9	0.059	3.4
		2,4-Dimethylphenol	105-67-9	0.036	NA
		Ethylbenzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	5.0 mg/l TCLP
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Benzo(a)pyrene	50-32-8	0.061	3.4
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	5.0 mg/l TCLP
K051	API separator sludge from the petroleum refining industry.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	2218-01-9	0.059	3.4
		Di-n-butyl phthalate	105-67-9	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	5.0 mg/l TCLP
K052	Tank bottoms (leaded) from the petroleum refining industry.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		2,4-Dimethylphenol	105-67-9	0.036	NA
		Ethylbenzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Toluene	108-88-3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	5.0 mg/l TCLP
K060	Ammonia still lime sludge from coking operations.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Antimony	7440-36-0	NA	2.1 mg/l TCLP
		Arsenic	7440-38-2	NA	5.0 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Barium	7440-39-3	NA	7.6 mg/l TCLP
		Beryllium	7440-41-7	NA	0.014 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Mercury	7439-97-6	NA	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Selenium	7782-49-2	NA	0.16 mg/l TCLP
		Silver	7440-22-4	NA	0.30 mg/l TCLP
		Thallium	7440-28-0	NA	0.078 mg/l TCLP
		Zinc	7440-66-6	NA	5.3 mg/l TCLP
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	NA
K069	Emission control dust/sludge from secondary lead smelting. - Calcium Sulfate (Low Lead) Subcategory	Cadmium	7440-43-9	0.69	0.19 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
	Emission control dust/sludge from secondary lead smelting. - Non-Calcium Sulfate (High Lead) Subcategory	NA	NA	NA	RLEAD
K071	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used) nonwastewaters that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.) nonwastewaters that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All K071 wastewaters.	Mercury	7439-97-6	0.15	NA
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K083	Distillation bottoms from aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		Cyclohexanone	108-94-1	0.36	NA
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		m-Dichlorobenzene	541-73-1	0.036	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K086	Solvent wastes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	Acetone	67-64-1	0.28	160
		Acetophenone	96-86-2	0.010	9.7
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		n-Butyl alcohol	71-36-3	5.6	2.6
		Butylbenzyl phthalate	85-68-7	0.017	28
		Cyclohexanone	108-94-1	0.36	NA
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Diethyl phthalate	84-66-2	0.20	28
		Dimethyl phthalate	131-11-3	0.047	28
		Di-n-butyl phthalate	84-74-2	0.057	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Di-n-octyl phthalate	117-84-0	0.017	28
		Ethyl acetate	141-78-6	0.34	33
		Ethylbenzene	100-41-4	0.057	10
		Methanol	67-56-1	5.6	NA
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Methylene chloride	75-09-2	0.089	30
		Naphthalene	91-20-3	0.059	5.6
		Nitrobenzene	98-95-3	0.068	14
		Toluene	108-88-3	0.080	10
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
K087	Decanter tank tar sludge from coking operations.	Acenaphthylene	208-96-8	0.059	3.4
		Benzene	71-43-2	0.14	10
		Chrysene	218-01-9	0.059	3.4
		Fluoranthene	206-44-0	0.068	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
K088	Spent potliners from primary aluminum reduction.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene	205-99-2	0.11	6.8
		Benzo(k)fluoranthene	207-08-9	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3,-c,d)pyrene	193-39-5	0.0055	3.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Antimony	7440-36-0	1.9	2.1 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Barium	7440-39-3	1.2	7.6 mg/l TCLP
		Beryllium	7440-41-7	0.82	0.014 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Selenium	7782-49-2	0.82	0.16 mg/l TCLP
		Silver	7440-22-4	0.43	0.30 mg/l TCLP
		Cyanide (Total)[7]	57-12-5	1.2	590
		Cyanide (Amenable)[7]	57-12-5	0.86	30
		Fluoride	16984-48-8	35	48 mg/l TCLP
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	m-Dichlorobenzene	541-73-1	0.036	6.0
		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K098	Untreated process wastewater from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K099	Untreated wastewater from the production of 2,4-D.	2,4-Dichlorophenoxyacetic acid	94-75-7	0.72	10
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Cadmium	7440-43-9	0.69	0.19 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitroaniline	88-74-4	0.27	14
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Mercury	7439-97-6	0.15	NA
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitrophenol	88-75-5	0.028	13
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA
		Mercury	7439-97-6	0.15	NA
K103	Process residues from aniline extraction from the production of aniline.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
K104	Combined wastewater streams generated from nitrobenzene/ aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		2-Chlorophenol	95-57-8	0.044	5.7
		o-Dichlorobenzene	95-50-1	0.088	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Phenol	108-95-2	0.039	6.2
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
K106	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain less than 260 mg/kg total mercury that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Other K106 nonwastewaters that contain less than 260 mg/kg total mercury and are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All K106 wastewaters.	Mercury	7439-97-6	0.15	NA
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	2,4-Dinitrotoluene	121-1-2	0.32	140
		2,6-Dinitrotoluene	606-20-2	0.55	28
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; OR CMBST	CMBST
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotolune.	NA	NA	CARBN; or CMBST	CMBST
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		NA	NA	CARBN; or CMBST	CMBST
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	NA	NA	CARBN; or CMBST	CMBST
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K118	Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-2-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)flouranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Naphthalene	91-20-3	0.059	5.6
K147	Tar storage tank residues from coal tar refining.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K148	Residues from coal tar distillation, including, but not limited to, still bottoms.	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillations of benzyl chloride.)	Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Toluene	108-88-3	0.080	10
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Benzene	71-43-2	0.14	10
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. [10]	Acetonitrile	75-05-8	5.6	38
		Acetophenone	96-86-2	0.010	9.7
		Aniline	62-53-3	0.81	14
		Benomyl	17804-35-2	0.056	1.4
		Benzene	71-43-2	0.14	10
		Carbaryl	63-25-2	0.006	0.14
		Carbenzadim	10605-21-7	0.056	1.4
		Carbofuran	1563-66-2	0.006	0.14
		Carbosulfan	55285-14-8	0.028	1.4
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Methomyl	16752-77-5	0.028	0.14
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyridine	110-86-1	0.014	16
		Toluene	108-88-3	0.080	10
		Triethylamine	121-44-8	0.081	1.5
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. [10]	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		Methomyl	16752-77-5	0.028	0.14
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		o-Phenylenediamine	95-54-5	0.056	5.6
		Pyridine	110-86-1	0.014	16
		Triethylamine	121-44-8	0.081	1.5
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. [10]	Benomyl	17804-35-2	0.056	1.4
		Benzene	71-43-2	0.14	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Carbenzadim	10605-21-7	0.056	1.4
		Carbofuran	1563-66-2	0.006	0.14
		Carbosulfan	55285-14-8	0.028	1.4
		Chloroform	67-66-3	0.046	6.0
		Methylene chloride	75-09-2	0.089	30
		Phenol	108-95-2	0.039	6.2
K159	Organics from the treatment of thiocarbamate wastes. [10]	Benzene	71-43-2	0.14	10
		Butylate	2008-41-5	0.042	1.4
		EPTC (Eptam)	759-94-4	0.042	1.4
		Molinate	2212-67-1	0.042	1.4
		Pebulate	1114-71-2	0.042	1.4
		Vernolate	1929-77-7	0.042	1.4
K161	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts. [10]	Antimony	7440-36-0	1.9	2.1 mg/l TCLP
		Arsenic	7440-38-2	1.9	5.0 mg/l TCLP
		Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
		Dithiocarbamates (total)	NA	0.028	28
		Lead	7439-92-1	0.69	0.37 mg/l TCLP
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
		Selenium	7782-49-2	0.82	0.16 mg/l TCLP
P001	Warfarin, & salts, when present at concentrations greater than 0.3%	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P002	1-Acetyl-2-thiourea	1-Acetyl-2-thiourea	591-08-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P003	Acrolein	Acrolein	107-02-8	0.29	CMBST
P004	Aldrin	Aldrin	309-00-2	0.021	0.066
P005	Allyl alcohol	Allyl alcohol	107-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P006	Aluminum phosphide	Aluminum phosphide	20859-73-8	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P007	5-Aminomethyl 3-isoxazolol	5-Aminomethyl 3-isoxazolol	2763-96-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P008	4-Aminopyridine	4-Aminopyridine	504-24-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P009	Ammonium picrate	Ammonium picrate	131-74-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P010	Arsenic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P011	Arsenic pentoxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P012	Arsenic trioxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P013	Barium cyanide	Barium	7440-39-3	NA	7.6 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P014	Thiophenol (Benzene thiol)	Thiophenol (Benzene thiol)	108-98-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P015	Beryllium dust	Beryllium	7440-41-7	RMETL; or RTHRM	RMETL; or RTHRM

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P016	Dichloromethyl ether (Bis(chloromethyl)ether)	Dichloromethyl ether	542-88-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P017	Bromoacetone	Bromoacetone	598-31-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P018	Brucine	Brucine	357-57-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
P021	Calcium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P022	Carbon disulfide	Carbon disulfide	75-15-0	3.8	CMBST
		Carbon disulfide; alternate[6] standard for nonwastewaters only	75-15-0	NA	4.8 mg/l TCLP
P023	Chloroacetaldehyde	Chloroacetaldehyde	107-20-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P024	p-Chloroaniline	p-Chloroaniline	106-47-8	0.46	16
P026	1-(o-Chlorophenyl)thiourea	1-(o-Chlorophenyl)thiourea	5344-82-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P027	3-Chloropropionitrile	3-Chloropropionitrile	542-76-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P028	Benzyl chloride	Benzyl chloride	100-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P029	Copper cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P030	Cyanides (soluble salts and complexes)	Cyanides (Total)[7]	57-12-5	1.2	590

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P031	Cyanogen	Cyanogen	460-19-5	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P033	Cyanogen chloride	Cyanogen chloride	506-77-4	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P034	2-Cyclohexyl-4,6-dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	131-89-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P036	Dichlorophenylarsine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P037	Dieldrin	Dieldrin	60-57-1	0.017	0.13
P038	Diethylarsine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P039	Disulfoton	Disulfoton	298-04-4	0.017	6.2
P040	0,0-Diethyl O-pyrazinyl phosphorothioate	0,0-Diethyl O-pyrazinyl phosphorothioate	297-97-2	CARBN; or CMBST	CMBST
P041	Diethyl-p-nitrophenyl phosphate	Diethyl-p-nitrophenyl phosphate	311-45-5	CARBN; or CMBST	CMBST
P042	Epinephrine	Epinephrine	51-43-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P043	Diisopropylfluorophosphate (DFP)	Diisopropylfluorophosphate (DFP)	55-91-4	CARBN; or CMBST	CMBST
P044	Dimethoate	Dimethoate	60-51-5	CARBN; or CMBST	CMBST
P045	Thiofanox	Thiofanox	39196-18-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P046	alpha, alpha-Dimethylphenethylamine	alpha, alpha-Dimethylphenethylamine	122-09-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P047	4,6-Dinitro-o-cresol	4,6-Dinitro-o-cresol	543-52-1	0.28	160

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	4,6-Dinitro-o-cresol salts	NA	NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P048	2,4-Dinitrophenol	2,4-Dinitrophenol	51-28-5	0.12	160
P049	Dithiobiuret	Dithiobiuret	541-53-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P050	Endosulfan	Endosulfan I	939-98-8	0.023	0.066
		Endosulfan II	33213-6-5	0.029	0.13
		Endosulfan sulfate	1031-07-8	0.029	0.13
P051	Endrin	Endrin	72-20-8	0.0028	0.13
		Endrin aldehyde	7421-93-4	0.025	0.13
P054	Aziridine	Aziridine	151-56-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P056	Fluorine	Fluoride (measured in wastewaters only)	16964-48-8	35	ADGAS fb NEUTR
P057	Fluoroacetamide	Fluoroacetamide	640-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P058	Fluoroacetic acid, sodium salt	Fluoroacetic acid, sodium salt	62-74-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P059	Heptachlor	Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
P060	Isodrin	Isodrin	465-73-6	0.021	0.066
P062	Hexaethyl tetraphosphate	Hexaethyl tetraphosphate	757-58-4	CARBN; or CMBST	CMBST
P063	Hydrogen cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P064	Isocyanic acid, ethyl ester	Isocyanic acid, ethyl ester	624-83-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P065	Mercury fulminate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC
	Mercury fulminate nonwastewaters that are either incinerator residues or are residues from RMERC; and contain greater than or equal to 260 mg/kg total mercury.	Mercury	7339-97-6	NA	RMERC
	Mercury fulminate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Mercury fulminate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All mercury fulminate wastewaters.	Mercury	7439-97-6	0.15	NA
P066	Methomyl	Methomyl	16752-77-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P067	2-Methyl-aziridine	2-Methyl-aziridine	75-55-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P068	Methyl hydrazine	Methyl hydrazine	60-34-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P069	2-Methyllactonitrile	2-Methyllactonitrile	75-86-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P070	Aldicarb	Aldicarb	116-06-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P071	Methyl parathion	Methyl parathion	298-00-0	0.014	4.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P072	1-Naphthyl-2-thiourea	1-Naphthyl-2-thiourea	86-88-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P073	Nickel carbonyl	Nickel	7440-02-0	3.98	5.0 mg/l TCLP
P074	Nickel cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Nickel	7440-02-0	3.98	5.0 mg/l TCLP
P075	Nicotine and salts	Nicotine and salts	54-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P076	Nitric oxide	Nitric oxide	10102-43-9	ADGAS	ADGAS
P077	p-Nitroaniline	p-Nitroaniline	100-01-6	0.028	28
P078	Nitrogen dioxide	Nitrogen dioxide	10102-44-0	ADGAS	ADGAS
P081	Nitroglycerin	Nitroglycerin	55-63-0	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P082	N-Nitrosodimethylamine	N-Nitrosodimethylamine	62-75-9	0.40	2.3
P084	N-Nitrosomethylvinylamine	N-Nitrosomethylvinylamine	4549-40-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P085	Octamethylpyrophosphoramide	Octamethylpyrophosphoramide	152-16-9	CARBN; or CMBST	CMBST
P087	Osmium tetroxide	Osmium tetroxide	20816-12-0	RMETL; or RTHRM	RMETL; or RTHRM
P088	Endothall	Endothall	145-73-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P089	Parathion	Parathion	56-38-2	0.014	4.6

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P092	Phenyl mercuric acetate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC; or RMERC
	Phenyl mercuric acetate nonwastewaters that are either incinerator residues or are residues from RMERC; and still contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	Phenyl mercuric acetate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Phenyl mercuric acetate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All phenyl mercuric acetate wastewaters.	Mercury	7439-97-6	0.15	NA
P093	Phenylthiourea	Phenylthiourea	103-85-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P094	Phorate	Phorate	298-02-2	0.021	4.6
P095	Phosgene	Phosgene	75-44-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P096	Phosphine	Phosphine	7803-51-2	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P097	Famphur	Famphur	52-85-7	0.017	15
P098	Potassium cyanide.	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P099	Potassium silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Silver	7440-22-4	0.43	0.30 mg/l TCLP
P101	Ethyl cyanide (Propanenitrile)	Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
P102	Propargyl alcohol	Propargyl alcohol	107-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P103	Selenourea	Selenium	7782-49-2	0.82	0.16 mg/l TCLP
P104	Silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Silver	7440-22-4	0.43	0.30 mg/l TCLP
P105	Sodium azide	Sodium azide	26628-22-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P106	Sodium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P108	Strychnine and salts	Strychnine and salts	57-24-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P109	Tetraethyldithiopyrophosphate	Tetraethyldithiopyrophosphate	3689-24-5	CARBN; or CMBST	CMBST
P110	Tetraethyl lead	Lead	7439-92-1	0.69	0.37 mg/l TCLP
P111	Tetraethylpyrophosphate	Tetraethylpyrophosphate	107-49-3	CARBN; or CMBST	CMBST
P112	Tetranitromethane	Tetranitromethane	509-14-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P113	Thallic oxide	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
P114	Thallium selenite	Selenium	7782-49-2	0.82	0.16 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P115	Thallium (I) sulfate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
P116	Thiosemicarbazide	Thiosemicarbazide	79-19-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P118	Trichloromethanethiol	Trichloromethanethiol	75-70-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P119	Ammonium vanadate	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P120	Vanadium pentoxide	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P121	Zinc cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P122	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P123	Toxaphene	Toxaphene	8001-35-2	0.0095	2.6
P127	Carbofuran [10]	Carbofuran	1563-66-2	0.006	0.14
P128	Mexacarbate [10]	Mexacarbate	315-18-4	0.056	1.4
P185	Tirpate [10]	Tirpate	26419-73-8	0.056	0.28
P188	Physostigmine salicylate [10]	Physostigmine salicylate	57-64-7	0.056	1.4
P189	Carbosulfan [10]	Carbosulfan	55285-14-8	0.028	1.4
P190	Metolcarb [10]	Metolcarb	1129-41-5	0.056	1.4
P191	Dimetilan [10]	Dimetilan	644-64-4	0.056	1.4
P192	Isolan [10]	Isolan	119-38-0	0.056	1.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P194	Oxamyl [10]	Oxamyl	23135-22-0	0.056	0.28
P196	Manganese dimethyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
P197	Formparanate [10]	Formparanate	17702-57-7	0.056	1.4
P198	Formetanate hydrochloride [10]	Formetanate hydrochloride	23422-53-9	0.056	1.4
P199	Methiocarb [10]	Methiocarb	2032-65-7	0.056	1.4
P201	Promecarb [10]	Promecarb	2631-37-0	0.056	1.4
P202	m-Cumenyl methylcarbamate [10]	m-Cumenyl methylcarbamate	64-00-6	0.056	1.4
P203	Aldicarb sulfone [10]	Aldicarb sulfone	1646-88-4	0.056	0.28
P204	Physostigmine [10]	Physostigmine	57-47-6	0.056	1.4
P205	Ziram [10]	Dithiocarbamates (total)	NA	0.028	28
U001	Acetaldehyde	Acetaldehyde	75-07-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U002	Acetone	Acetone	67-64-1	0.28	160
U003	Acetonitrile	Acetonitrile	75-05-8	5.6	CMBST
		Acetonitrile; alternate[6] standard for nonwastewaters only	75-05-8	NA	38
U004	Acetophenone	Acetophenone	98-86-2	0.010	9.7
U005	2-Acetylaminofluorene	2-Acetylaminofluorene	53-96-3	0.059	140
U006	Acetyl chloride	Acetyl Chloride	75-36-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U007	Acrylamide	Acrylamide	79-06-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U008	Acrylic acid	Acrylic acid	79-10-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U009	Acrylonitrile	Acrylonitrile	107-13-1	0.24	84
U010	Mitomycin C	Mitomycin C	50-07-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U011	Amitrole	Amitrole	61-82-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U012	Aniline	Aniline	62-53-3	0.81	14
U014	Auramine	Auramine	492-80-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U015	Azaserine	Azaserine	115-02-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U016	Benz(c)acridine	Benz(c)acridine	225-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U017	Benzal chloride	Benzal chloride	98-87-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U018	Benz(a)anthracene	Benz(a)anthracene	56-55-3	0.059	3.4
U019	Benzene	Benzene	71-43-2	0.14	10
U020	Benzenesulfonyl chloride	Benzenesulfonyl chloride	98-09-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U021	Benzidine	Benzidine	92-87-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U022	Benzo(a)pyrene	Benzo(a)pyrene	50-32-8	0.061	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U023	Benzotrichloride	Benzotrichloride	98-07-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U024	bis(2-Chloroethoxy)methane	bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
U025	bis(2-Chloroethyl)ether	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
U026	Chlornaphazine	Chlornaphazine	494-03-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U027	bis(2-Chloroisopropyl)ether	bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
U028	bis(2-Ethylhexyl) phthalate	bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
U029	Methyl bromide (Bromomethane)	Methyl bromide (Bromomethane)	74-83-9	0.11	15
U030	4-Bromophenyl phenyl ether	4-Bromophenyl phenyl ether	101-55-3	0.055	15
U031	n-Butyl alcohol	n-Butyl alcohol	71-36-3	5.6	2.6
U032	Calcium chromate	Chromium (Total)	7440-47-3	2.77	0.86 mg/l TCLP
U033	Carbon oxyfluoride	Carbon oxyfluoride	353-50-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U034	Trichloroacetaldehyde (Chloral)	Trichloroacetaldehyde (Chloral)	75-87-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U035	Chlorambucil	Chlorambucil	305-03-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U036	Chlordane	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
U037	Chlorobenzene	Chlorobenzene	108-90-7	0.057	6.0
U038	Chlorobenzilate	Chlorobenzilate	510-15-6	0.10	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U039	p-Chloro-m-cresol	p-Chloro-m-cresol	59-50-7	0.018	14
U041	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106-89-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U042	2-Chloroethyl vinyl ether	2-Chloroethyl vinyl ether	110-75-8	0.062	CMBST
U043	Vinyl chloride	Vinyl chloride	75-01-4	0.27	6.0
U044	Chloroform	Chloroform	67-66-3	0.046	6.0
U045	Chloromethane (Methyl chloride)	Chloromethane (Methyl chloride)	74-87-3	0.19	30
U046	Chloromethyl methyl ether	Chloromethyl methyl ether	107-30-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U047	2-Chloronaphthalene	2-Chloronaphthalene	91-58-7	0.055	5.6
U048	2-Chlorophenol	2-Chlorophenol	95-57-8	0.044	5.7
U049	4-Chloro-o-toluidine hydrochloride	4-Chloro-o-toluidine hydrochloride	3165-93-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U050	Chrysene	Chrysene	218-01-9	0.059	3.4
U051	Creosote	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.37 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U052	Cresols (Cresylic acid)	o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88	11.2
U053	Crotonaldehyde	Crotonaldehyde	4170-30-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U055	Cumene	Cumene	98-82-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U056	Cyclohexane	Cyclohexane	110-82-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U057	Cyclohexanone	Cyclohexanone	108-94-1	0.36	CMBST
		Cyclohexanone; alternate[6] standard for nonwastewaters only	108-94-1	NA	0.75 mg/l TCLP
U058	Cyclophosphamide	Cyclophosphamide	50-18-0	CARBN; or CMBST	CMBST
U059	Daunomycin	Daunomycin	20830-81-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U060	DDD	o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
U061	DDT	o-p'-DDT	789-02-6	0.0039	0.087

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		p,p'-DDT	50-29-3	0.0039	0.087
		o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
		o,p'-DDE	3424-82-6	0.031	0.087
		p,p'-DDE	72-55-9	0.031	0.087
U062	Diallate	Diallate	2303-16-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U063	Dibenz(a,h)anthracene	Dibenz(a,h)anthracene	53-70-3	0.055	8.2
U064	Dibenz(a,i)pyrene	Dibenz(a,i)pyrene	189-55-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U066	1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
U067	Ethylene dibromide (1,2-Dibromoethane)	Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
U068	Dibromomethane	Dibromomethane	74-95-3	0.11	15
U069	Di-n-butyl phthalate	Di-n-butyl phthalate	84-74-2	0.057	28
U070	o-Dichlorobenzene	o-Dichlorobenzene	95-50-1	0.088	6.0
U071	m-Dichlorobenzene	m-Dichlorobenzene	541-73-1	0.036	6.0
U072	p-Dichlorobenzene	p-Dichlorobenzene	106-46-7	0.090	6.0
U073	3,3'-Dichlorobenzidine	3,3'-Dichlorobenzidine	91-94-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U074	1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1476-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		trans-1,4-Dichloro-2-butene	764-41-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U075	Dichlorodifluoromethane	Dichlorodifluoromethane	75-71-8	0.23	7.2
U076	1,1-Dichloroethane	1,1-Dichloroethane	75-34-3	0.059	6.0
U077	1,2-Dichloroethane	1,2-Dichloroethane	107-06-2	0.21	6.0
U078	1,1-Dichloroethylene	1,1-Dichloroethylene	75-35-4	0.025	6.0
U079	1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156-60-5	0.054	30
U080	Methylene chloride	Methylene chloride	75-09-2	0.089	30
U081	2,4-Dichlorophenol	2,4-Dichlorophenol	120-83-2	0.044	14
U082	2,6-Dichlorophenol	2,6-Dichlorophenol	87-65-0	0.044	14
U083	1,2-Dichloropropane	1,2-Dichloropropane	78-87-5	0.85	18
U084	1,3-Dichloropropylene	cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
U085	1,2:3,4-Diepoxybutane	1,2:3,4-Diepoxybutane	1464-53-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U086	N,N'-Diethylhydrazine	N,N'-Diethylhydrazine	1615-80-1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U087	O,O-Diethyl S-methyldithiophosphate	O,O-Diethyl S-methyldithiophosphate	3288-58-2	CARBN; or CMBST	CMBST
U088	Diethyl phthalate	Diethyl phthalate	84-66-2	0.20	28
U089	Diethyl stilbestrol	Diethyl stilbestrol	56-53-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U090	Dihydrosafrole	Dihydrosafrole	94-58-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U091	3,3'-Dimethoxybenzidine	3,3'-Dimethoxybenzidine	119-90-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U092	Dimethylamine	Dimethylamine	124-40-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U093	p-Dimethylaminoazobenzene	p-Dimethylaminoazobenzene	60-11-7	0.13	CMBST
U094	7,12-Dimethylbenz(a)anthracene	7,12-Dimethylbenz(a)anthracene	57-97-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U095	3,3'-Dimethylbenzidine	3,3'-Dimethylbenzidine	119-93-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U096	alpha, alpha-Dimethyl benzyl hydroperoxide	alpha, alpha-Dimethyl benzyl hydroperoxide	80-15-9	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U097	Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U098	1,1-Dimethylhydrazine	1,1-Dimethylhydrazine	57-14-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U099	1,2-Dimethylhydrazine	1,2-Dimethylhydrazine	540-73-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U101	2,4-Dimethylphenol	2,4-Dimethylphenol	105-67-9	0.036	14
U102	Dimethyl phthalate	Dimethyl phthalate	131-11-3	0.047	28
U103	Dimethyl sulfate	Dimethyl sulfate	77-78-1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U105	2,4-Dinitrotoluene	2,4-Dinitrotoluene	121-14-2	0.32	140
U106	2,6-Dinitrotoluene	2,6-Dinitrotoluene	606-20-2	0.55	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U107	Di-n-octyl phthalate	Di-n-octyl phthalate	117-84-0	0.017	28
U108	1,4-Dioxane	1,4-Dioxane	123-91-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		1,4-Dioxane; alternate[6] standard for nonwastewaters only	123-91-1	NA	170
U109	1,2-Diphenylhydrazine	1,2-Diphenylhydrazine	122-66-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
		1,2-Diphenylhydrazine; alternate[6] standard for wastewaters only	122-66-7	0.087	NA
U110	Dipropylamine	Dipropylamine	142-84-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U111	Di-n-propylnitrosamine	Di-n-propylnitrosamine	621-64-7	0.40	14
U112	Ethyl acetate	Ethyl acetate	141-78-6	0.34	33
U113	Ethyl acrylate	Ethyl acrylate	140-88-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U114	Ethylenebisdithiocarbamic acid salts and esters	Ethylenebisdithiocarbamic acid	111-54-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U115	Ethylene oxide	Ethylene oxide	75-21-8	(WETOX or CHOXD) fb CARBN; or CMBST	CHOXD; or CMBST
		Ethylene oxide; alternate[6] standard for wastewaters only	75-21-8	0.12	NA
U116	Ethylene thiourea	Ethylene thiourea	96-45-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U117	Ethyl ether	Ethyl ether	60-29-7	0.12	160
U118	Ethyl methacrylate	Ethyl methacrylate	97-63-2	0.14	160
U119	Ethyl methane sulfonate	Ethyl methane sulfonate	62-50-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U120	Fluoranthene	Fluoranthene	206-44-0	0.068	3.4
U121	Trichloromonofluoromethane	Trichloromonofluoromethane	75-69-4	0.020	30
U122	Formaldehyde	Formaldehyde	50-00-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U123	Formic acid	Formic acid	64-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U124	Furan	Furan	110-00-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U125	Furfural	Furfural	98-01-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U126	Glycidylaldehyde	Glycidylaldehyde	765-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U127	Hexachlorobenzene	Hexachlorobenzene	118-74-1	0.055	10
U128	Hexachlorobutadiene	Hexachlorobutadiene	87-68-3	0.055	5.6
U129	Lindane	alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.066
		gamma-BHC (Lindane)	58-89-9	0.0017	0.066
U130	Hexachlorocyclopentadiene	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
U131	Hexachloroethane	Hexachloroethane	67-72-1	0.055	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U132	Hexachlorophene	Hexachlorophene	70-30-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U133	Hydrazine	Hydrazine	302-01-2	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U134	Hydrogen fluoride	Fluoride (measured in wastewaters only)	16964-48-8	35	ADGAS fb NEUTR; or NEUTR
U135	Hydrogen Sulfide	Hydrogen Sulfide	7783-06-4	CHOXD; CHRED, or CMBST	CHOXD; CHRED; or CMBST.
U136	Cacodylic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
U137	Indeno(1,2,3-c,d)pyrene	Indeno(1,2,3-c,d)pyrene	193-39-5	0.0055	3.4
U138	Iodomethane	Iodomethane	74-88-4	0.19	65
U140	Isobutyl alcohol	Isobutyl alcohol	78-83-1	5.6	170
U141	Isosafrole	Isosafrole	120-58-1	0.081	2.6
U142	Kepone	Kepone	143-50-8	0.0011	0.13
U143	Lasiocarpine	Lasiocarpine	303-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U144	Lead acetate	Lead	7439-92-1	0.69	0.37 mg/l TCLP
U145	Lead phosphate	Lead	7439-92-1	0.69	0.37 mg/l TCLP
U146	Lead subacetate	Lead	7439-92-1	0.69	0.37 mg/l TCLP
U147	Maleic anhydride	Maleic anhydride	108-31-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U148	Maleic hydrazide	Maleic hydrazide	123-33-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U149	Malononitrile	Malononitrile	109-77-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U150	Melphalan	Melphalan	148-82-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U151	U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are residues from RMERC only.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All U151 (mercury) wastewaters.	Mercury	7439-97-6	0.15	NA
	Elemental Mercury Contaminated with Radioactive Materials	Mercury	7439-97-6	NA	AMLGM
U152	Methacrylonitrile	Methacrylonitrile	126-98-7	0.24	84
U153	Methanethiol	Methanethiol	74-93-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U154	Methanol	Methanol	67-56-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Methanol; alternate[6] set of standards for both wastewaters and nonwastewaters	67-56-1	5.6	0.75 mg/l TCLP
U155	Methapyrilene	Methapyrilene	91-80-5	0.081	1.5
U156	Methyl chlorocarbonate	Methyl chlorocarbonate	79-22-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U157	3-Methylcholanthrene	3-Methylcholanthrene	56-49-5	0.0055	15
U158	4,4'-Methylene bis(2-chloroaniline)	4,4'-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
U159	Methyl ethyl ketone	Methyl ethyl ketone	78-93-3	0.28	36
U160	Methyl ethyl ketone peroxide	Methyl ethyl ketone peroxide	1338-23-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U161	Methyl isobutyl ketone	Methyl isobutyl ketone	108-10-1	0.14	33
U162	Methyl methacrylate	Methyl methacrylate	80-62-6	0.14	160
U163	N-Methyl N'-nitro N-nitrosoguanidine	N-Methyl N'-nitro N-nitrosoguanidine	70-25-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U164	Methylthiouracil	Methylthiouracil	56-04-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U165	Naphthalene	Naphthalene	91-20-3	0.059	5.6
U166	1,4-Naphthoquinone	1,4-Naphthoquinone	130-15-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U167	1-Naphthylamine	1-Naphthylamine	134-32-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U168	2-Naphthylamine	2-Naphthylamine	91-59-8	0.52	CMBST
U169	Nitrobenzene	Nitrobenzene	98-95-3	0.068	14
U170	p-Nitrophenol	p-Nitrophenol	100-02-7	0.12	29
U171	2-Nitropropane	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U172	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-butylamine	924-16-3	0.40	17

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U173	N-Nitrosodiethanolamine	N-Nitrosodiethanolamine	1116-54-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U174	N-Nitrosodiethylamine	N-Nitrosodiethylamine	55-18-5	0.40	28
U176	N-Nitroso-N-ethylurea	N-Nitroso-N-ethylurea	759-73-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U177	N-Nitroso-N-methylurea	N-Nitroso-N-methylurea	684-93-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U178	N-Nitroso-N-methylurethane	N-Nitroso-N-methylurethane	615-53-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U179	N-Nitrosopiperidine	N-Nitrosopiperidine	100-75-4	0.013	35
U180	N-Nitrosopyrrolidine	N-Nitrosopyrrolidine	930-55-2	0.013	35
U181	5-Nitro-o-toluidine	5-Nitro-o-toluidine	99-55-8	0.32	28
U182	Paraldehyde	Paraldehyde	123-63-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U183	Pentachlorobenzene	Pentachlorobenzene	608-93-5	0.055	10
U184	Pentachloroethane	Pentachloroethane	76-01-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Pentachloroethane; alternate[6] standards for both wastewaters and nonwastewaters	76-01-7	0.055	6.0
U185	Pentachloronitrobenzene	Pentachloronitrobenzene	82-68-8	0.055	4.8
U186	1,3-Pentadiene	1,3-Pentadiene	504-60-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U187	Phenacetin	Phenacetin	62-44-2	0.081	16
U188	Phenol	Phenol	108-95-2	0.039	6.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U189	Phosphorus sulfide	Phosphorus sulfide	1314-80-3	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U190	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
U191	2-Picoline	2-Picoline	109-06-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U192	Pronamide	Pronamide	23950-58-5	0.093	1.5
U193	1,3-Propane sultone	1,3-Propane sultone	1120-71-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U194	n-Propylamine	n-Propylamine	107-10-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U196	Pyridine	Pyridine	110-86-1	0.014	16
U197	p-Benzoquinone	p-Benzoquinone	106-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U200	Reserpine	Reserpine	50-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U201	Resorcinol	Resorcinol	108-46-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U202	Saccharin and salts	Saccharin	81-07-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U203	Safrole	Safrole	94-59-7	0.081	22
U204	Selenium dioxide	Selenium	7782-49-2	0.82	0.16 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U205	Selenium sulfide	Selenium	7782-49-2	0.82	0.16 mg/l TCLP
U206	Streptozotocin	Streptozotocin	18883-66-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U207	1,2,4,5-Tetrachlorobenzene	1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
U208	1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
U209	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
U210	Tetrachloroethylene	Tetrachloroethylene	127-18-4	0.056	6.0
U211	Carbon tetrachloride	Carbon tetrachloride	56-23-5	0.057	6.0
U213	Tetrahydrofuran	Tetrahydrofuran	109-99-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U214	Thallium (I) acetate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U215	Thallium (I) carbonate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U216	Thallium (I) chloride	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U217	Thallium (I) nitrate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U218	Thioacetamide	Thioacetamide	62-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U219	Thiourea	Thiourea	62-56-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U220	Toluene	Toluene	108-88-3	0.080	10
U221	Toluenediamine	Toluenediamine	25376-45-8	CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U222	o-Toluidine hydrochloride	o-Toluidine hydrochloride	636-21-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U223	Toluene diisocyanate	Toluene diisocyanate	26471-62-5	CARBN; or CMBST	CMBST
U225	Bromoform (Tribromomethane)	Bromoform (Tribromomethane)	75-25-2	0.63	15
U226	1,1,1-Trichloroethane	1,1,1-Trichloroethane	71-55-6	0.054	6.0
U227	1,1,2-Trichloroethane	1,1,2-Trichloroethane	79-00-5	0.054	6.0
U228	Trichloroethylene	Trichloroethylene	79-01-6	0.054	6.0
U234	1,3,5-Trinitrobenzene	1,3,5-Trinitrobenzene	99-35-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U235	tris-(2,3-Dibromopropyl)-phosphate	tris-(2,3-Dibromopropyl)-phosphate	126-72-7	0.11	0.10
U236	Trypan Blue	Trypan Blue	72-57-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U237	Uracil mustard	Uracil mustard	66-75-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U238	Urethane (Ethyl carbamate)	Urethane (Ethyl carbamate)	51-79-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U239	Xylenes	Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
U240	2,4-D (2,4-Dichlorophenoxyacetic acid)	2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10
	2,4-D (2,4-Dichlorophenoxyacetic acid) salts and esters		NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U243	Hexachloropropylene	Hexachloropropylene	1888-71-7	0.035	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U244	Thiram	Thiram	137-26-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U246	Cyanogen bromide	Cyanogen bromide	506-68-3	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
U247	Methoxychlor	Methoxychlor	72-43-5	0.25	0.18
U248	Warfarin, & salts, when present at concentrations of 0.3% or less	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U249	Zinc phosphide, Zn_3P_2, when present at concentrations of 10% or less	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U271	Benomyl [10]	Benomyl	17804-35-2	0.056	1.4
U278	Bendiocarb [10]	Bendiocarb	22781-23-3	0.056	1.4
U279	Carbaryl [10]	Carbaryl	63-25-2	0.006	0.14
U280	Barban [10]	Barban	101-27-9	0.056	1.4
U328	o-Toluidine	o-Toluidine	95-53-4	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN.	CMBST
U353	p-Toluidine	p-Toluidine	106-49-0	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U359	2-Ethoxyethanol	2-Ethoxyethanol	110-80-5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U364	Bendiocarb phenol [10]	Bendiocarb phenol	22961-82-6	0.056	1.4
U367	Carbofuran phenol [10]	Carbofuran phenol	1563-38-8	0.056	1.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U372	Carbendazim [10]	Carbendazim	10605-21-7	0.056	1.4
U373	Propham [10]	Propham	122-42-9	0.056	1.4
U387	Prosulfocarb [10]	Prosulfocarb	52888-80-9	0.042	1.4
U389	Triallate [10]	Triallate	2303-17-5	0.042	1.4
U394	A2213 [10]	A2213	30558-43-1	0.042	1.4
U395	Diethylene glycol, dicarbamate [10]	Diethylene glycol, dicarbamate	5952-26-1	0.056	1.4
U404	Triethylamine [10]	Triethylamine	101-44-8	0.081	1.5
U409	Thiophanate-methyl [10]	Thiophanate-methyl	23564-05-8	0.056	1.4
U410	Thiodicarb [10]	Thiodicarb	59669-26-0	0.019	1.4
U411	Propoxur [10]	Propoxur	114-26-1	0.056	1.4

FOOTNOTES TO TREATMENT STANDARDS TABLE 268.40:

1 The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

2 CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

3 Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

4 All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in §268.42 Table 1 - Technology Codes and Descriptions of Technology-Based Standards.

5 Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in §268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

6 Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

7 Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

8 These wastes, when rendered nonhazardous and then subsequently managed in CWA, or CWA-equivalent systems are not subject to treatment standards. (See §268.1(c)(3)and (4)).

9 These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well are not subject to treatment standards. (See 40 CFR 148.1(d)).

10 Between August 26, 1996, and August 26, 1997, the treatment standard for this waste may satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technolgy code CMBST at §268.42 Table 1 of this part, for nonwastewaters; and, biodegradation as definded by the technolgy code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technolgy code CMBST at §268.42 Table 1 of this part, for wastewaters.

BILLING CODE 6560–50–C

3. In § 268.48, the table ''Universal Treatment Standards'' in paragraph (a) is revised to read as follows:

§ 268.48 Universal treatment standards.

(a) * * *

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable.]

Regulated constituent common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as ''mg/l TCLP''
I. Organic Constituents:			
A2213 [6]	30558–43–1	0.042	1.4
Acenaphthylene	208–96–8	0.059	3.4
Acenaphthene	83–32–9	0.059	3.4
Acetone	67–64–1	0.28	160
Acetonitrile	75–05–8	5.6	38
Acetophenone	96–86–2	0.010	9.7
2-Acetylaminofluorene	53–96–3	0.059	140
Acrolein	107–02–8	0.29	NA
Acrylamide	79–06–1	19	23
Acrylonitrile	107–13–1	0.24	84
Aldicarb sulfone [6]	1646–88–4	0.056	0.28
Aldrin	309–00–2	0.021	0.066
4-Aminobiphenyl	92–67–1	0.13	NA
Aniline	62–53–3	0.81	14
Anthracene	120–12–7	0.059	3.4
Aramite	140–57–8	0.36	NA
alpha-BHC	319–84–6	0.00014	0.066
beta-BHC	319–85–7	0.00014	0.066
delta-BHC	319–86–8	0.023	0.066
gamma-BHC	58–89–9	0.0017	0.066
Barban [6]	101–27–9	0.056	1.4
Bendiocarb [6]	22781–23–3	0.056	1.4
Bendiocarb phenol [6]	22961–82–6	0.056	1.4
Benomyl [6]	17804–35–2	0.056	1.4
Benzene	71–43–2	0.14	10
Benz(a)anthracene	56–55–3	0.059	3.4
Benzal chloride	98–87–3	0.055	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205–99–2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluor-anthene)	207–08–9	0.11	6.8
Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
Benzo(a)pyrene	50–32–8	0.061	3.4
Bromodichloromethane	75–27–4	0.35	15
Bromomethane/Methyl bromide	74–83–9	0.11	15
4-Bromophenyl phenyl ether	101–55–3	0.055	15
n-Butyl alcohol	71–36–3	5.6	2.6
Butylate [6]	2008–41–5	0.042	1.4
Butyl benzyl phthalate	85–68–7	0.017	28
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	88–85–7	0.066	2.5
Carbaryl [6]	63–25–2	0.006	0.14
Carbenzadim [6]	10605–21–7	0.056	1.4
Carbofuran [6]	1563–66–2	0.006	0.14
Carbofuran phenol [6]	1563–38–8	0.056	1.4
Carbon disulfide	75–15–0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56–23–5	0.057	6.0
Carbosulfan [6]	55285–14–8	0.028	1.4
Chlordane (alpha and gamma isomers)	57–74–9	0.0033	0.26
p-Chloroaniline	106–47–8	0.46	16
Chlorobenzene	108–90–7	0.057	6.0
Chlorobenzilate	510–15–6	0.10	NA
2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
Chlorodibromomethane	124–48–1	0.057	15
Chloroethane	75–00–3	0.27	6.0
bis(2-Chloroethoxy)methane	111–91–1	0.036	7.2
bis(2-Chloroethyl)ether	111–44–4	0.033	6.0
Chloroform	67–66–3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638–32–9	0.055	7.2
p-Chloro-m-cresol	59–50–7	0.018	14
2-Chloroethyl vinyl ether	110–75–8	0.062	NA
Chloromethane/Methyl chloride	74–87–3	0.19	30
2-Chloronaphthalene	91–58–7	0.055	5.6

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
2-Chlorophenol	95–57–8	0.044	5.7
3-Chloropropylene	107–05–1	0.036	30
Chrysene	218–01–9	0.059	3.4
o-Cresol	95–48–7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108–39–4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106–44–5	0.77	5.6
m-Cumenyl methylcarbamate [6]	64–00–6	0.056	1.4
Cyclohexanone	108–94–1	0.36	0.75 mg/l TCLP
o,p'-DDD	53–19–0	0.023	0.087
p,p'-DDD	72–54–8	0.023	0.087
o,p'-DDE	3424–82–6	0.031	0.087
p,p'-DDE	72–55–9	0.031	0.087
o,p'-DDT	789–02–6	0.0039	0.087
p,p'-DDT	50–29–3	0.0039	0.087
Dibenz(a,h)anthracene	53–70–3	0.055	8.2
Dibenz(a,e)pyrene	192–65–4	0.061	NA
1,2-Dibromo-3-chloropropane	96–12–8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106–93–4	0.028	15
Dibromomethane	74–95–3	0.11	15
m-Dichlorobenzene	541–73–1	0.036	6.0
o-Dichlorobenzene	95–50–1	0.088	6.0
p-Dichlorobenzene	106–46–7	0.090	6.0
Dichlorodifluoromethane	75–71–8	0.23	7.2
1,1-Dichloroethane	75–34–3	0.059	6.0
1,2-Dichloroethane	107–06–2	0.21	6.0
1,1-Dichloroethylene	75–35–4	0.025	6.0
trans-1,2-Dichloroethylene	156–60–5	0.054	30
2,4-Dichlorophenol	120–83–2	0.044	14
2,6-Dichlorophenol	87–65–0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94–75–7	0.72	10
1,2-Dichloropropane	78–87–5	0.85	18
cis-1,3-Dichloropropylene	10061–01–5	0.036	18
trans-1,3-Dichloropropylene	10061–02–6	0.036	18
Dieldrin	60–57–1	0.017	0.13
Diethylene glycol, dicarbamate [6]	5952–26–1	0.056	1.4
Diethyl phthalate	84–66–2	0.20	28
p-Dimethylaminoazobenzene	60–11–7	0.13	NA
2–4-Dimethyl phenol	105–67–9	0.036	14
Dimethyl phthalate	131–11–3	0.047	28
Dimetilan [6]	644–64–4	0.056	1.4
Di-n-butyl phthalate	84–74–2	0.057	28
1,4-Dinitrobenzene	100–25–4	0.32	2.3
4,6-Dinitro-o-cresol	534–52–1	0.28	160
2,4-Dinitrophenol	51–28–5	0.12	160
2,4-Dinitrotoluene	121–14–2	0.32	140
2,6-Dinitrotoluene	606–20–2	0.55	28
Di-n-octyl phthalate	117–84–0	0.017	28
Di-n-propylnitrosamine	621–64–7	0.40	14
1,4-Dioxane	123–91–1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122–39–4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86–30–6	0.92	13
1,2-Diphenylhydrazine	122–66–7	0.087	NA
Disulfoton	298–04–4	0.017	6.2
Dithiocarbamates (total) [6]	137–30–4	0.028	28
Endosulfan I	959–98–8	0.023	0.066
Endosulfan II	33213–65–9	0.029	0.13
Endosulfan sulfate	1031–07–8	0.029	0.13
Endrin	72–20–8	0.0028	0.13
Endrin aldehyde	7421–93–4	0.025	0.13
EPTC [6]	759–94–4	0.042	1.4
Ethyl acetate	141–78–6	0.34	33
Ethyl benzene	100–41–4	0.057	10
Ethyl cyanide/Propanenitrile	107–12–0	0.24	360
Ethyl ether	60–29–7	0.12	160
bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
Ethyl methacrylate	97–63–2	0.14	160
Ethylene oxide	75–21–8	0.12	NA
Famphur	52–85–7	0.017	15
Fluoranthene	206–44–0	0.068	3.4
Fluorene	86–73–7	0.059	3.4
Formetanate hydrochloride [6]	23422–53–9	0.056	1.4
Formparanate [6]	17702–57–7	0.056	1.4
Heptachlor	76–44–8	0.0012	0.066
Heptachlor epoxide	1024–57–3	0.016	0.066
Hexachlorobenzene	118–74–1	0.055	10
Hexachlorobutadiene	87–68–3	0.055	5.6
Hexachlorocyclopentadiene	77–47–4	0.057	2.4
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzo-furans)	NA	0.000063	0.001
Hexachloroethane	67–72–1	0.055	30
Hexachloropropylene	1888–71–7	0.035	30
Indeno (1,2,3-c,d) pyrene	193–39–5	0.0055	3.4
Iodomethane	74–88–4	0.19	65
Isobutyl alcohol	78–83–1	5.6	170
Isodrin	465–73–6	0.021	0.066
Isolan [6]	119–38–0	0.056	1.4
Isosafrole	120–58–1	0.081	2.6
Kepone	143–50–0	0.0011	0.13
Methacrylonitrile	126–98–7	0.24	84
Methanol	67–56–1	5.6	0.75 mg/l TCLP
Methapyrilene	91–80–5	0.081	1.5
Methiocarb [6]	2032–65–7	0.056	1.4
Methomyl [6]	16752–77–5	0.028	0.14
Methoxychlor	72–43–5	0.25	0.18
3-Methylcholanthrene	56–49–5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101–14–4	0.50	30
Methylene chloride	75–09–2	0.089	30
Methyl ethyl ketone	78–93–3	0.28	36
Methyl isobutyl ketone	108–10–1	0.14	33
Methyl methacrylate	80–62–6	0.14	160
Methyl methansulfonate	66–27–3	0.018	NA
Methyl parathion	298–00–0	0.014	4.6
Metolcarb [6]	1129–41–5	0.056	1.4
Mexacarbate [6]	315–18–4	0.056	1.4
Molinate [6]	2212–67–1	0.042	1.4
Naphthalene	91–20–3	0.059	5.6
2-Naphthylamine	91–59–8	0.52	NA
o-Nitroaniline	88–74–4	0.27	14
p-Nitroaniline	100–01–6	0.028	28
Nitrobenzene	98–95–3	0.068	14
5-Nitro-o-toluidine	99–55–8	0.32	28
o-Nitrophenol	88–75–5	0.028	13
p-Nitrophenol	100–02–7	0.12	29
N-Nitrosodiethylamine	55–18–5	0.40	28
N-Nitrosodimethylamine	62–75–9	0.40	2.3
N-Nitroso-di-n-butylamine	924–16–3	0.40	17
N-Nitrosomethylethylamine	10595–95–6	0.40	2.3
N-Nitrosomorpholine	59–89–2	0.40	2.3
N-Nitrosopiperidine	100–75–4	0.013	35
N-Nitrosopyrrolidine	930–55–2	0.013	35
Oxamyl [6]	23135–22–0	0.056	0.28
Parathion	56–38–2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)	1336–36–3	0.10	10
Pebulate [6]	1114–71–2	0.042	1.4
Pentachlorobenzene	608–93–5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzo-furans)	NA	0.000035	0.001
Pentachloroethane	76–01–7	0.055	6.0
Pentachloronitrobenzene	82–68–8	0.055	4.8
Pentachlorophenol	87–86–5	0.089	7.4

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
Phenacetin	62–44–2	0.081	16
Phenanthrene	85–01–8	0.059	5.6
Phenol	108–95–2	0.039	6.2
o-Phenylenediamine [6]	95–54–5	0.056	5.6
Phorate	298–02–2	0.021	4.6
Phthalic acid	100–21–0	0.055	28
Phthalic anhydride	85–44–9	0.055	28
Physostigmine [6]	57–47–6	0.056	1.4
Physostigmine salicylate [6]	57–64–7	0.056	1.4
Promecarb [6]	2631–37–0	0.056	1.4
Pronamide	23950–58–5	0.093	1.5
Propham [6]	122–42–9	0.056	1.4
Propoxur [6]	114–26–1	0.056	1.4
Prosulfocarb [6]	52888–80–9	0.042	1.4
Pyrene	129–00–0	0.067	8.2
Pyridine	110–86–1	0.014	16
Safrole	94–59–7	0.081	22
Silvex/2,4,5-TP	93–72–1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95–94–3	0.055	14
TCDDs (All Tetrachlorodi-benzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630–20–6	0.057	6.0
1,1,2,2-Tetrachloroethane	79–34–5	0.057	6.0
Tetrachloroethylene	127–18–4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
Thiodicarb [6]	59669–26–0	0.019	1.4
Thiophanate-methyl [6]	23564–05–8	0.056	1.4
Tirpate [6]	26419–73–8	0.056	0.28
Toluene	108–88–3	0.080	10
Toxaphene	8001–35–2	0.0095	2.6
Triallate [6]	2303–17–5	0.042	1.4
Tribromomethane/Bromoform	75–25–2	0.63	15
1,2,4-Trichlorobenzene	120–82–1	0.055	19
1,1,1-Trichloroethane	71–55–6	0.054	6.0
1,1,2-Trichloroethane	79–00–5	0.054	6.0
Trichloroethylene	79–01–6	0.054	6.0
Trichloromonofluoromethane	75–69–4	0.020	30
2,4,5-Trichlorophenol	95–95–4	0.18	7.4
2,4,6-Trichlorophenol	88–06–2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93–76–5	0.72	7.9
1,2,3-Trichloropropane	96–18–4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	76–13–1	0.057	30
Triethylamine [6]	101–44–8	0.081	1.5
tris-(2,3-Dibromopropyl) phosphate	126–72–7	0.11	0.10
Vernolate [6]	1929–77–7	0.042	1.4
Vinyl chloride	75–01–4	0.27	6.0
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330–20–7	0.32	30
II. Inorganic Constituents:			
Antimony	7440–36–0	1.9	2.1 mg/l TCLP
Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
Barium	7440–39–3	1.2	7.6 mg/l TCLP
Beryllium	7440–41–7	0.82	0.014 mg/l TCLP
Cadmium	7440–43–9	0.69	0.19 mg/l TCLP
Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
Cyanides (Total) [4]	57–12–5	1.2	590
Cyanides (Amenable) [4]	57–12–5	0.86	30
Fluoride [5]	16984–48–8	35	NA
Lead	7439–92–1	0.69	0.37 mg/l TCLP
Mercury—Nonwastewater from Retort	7439–97–6	NA	0.20 mg/l TCLP
Mercury—All Others	7439–97–6	0.15	0.025 mg/l TCLP
Nickel	7440–02–0	3.98	5.0 mg/l TCLP
Selenium	7782–49–2	0.82	0.16 mg/l TCLP
Silver	7440–22–4	0.43	0.30 mg/l TCLP

UNIVERSAL TREATMENT STANDARDS—Continued

[Note: NA means not applicable.]

Regulated constituent common name	CAS [1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/l [2]	Concentration in mg/kg [3] unless noted as "mg/l TCLP"
Sulfide	18496–25–8	14	NA
Thallium	7440–28–0	1.4	0.078 mg/l TCLP
Vanadium [5]	7440–62–2	4.3	0.23 mg/l TCLP
Zinc [5]	7440–66–6	2.61	5.3 mg/l TCLP

Footnotes to Universal Treatment Standards Table:

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.44.

[2] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[3] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in § 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[4] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[5] These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at § 268.2(i).

[6] Between August 26, 1996, and August 26, 1997, these constituents are not "underlying hazardous constituents" as defined at § 268.2(i).

[FR Doc. 97–2995 Filed 2–18–97; 8:45 am]

BILLING CODE 6560–50–P

Federal Register

Monday
November 25, 1996

Part II

Environmental Protection Agency

40 CFR Part 261, et al.

Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 262, 264, 265, 270, and 271

[IL–64–2–5807; FRL–5634–4]

RIN 2060–AG44

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Under the authority of the Resource Conservation and Recovery Act (RCRA), as amended, the EPA has published standards (59 FR 62896, December 6, 1994) to reduce organic air emissions from certain hazardous waste management activities to levels that are protective of human health and the environment. (The standards are known colloquially as the ''subpart CC'' standards due to their inclusion in subpart CC of parts 264 and 265 of the RCRA subtitle C regulations). These air standards apply to certain tanks, containers, and surface impoundments (including tanks and containers at generators' facilities) used to manage hazardous waste capable of releasing organic waste constituents at levels which can harm human health and the environment.

The EPA previously has stayed the effective date of those rules administratively in order to receive and evaluate comments and ultimately to revise the rules in an appropriate manner. Today's action amends and clarifies the regulatory text of the final standards, clarifies certain language in the preamble to the final rule, and in doing so provides additional options for compliance that give owners and operators increased flexibility in meeting the requirements of the rules while still providing sufficient controls to be protective of human health and the environment. In addition, today's action suspends the applicability and implementation of subpart CC of Parts 264 and 265 from October 6, 1996, to December 6, 1996.

DATES: These amendments are effective October 6, 1996. The applicability and implementation of Subpart CC of Parts 264 and 265 is suspended from October 6, 1996, to December 6, 1996.

ADDRESSES: This document is available on the EPA's Clean-up Information Bulletin Board (CLU–IN). To access CLU–IN with a modem of up to 28,800 baud, dial (301) 589–8366. First time users will be asked to input some initial registration information. Next, select ''D'' (download) from the main menu. Input the file name ''RCRAAMEN.ZIP'' to download this notice. Follow the on-line instructions to complete the download. More information about the download procedure is located in Bulletin 104; to read this type ''B 104'' from the main menu. For additional help with these instructions, telephone the CLU–IN help line at (301) 589–8368.

Docket. The supporting information used for this rulemaking is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to this rulemaking are F–91–CESP–FFFFF, F–92–CESA–FFFFF, F–94–CESF–FFFFF, F–94–CE2A–FFFFF, F–95–CE3A–FFFFF and F–96–CE4A–FFFFF. The RCRA docket is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Hand delivery of items and review of docket materials are made at the Virginia address. The public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA docket office is RCRA Information Center (5305W), U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: For information concerning applicability, permitting, enforcement and rule determinations, contact the appropriate regional representative:

Region I:
Stephen Yee, (617) 565–3550, U.S. EPA, Region I, JFK Federal Building, Boston, MA 02203–0001

Region II:
Abdool Jabar, (212) 637–4131, John Brogard, 637–4162, Jim Sullivan, 637–3812, U.S. EPA, Region II, 290 Broadway, New York, NY 10007–1866

Region III:
Linda Matyskiela,(215) 566–3420, U.S. EPA, Region III, 841 Chestnut Building, Philadelphia, PA 19107

Region IV:
Denise Housley, (404) 562–8495, Rick Gillam, 562–8498, Judy Sophianolpoulos, 562–8604, U.S. EPA, Region IV, 345 Courtland Street, N.E., Atlanta, GA 30365

Region V:
Charles Slaustas, (312) 886–6190, Ros Del Rosario, 886–6195, Uylaine McMahan, 886–4454, U.S. EPA, Region V, 5AE–26, 77 West Jackson Street, Chicago, IL 60604

Region VI:
Michelle Peace, (214) 665–7430, David McQuiddy, 665–6722, U.S. EPA, Region VI, 1445 Ross Avenue, Suite 1200, Dallas, TX 75202–2733

Region VII:
Don Lininger, (913) 551–7724, Ken Herstowski, 551–7631, U.S. EPA, Region VII, 726 Minnesota Avenue, Kansas City, KS 66101

Region VIII:
Mindy Mohr, (303) 312–6525, U.S. EPA, Region VIII, 999 18th Street, Suite 500, Denver, CO 80202–2466

Region IX:
Stacy Braye, (415) 774–2056, Jean Daniel, 774–2128, U.S. EPA, Region IX, 75 Hawthorne Street, San Francisco, CA

Region X:
Linda Liu, (206) 553–1447, David Bartus, 553–2804, U.S. EPA, Region X, OAQ–107, 1200 Sixth Avenue, Seattle, WA 98101

For general information about the RCRA Air Rules, or specific rule requirements of RCRA rules, please contact the RCRA Hotline, toll-free at (800) 424–9346. For questions about testing or analytical methods mentioned in this notice, please contact the Emission Measurement Center (MD–19), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone (919) 541–5374. For information concerning the analyses performed in developing this rule, contact Ms. Michele Aston, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

Note: The EPA notes that this published preamble differs in two respects from that signed by the Administrator on October 4, 1996. First, the EPA has altered the wording of the **DATES** section of the rule to indicate that these amendments are suspended between the period October 4, 1996, and December 6, 1996. The alteration is in the use of the new term, ''suspend.'' The result of this alteration is equivalent to that in the version of the rule signed October 4, 1996; namely, that the final regulations, as amended by the action signed October 4, 1996, take effect on December 6, 1996. The reason for the altered language is essentially due to conventions in printing format. The EPA has also added an explanation in the preamble to clarify that, in revising this terminology, the EPA is not altering its intent that the effective date of the regulations will be December 6, 1996.

Second, with respect to the issue of whether RCRA subpart AA and BB standards apply to recycling units (i.e., units performing the actual process of recycling) at 90-day generator facilities, the October 4, 1996, preamble did not clearly reflect the text of the regulation or the Agency's intention. The Agency's intent is that recycling units which are exempt from RCRA under 40 CFR 261.6(c)(1) are not subject to subpart AA and

BB standards under 40 CFR part 264 or 265, unless some other unit at the facility has to obtain a RCRA permit. In addition, it is the Agency's intent that units recycling waste that have permit-exempt status by virtue of the provisions of 40 CFR 262.34 (the 90-day unit provision), but are not exempt under the requirement of 40 CFR 261.6(c)(1), are subject to the 40 CFR part 265, subpart AA and BB standards. The preamble discussion contained in the version of this notice signed October 4, 1996, did not clearly distinguish between these two populations, and thus could have easily been interpreted to be contrary to this intent. The EPA has edited the preamble text to clearly reflect its intent.

The EPA believes that making this clarifying change can be done without re-proposing the edited preamble language. In promulgating the October 4, 1996, signed amendments, the EPA did not voice any intention to deviate from previous regulatory actions under this rulemaking that, when applying to generator facilities, subpart AA and BB requirements cover only 90-day tanks and containers (see December 6, 1994, promulgated rule 59 FR at page 62909; final rule Background Information Document, EPA–453/R–94–076b, at page 7–11; July 22, 1991, proposed rule at 56 FR at page 33530; proposed rule Background Information Document, EPA–450/3–89–023c, at page L–3). For this purpose, the EPA does not consider a recycling unit which is exempt from permitting under 40 CFR 261.6(c)(1) to be a 90-day tank or container. Any suggestion in the October 1996 preamble that these recycling units would all be covered would have expanded the scope of the underlying rule, contrary to EPA's stated intent.

The primary reason EPA is correcting the preamble language now (as opposed to a later Federal Register notice, perhaps with a public comment period) is to minimize any confusion on this issue. The best way to do so is to have the Federal Register publication be accurate, not to issue a later notice correcting and clarifying preamble language. The EPA is therefore making changes to be incorporated into this Federal Register notice, in an effort to correct any potentially confusing preamble discussions before publication. This revised notice will replace the version of the notice signed by the Administrator on October 4, 1996, which was previously available on the EPA's CLU–IN electronic bulletin board.

SUPPLEMENTARY INFORMATION:

Regulated Entities

The entities potentially affected by this action include:

Category	Examples of regulated entities
Industry	Businesses that treat, store, or dispose of hazardous waste and are subject to RCRA subtitle C permitting requirements, or that accumulate hazardous waste on-site in RCRA permit-exempt tanks or containers pursuant to 40 CFR 262.34(a).
Federal Government.	Federal agencies that treat, store, or dispose of hazardous waste and are subject to RCRA subtitle C permitting requirements, or that accumulate hazardous waste on-site in RCRA permit-exempt tanks or containers pursuant to 40 CFR 262.34(a).

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be interested in the amendments to the regulation affected by this action. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria in § 264.1080 and § 265.1080 of the RCRA subpart CC air rules. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

Background

Section 3004(n) of RCRA requires EPA to develop standards to control air emissions from hazardous waste treatment, storage, and disposal facilities as may be necessary to protect human health and the environment. This requirement echoes the general requirement in section 3004(a) and section 3002(a)(3) to develop standards to control hazardous waste management activities as may be necessary to protect human health and the environment. The Agency has issued a series of regulations to implement the section 3004(n) mandate; these regulations control air emissions from certain process vents and equipment leaks (part 264 and part 265 subparts AA and BB), and emissions from certain tanks, containers, and surface impoundments (the subpart CC standards, which are the primary subject of today's action).

The EPA is today amending the final subpart AA, BB, and CC standards. Since the publication of the final subpart CC rule (59 FR 69826, December 4, 1994), the EPA has published three Federal Register documents to delay the effective date of that rule. The first (60 FR 26828, May 19, 1995) revised the effective date of the standards to be December 6, 1995. The second (60 FR 56952, November 13, 1995) revised the effective date of the standards to be June 6, 1996. The third (61 FR 28508, June 5, 1996) further postponed the effective date for the rule requirements until October 6, 1996. The EPA has also issued an indefinite stay of the standards specific to units managing wastes produced by certain organic peroxide manufacturing processes (60 FR 50426, September 29, 1995).

On August 14, 1995, the EPA published a Federal Register document entitled, ''Proposed rule; data availability'' (60 FR 41870) and opened RCRA Docket F–95–CE3A–FFFFF to accept comments on revisions that the EPA was considering for the final subpart CC standards. The EPA accepted public comments on the appropriateness of these revisions through October 13, 1995. Throughout 1995 and into the present year, the EPA also engaged in repeated discussions with representatives of the groups filing petitions for review challenging the subpart CC standards.

Sixty-four comment letters were received by the EPA in response to the August 14, 1995 notice of ''Proposed rule; data availability;'' the commenters included companies affected by the rules, trade associations, consulting companies, and one State environmental agency. Most comment letters contained multiple comments. Comments generally supported the proposed amendments although many offered specific criticisms and suggested changes. The EPA considered all comments on the proposed rule amendments in developing the final amendments published today.

In the August 14, 1995 notice of ''Proposed rule; data availability,'' the EPA requested comment on specific revisions to the final subpart CC tank, surface impoundment, and container standards that the EPA was considering. The notice identified those provisions of the final rule that the revisions would potentially affect which included the waste determination procedures, the standards (or technical requirements) for tanks and containers, and the applicability of the final standards to units that operate with air emission controls in accordance with certain Clean Air Act standards. In addition, it was noted that the revisions would reduce the monitoring, inspection, recordkeeping, and reporting requirements for affected tanks, surface impoundments, and containers.

To further inform the affected public of the major clarifications, compliance options, and technical amendments

being considered, the EPA conducted a series of seminars during August and September of 1995. A total of six seminars were held nationally. (Refer to EPA RCRA Docket No. F–95–CE3A–FFFFF, Item No. F–95–CE3A–S0017.) During these seminars, additional comments were received on the RCRA air rules for tanks, surface impoundments, and containers. These comments were also considered by the EPA in developing these amendments.

On February 9, 1996, the EPA published a Federal Register notice (61 FR 4903), ''Final rule; technical amendment,'' which made clarifying amendments in the regulatory text of the final standards, corrected typographical and grammatical errors, and clarified certain language in the preamble to the final rule to better convey the EPA's original intent.

Today's action amends provisions of the final subparts AA, BB, CC rules to better convey the EPA's original intent, to provide additional flexibility to owners and operators who must comply with the rules, and to change the effective date of the requirements contained in the subpart CC rules. The amendments to subparts AA, BB, and CC that are being promulgated today are discussed below in various sections of this preamble. Comments received on the proposed amendments and the EPA's responses to those comments are also discussed together with the changes being made by today's action. Some commenters submitted comments on aspects of the original rule that were unaffected by, and not reopened by the proposed amendments. These comments are outside the scope of the rulemaking for the proposed amendments and, therefore, these comments, although perhaps mentioned, are not addressed in this rulemaking.

In today's amendments, certain sections of the subpart CC rules are reprinted in total; this accounts, in large part, for the lengthy amendatory language contained in today's amendments. Reprinting of entire sections of the rule is being done for two reasons. First, some sections of the rule have been entirely redrafted to improve organizational structure and drafting clarity and to avoid ambiguity while only making minor revisions to the basic control requirements of the rule. Second, in other sections of the rule, the technical requirements have been changed significantly or options added to increase flexibility for the source owner or operator. Therefore, to ensure the rule is implemented as intended and for the convenience of the public, the EPA decided to reprint these entire sections. In doing so it was not intended to completely reopen these entire sections of the rule for judicial review or legal challenge. As provided by section 7006(a), judicial review is not newly available for aspects of the subparts AA, BB, and CC rules that were already finalized more than 90 days ago, and which are not substantively addressed by today's amendments.

The information presented in this preamble is organized as follows:

I. Subpart I—Use and Management of Containers and Subpart J—Tank Systems

Under the existing RCRA regulations, hazardous waste generators who accumulate waste on-site for up to 90 days in tanks and containers (''90-day tanks and containers'' or ''90-day units'') may permissibly do so without obtaining a storage permit provided the generator complies with certain conditions specified in 40 CFR 262.34(a). The conditions include compliance with the requirements of 40 CFR part 265, subpart I when the waste is accumulated in a container and 40 CFR part 265, subpart J when the waste is accumulated in a tank.

The subpart CC regulations proposed by the EPA on July 22, 1991 (56 FR 33491) contained provisions to amend the conditions with which a hazardous waste generator must comply to exempt 90-day tanks and containers from RCRA subtitle C permitting requirements, namely to comply with standards set out in subparts AA, BB, CC applicable to tanks and containers. The EPA took comments on this proposed action and responded to those comments in (among other places) the preamble to the 1994 final subpart CC regulations. The 1994 final rules regarding 90-day tanks and containers were the same as those proposed.

As noted in Section VI.D of the preamble to the 1994 final subpart CC RCRA air rules (59 FR 62910, December 6, 1994), the organic air emissions from 90-day tanks and containers are sufficient to have an adverse and significant effect upon human health and the environment and therefore ''led the EPA to require that these units comply with the appropriate air emission control requirements of the subpart AA, BB, and CC standards to maintain an exemption from permitting.''

Commenters requested that EPA clarify precisely when 90-day units are subject to the subpart AA, BB, and CC standards, and, in a related question, requested clarification as to when these rules would apply to units that are engaged in recycling. With respect to when the subpart AA, BB, and CC rules apply to 90-day units that are not recycling units (for example, tanks or containers that store hazardous waste before recycling), the EPA intends that the subpart AA, BB, or CC standards apply so long as the substantive applicability provisions of one or more of these subparts is satisfied. This means, for example, that if the 90-day units are receiving hazardous waste with organic concentrations of at least 10 per cent by weight, the subpart BB standards would apply to the associated equipment components; on the other hand, if the units only receive hazardous waste below this applicability threshold, the subpart BB requirements would not apply (see § 265.1050(b)). Similarly, the subpart CC air emission control requirements would apply to a 90-day tank or container if the owner or operator does not demonstrate that the hazardous waste stored in the unit contains average volatile organic concentrations below 500 ppmw. It should be noted that the fact that one of these subparts applies does not automatically mean that the others apply as well. Thus, for example, if a generator manages hazardous waste with organic concentration of 500 ppmw in a tank

equipped with an open-ended valve, the unit would be subject to the subpart CC standards (See § 265.1080(a)). This does not mean that the open-ended valve is also automatically subject to the subpart BB standards; rather, the respective applicability section of those provisions would have to be satisfied before they would apply.

The EPA notes further, however, that the applicability of the subpart AA and BB standards, prior to publication of the final subpart CC rule in December 1994, was conditioned on there being another unit at the facility otherwise requiring a RCRA permit—the notion being that the subpart AA and BB rules by themselves would not require a facility to obtain a RCRA permit (see Section V of the preamble in 55 FR 25449, June 21, 1990, and §§ 265.1030(b)(2) and 265.1050(b)(2)).[1] This consideration does not apply to 90-day units, since these units are not subject to RCRA permitting requirements in any case. In addition, the risks posed by these units is the same whether or not another unit at the plant has received a RCRA permit; the EPA evaluated and discussed these risks when promulgating the December 1994 final rule and found that substantive controls were necessary to protect human health and the environment. See 59 FR at 62910 and also Appendix L, 90–Day Tanks and Container Impacts, in ''Hazardous Waste TSDF—Background Information for Proposed RCRA Air Emission Standards'' (EPA–450/3–89–023c), June 1991. Consequently, subparts AA and BB apply to 90-day tanks and containers whether or not another unit at the facility has to obtain a RCRA permit (assuming the other applicability criteria in the rule are satisfied, as explained above). For this purpose, the EPA does not consider a recycling unit which is exempt from permitting under 40 CFR 261.6(c) to be a 90-day tank or container. The EPA is adding clarifying language as a part of today's rule amendments to make clear that applicability of subparts AA and BB to 90-day units is not conditioned on another unit at the generator's facility obtaining a RCRA permit.

With respect to the commenters' questions regarding applicability of the subpart AA, BB, CC rules to recycling units (i.e., units actually performing the recycling function, such as a solvent distillation column), EPA notes the following principles. The revised applicability sections to subparts AA and BB state that units that have permit exempt status by virtue of 40 CFR 262.34, including recycling units, will now be subject to subparts AA and BB. In practice, the EPA does not believe that this will include many, if any, recycling units. This is because such units typically are exempt from RCRA permitting by virtue of 40 CFR 261.61(c)(1). Thus, the net effect of these amendments, with respect to recycling units, is to preserve the status quo of regulating those units which are located at a facility which must obtain a RCRA permit for some other unit.

In addition, subpart CC does not apply to recycling units. Section 261.6(d), Requirements for recyclable materials, for example, does not indicate that recycling units must comply with the subpart CC provisions. The reason these provisions do not apply is that the standards are not normally appropriate for recycling units handling volatile hazardous wastes; rather, the subpart AA standards are the appropriate standards. The emission mechanisms for traditional hazardous waste storage tanks (e.g. circular above-ground units with open tops or covered open tops) differ significantly from the emission mechanism of the distillation-type unit used for recycling and certain treatment operations (e.g. air strippers and thin-film evaporators) regulated under subpart AA. Recycling units typically emit air pollutants through some type of process vent, and consequently are controlled under the subpart AA process vent standards. The suppression-type controls (e.g. covers) prescribed for traditional storage and treatment tanks in subpart CC simply are not suitable for most distillation-type units.

Finally, EPA is slightly amending the applicability sections of subparts AA and BB to make clear that these standards can apply to non-recycling units that are located at either TSDF sites or generator accumulation sites, assuming that the units otherwise satisfy the subpart AA or BB applicability requirements. Thus, for example, a steam stripper engaged in conventional hazardous waste treatment at a permitted TSDF could be subject to the subpart AA standards. The risks posed by the types of units enumerated in subparts AA and BB are the same, whether or not they are recycling or non-recycling units, so any distinction between them is unfounded. In fact, today's language merely clarifies the coverage of the existing subpart AA and BB rules, since those rules already cover all units (i.e. recycling and non-recycling) that are subject to the permitting requirements of part 270, and thus covers non-recycling units.

The following examples illustrate these principles.

1. Generator A stores volatile spent solvents (F001) in 90 day tanks before recycling them in an on-site distillation column. The facility has one other unit requiring a RCRA permit. The volatile organic concentration of the waste exceeds the subpart AA, BB and CC applicability thresholds.

In this case, the 90-day storage tanks and associated equipment components are subject to the subpart BB and subpart CC standards, since the substantive applicability standards of both subparts are satisfied. Subpart AA does not apply to the spent solvent storage tanks (assuming the tanks are not distillation, fractionation, thin-film evaporation or other type of unit set out in § 265.1030(b), the subpart AA applicability section). The distillation column (and its associated equipment) is subject to the subpart AA and BB standards, but not the subpart CC standards since subpart CC does not apply to recycling units.

2. Same facts as Example 1 except that the waste contains less than 10 percent total organics and greater than 500 ppmw volatile organics.

In this case, the spent solvent storage tank is subject to the subpart CC standards but the associated equipment components are not subject to the subpart BB standards (since subpart BB does not apply to hazardous wastes with less than 10 percent total organic content). The distillation column is subject to the subpart AA standards for the reasons explained in Example 1. This example illustrates that applicability of one of the subparts (AA, BB, or CC) does not automatically mean that the standards from the other subparts also apply. The substantive applicability provisions of each subpart still must be satisfied.

II. Subpart AA—Air Emission Standards for Process Vents: Standards for Closed-Vent Systems and Control Devices

On the subject of closed-vent systems and control devices, commenters requested a provision for control device downtime to allow for preventive, routine, or non-routine maintenance; an exemption for control devices subject to 95 percent efficiency requirements in other rules from performance test and design analysis requirements; an exemption from monitoring requirements for closed-vent system components that operate under negative pressure; a revision such that only spent carbon removed from a carbon adsorption system that is a hazardous waste must be managed in accordance with subpart CC requirements; and a reduction in the closed-vent system and

[1] The subpart CC rules are not so conditioned.

control device inspection and monitoring requirements.

The EPA has decided to amend certain of the control device and closed-vent system standards of subpart AA in 40 CFR parts 264 and 265 so that these requirements are consistent and up-to-date with the general decisions the EPA has made regarding inspection, monitoring, maintenance, repair, malfunctions, recordkeeping, and reporting requirements for organic air emission control devices and associated closed-vent systems installed and operated to meet requirements of other regulations under the Clean Air Act or RCRA (e.g., National Emission Standards for Hazardous Air Pollutants: Off-Site Waste and Recovery Operations, 61 FR 34140, July 1, 1996). These revisions are both consistent with the integration provisions of RCRA Section 1006(b), which require that RCRA standards be consistent and not duplicative of Clean Air Act standards, and also are a part of the EPA's overall approach of allowing unit-specific Clean Air Act standards to be used in lieu of control requirements under RCRA subpart CC. (See § 265.1080(b)(7) in today's amended rule.) The changes to the control device and closed-vent system standards in no way affect the overall performance or emission reductions achieved by the control devices and closed-vent systems. Therefore, the revised standards are considered by the EPA to be equally protective to those already adopted, and thus adequate to protect human health and the environment. The revisions to the standards for closed-vent systems and control devices in subpart AA of 40 CFR parts 265 and 264 include the changes described below.

The monitoring requirement for a condenser in § 264.1033(f)(2)(vi)(B) and § 265.1033(f)(2)(vi)(B) is being revised such that only the temperature of the exhaust vent stream from the condenser exit must be continuously monitored; the requirement to monitor the coolant fluid temperature exiting the condenser is being dropped. This revision reduces the owner's or operator's monitoring and recordkeeping burden while maintaining the EPA's ability to ensure that the emission control equipment is properly operated and maintained to achieve the required emission reduction.

The closed-vent system requirements in § 264.1033 and § 265.1033 are being revised such that a closed-vent system that is designed to operate at a pressure below atmospheric pressure is not required to be monitored by Method 21 procedures either initially or annually. For these negative pressure systems, an initial visual inspection and annual follow-on inspection is required; in addition, a pressure gauge or other pressure measurement device is required to verify that negative pressure is maintained in the closed-vent system when the control device is operating. As noted in section 10 of the preamble to the earlier subpart CC rule clarifications (61 FR 4910, February 9, 1996), ''the EPA had intended to not require annual monitoring of closed-vent system components which operate under pressure such that all emissions are routed to a control device even if a leak or hole exists in the component. A component that continuously operates under negative pressure would satisfy this intent * * *'' In today's action, the EPA is removing the requirement for the initial leak detection monitoring for negative pressure systems; this change reduces owner or operator burden resulting from any redundant or non-productive monitoring.

Unsafe-to-monitor and delay of repair provisions for closed-vent systems are being added. Corresponding recordkeeping requirements also are being added. This common sense change is made to avoid creating any unsafe conditions as a result of the monitoring requirements of subpart AA, § 264.1033 and § 265.1033. This revision adds the same type of unsafe-to-monitor and delay of repair provisions that are contained for pumps and valves in the subpart BB—Air Emission Standards for Equipment Leaks as well as in other equipment leak standards promulgated under the Clean Air Act.

On April 23, 1996, the EPA published a notice of data availability (61 FR 17863) addressing the narrow issue of whether ''Other Thermal Treatment Facilities'' subject to regulation under subpart P of part 265 (40 CFR 265.370 through 265.383) are eligible to receive for regeneration spent activated carbon which is a hazardous waste. In the December 6, 1994 final subpart CC standards (59 FR 62896), the EPA established a requirement that spent activated carbon removed from a control device had to be managed at particular types of facilities, namely regulated boilers or industrial furnaces, or ''thermal treatment units that (are) permitted under subpart X of 40 CFR part 264 or subpart P of (part 265).'' See 40 CFR 265.1033(l)(1) as promulgated at 59 FR 62935 (December 6, 1994). A parallel requirement was contained in 40 CFR 264.1033(m), but no reference to subpart P was included (59 FR 62927). In the February 9, 1996 technical correction notice, the EPA amended these provisions to clarify that they apply only to activated carbon which is a hazardous waste, and that interim status boilers and industrial furnaces which had certified compliance and interim status incinerators could treat such activated carbon. (See 61 FR 4910, 4911, and 4913.) In doing so, the EPA removed the reference to subpart P facilities in § 265.1033(l)(1), thus removing such facilities from eligibility to receive hazardous waste spent activated carbon.

As a part of today's amendments, EPA is restoring the eligibility of subpart P facilities to treat hazardous waste spent activated carbon. So long as the hazardous waste spent activated carbon is managed safely by such facilities, there is no automatic reason to preclude such facilities' eligibility to manage the spent carbon. However, because the subpart P standards do not contain substantive air emission control provisions that assure that any hazardous organic constituents desorbed from the carbon are adequately controlled rather than emitted to the atmosphere during regeneration or other treatment, the EPA is requiring that units receiving such hazardous wastes meet the control requirements of the subpart CC rules or are units which are subject to emission control requirements under 40 CFR part 61 or part 63. With respect to this last point, this means that the actual unit must meet a part 61 or 63 control standard for hazardous air pollutants. If the standard is no control or if compliance with the standard is determined on a plant-wide (viz. averaging among units) basis, then it could not be used in place of the subpart CC standards.

It should be noted that the EPA is imposing this requirement regardless of the organic content of the carbon being regenerated, so long as the activated carbon is a hazardous waste. This is because the purpose of the carbon is to capture organic emissions, and it is the Agency's judgment that in light of this purpose, the carbon will be saturated with organics which would need to be captured or destroyed and not released indiscriminately during the regeneration process (see 56 FR 7200, February 21, 1991).

Finally, in order to assure maximum flexibility for protective compliance, the EPA is adding that permitted facilities (i.e., Part 264 facilities) complying with either the subpart CC standards, or a part 61 or 63 Clean Air Act standard, are also eligible to receive spent carbon (which is a hazardous waste) for regeneration. Such facilities certainly would be operating protectively and so should be eligible to receive spent carbon. The EPA notes, however, that this provision may be redundant in light

of the provision in the existing rule stating that units which have received a subpart X permit are eligible to receive such activated carbon (§ 265.1033(m)(1)(i)), but commenters indicated a preference for this clarification of eligibility. In order that there be no confusion, the EPA is adding it to the final rule.

III. Subpart BB—Air Emission Standards for Equipment Leaks

Commenters requested that the EPA incorporate into the subpart BB standards recent changes that have been made to other national standards that require equipment leak detection and repair programs. In response, revisions to the emission standards for equipment leaks consist of incorporating changes to the requirements so that the subpart BB requirements in parts 264 and 265 are consistent and up-to-date with the general decisions the EPA has made regarding leak detection and repair program requirements for organic air emission control in other regulations under the Clean Air Act (e.g., National Emission Standards for Hazardous Air Pollutants (NESHAP): Off-Site Waste and Recovery Operations, 61 FR 34140, July 1, 1996, or the National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, 40 CFR part 63, subpart H, 59 FR 19402, April 22, 1994, i.e., the HON). These revisions are consistent with the integration provisions of RCRA Section 1006(b) which require that RCRA standards be consistent and not duplicative of Clean Air Act Standards and are a part of the EPA's overall approach of allowing Clean Air Act standards to be used in lieu of control requirements under RCRA TSDF air rules. The changes to the subpart BB equipment leak standards in no way affect the overall performance or emission reductions achieved. Therefore, the revised standards are considered by the EPA to be equally protective as those being replaced. The revisions to the standards for equipment leaks in subpart BB of 40 CFR parts 265 and 264 include the changes described below.

The applicability provisions of subpart BB (§ 264.1050 and § 265.1050) are revised to exclude equipment that contains or contacts affected hazardous waste for a period of less than 300 hours per calendar year from the equipment leak control requirements. This change parallels the applicability provisions in the Hazardous Organic National Emission Standard for Hazardous Air Pollutants (''HON''). (Supporting information for this decision is contained in the CAA docket A–90–20, item II-B–5.)

The sampling connection system requirements of subpart BB are being revised consistent with the HON such that gases displaced during filling of the sample container are not required to be collected or captured. In the context of the HON, EPA explained that it was not necessary to require control of those vapors. Also, the requirement for no detectable emissions to the atmosphere during return of the purged hazardous waste stream to the hazardous waste management process line, or during collection and recycling of the purged hazardous waste, is being eliminated. Upon further review, the EPA has determined that the emissions from these extremely small amounts of hazardous waste can be adequately controlled if the owner or operator stores the sample waste in a covered container, and ensures it is treated or disposed in a manner consistent with the requirements for the waste stream from which it was extracted.

Under today's amendments, any connector that is inaccessible or is ceramic or ceramic-lined is exempt from the monitoring and recordkeeping requirements of subpart BB as is the case in recent EPA rules such as the HON. (See Section VI.C of the HON preamble for further discussion regarding the rationale for these changes to EPA's equipment leak standards, 59 FR 19445, April 22, 1994)

IV. Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

A. Suspension of Subpart CC Rule Requirements

Today's rule is being signed on October 4, 1996, and the substantive requirements of the rule take effect on December 6, 1996. The EPA is clarifying here that, for all practical purposes, December 6, 1996, is the effective date of the rule. The EPA is further clarifying that the December 6, 1994, rule, which was stayed until October 6, 1996, is not taking effect during the two months between October 6, 1996, and December 6, 1996, the reason being that it is superseded by these October 4, 1996, amendments.

To accomplish this result, the EPA is indicating (in the **DATES** block of this Federal Register document), that the applicability and implementation of Subpart CC of Parts 264 and 265 is suspended until December 6, 1996. The result, as just stated, is that: (1) The December 1994 rules are replaced by the amended rules as of October 4, 1996; and (2) members of the regulated community are not subject to any of the requirements in the October 4, 1996, amended rule between October 4, 1996, and December 6, 1996.

The EPA specified in the 1994 final rule a schedule that established the compliance dates by which different requirements of the final rule must be met. These requirements and compliance dates (all of which are December 6, 1996, or later) are explained further in the final rule (59 FR 62896, December 6, 1994) under **SUPPLEMENTARY INFORMATION.** Today's amendments do not change the dates by which compliance with all the requirements must be achieved. Thus, all compliance dates for the final rule, as amended today, remain as published in the 1994 final rule (59 FR 62896).

Given that the EPA is amending the rule in ways that would increase compliance flexibility and reduce certain regulatory requirements (and in no cases would increase the stringency of the standards or eliminate a previously existing compliance option), the EPA considers it appropriate to suspend the requirements that became effective October 6, 1996, for two months to December 6, 1996. By December 6, 1996, affected sources will have had ample time to make any necessary alterations to their compliance plans in response to today's amendments. Affected sources have been on notice of the final regulations since they were published in December 1994. The EPA expects that by early 1995, most facilities had begun preparing their implementation strategies and planning for any necessary equipment modifications, in anticipation of the originally scheduled implementation date of June 6, 1995. Thus, the EPA considers a two-month suspension to provide sufficient time for affected facilities to become familiar with the revised requirements contained in the amended standards, and to make any necessary revisions to their implementation strategies.

B. Retention of Final Compliance Date

The December 6, 1994 published rule set a final compliance date of December 8, 1997, by which time all required air emission control equipment must be operating (59 FR 62897). The EPA does not believe that suspending the rule requirements necessitates any postponement of the December 8, 1997 compliance date. The final compliance date was chosen to allow time for facility modifications that may be involved in the compliance approach of certain facilities. The EPA believes that, for many air emission control applications, the required control devices can be installed and in operation within several months.

However, the EPA agrees that under some circumstances, the owner's or operator's approach to complying with the air emission control requirements under the subpart CC standards may involve a major design and construction project which requires a longer time to complete. In recognition of these cases, the EPA decided that it is reasonable to allow up to December 8, 1997, for affected facilities to install and begin operation of air emission controls required by the subpart CC standards (See Hazardous Waste TSDF Background Information Document for Promulgated Organic Air Emission Standards, EPA–453/R–94–076b, page 9–7).

The final rule requirements that may necessitate a major modification, as described above, for tanks are paragraphs (b) through (d) of 40 CFR 264.1084 and 265.1085. These paragraphs specify air emission control equipment that must be operated on tanks receiving affected hazardous waste. Similarly, the requirements that may necessitate such a major modification for surface impoundments are paragraphs (b) through (e) of 40 CFR 264.1085 and 265.1086. These paragraphs specify air emission control equipment that must be operated on surface impoundments receiving affected hazardous waste. To comply with these requirements for tanks and surface impoundments, facilities may choose to construct new hazardous waste management units to replace existing units, or may choose to modify existing hazardous waste management units. Examples of facility equipment modifications that could require an extended period of compliance would be replacing a large open surface impoundment with a series of covered tanks, or fitting an existing open tank with a fixed roof vented to a control device. The EPA recognizes that such major modifications or new construction can require several months or more, and therefore allows until December 8, 1997, for facilities to comply with the air emission control requirements of the final subpart CC standards.

In addition, certain States may require that a facility obtain a permit modification prior to performing a major modification such as those described above. The EPA recognizes that such a permit modification can be a lengthy process, and therefore felt it was appropriate to afford an extended compliance period to allow such modifications to be obtained (59 FR 62919). The EPA does not expect that such a lengthy period of implementation would be required in circumstances other than those described above, although § 264.1082(c) allows that such a period is available if necessary.

The final rule provisions that justified a compliance date of December 8, 1997, are not among those that are affected by the revisions being made under today's action. Specifically, the EPA is not considering either a broader applicability or more stringent control requirements for covers and air emission controls on tanks and surface impoundments. All affected facilities thus have been on notice of the final rule air emission control requirements for these units since the final CC rule publication on December 6, 1994. Therefore, the EPA does not consider it appropriate to postpone the compliance date of December 8, 1997, by which all required air emission control equipment must be operating.

It should be noted that the Regional Administrator may elect to extend the implementation date for control equipment at a facility, on a case by case basis, to a date later than December 8, 1997, when special circumstances that are beyond the facility owner's or operator's control delay installation or operation of control equipment and the owner or operator has made all reasonable and prudent attempts to comply with the requirements of the subpart CC rules (see § 265.1082).

C. Applicability

Numerous comments were received concerning overlap between the RCRA subpart CC rules and Clean Air Act NESHAP, particularly the HON. Most commenters argued that subpart CC requirements should not apply to units, either 90-day generators or TSDF, meeting Clean Air Act control requirements, including units meeting standards through emissions averaging.

The EPA fully recognizes that in developing air standards to meet congressional directives established by provisions in the Clean Air Act and Resource Conservation and Recovery Act, the potential exists for regulatory overlap. However, it is the EPA's intention to minimize, if not eliminate, regulatory overlap to the extent that the Agency is allowed under the different legislative acts. Section 1006(b) of RCRA indeed requires that the air standards be consistent with and not duplicative of Clean Air Act standards. Similarly, the Clean Air Act voices a strong preference for consistency of CAA section 112 standards and RCRA standards where practicable (see section 112(n)(7)).

The EPA is aware that at some sites managing hazardous wastes, the owner or operator of the hazardous waste treatment, storage, and disposal facility could be subject to the RCRA air rules under subparts AA, BB, and CC and also subject to a Clean Air Act NESHAP standard such as the Off-Site Waste rule or the HON. At a particular TSDF, some waste management units may be required to use air emission controls under one or the other, but not both, a Clean Air Act NESHAP and the RCRA air rules. However, some other waste management units could be subject to using air emission controls to comply with both sets of rules. It is unnecessary for owners and operators of those waste management units subject to air standards under both sets of rules to perform duplicative testing and monitoring, keep duplicative sets of records, or perform other duplicative actions.

In Section VI.A, *Development of Air Standards Under RCRA,* of the preamble to the final rule (59 FR 62906, December 6, 1994), the EPA discussed the potential for duplication between the RCRA air rules and various rules being developed under the Clean Air Act maximum achievable control technology (MACT) program but noted that the air standards developed under RCRA section 3004(n) did not duplicate or contradict existing NESHAP or new source performance standards (NSPS). As the MACT program has matured and additional standards have been developed, the EPA is now aware that the possibility for overlap is greater than was originally thought.

The EPA has decided that the best way to eliminate any regulatory overlap is to amend the RCRA rules to exempt units that are using air emission controls in accordance with the requirements of applicable Clean Air Act NESHAP or NSPS regulations. Therefore, the subpart CC applicability is amended to exempt any hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63, with the sole exception of tanks being controlled through the use of an enclosure rather than a cover. (The EPA's rationale for placing additional conditions on that control approach is explained in detail in sections E and G of this preamble.) Providing this exemption eliminates the possibility of duplicative or conflicting requirements for those TSDF tanks, surface impoundments, or containers using organic emission controls in compliance with a NESHAP but also subject to requirements under the RCRA standards. It is important to note that this exemption only applies to those

units using organic air emission controls. This seems to EPA to be the best way to assure that air emissions from hazardous waste management units are controlled to the extent necessary to protect human health and the environment. A unit that does not use the required air emission controls but is in compliance with a NESHAP through an ''emission averaging'' or ''bubbling'' provision does not qualify for the exemption since EPA lacks assurance that emissions from the unit are controlled to the extent necessary to protect human health and the environment.[2]

Similarly, if the Clean Air Act standard for the particular unit is no control (for example, because the MACT floor for the source category is no control and the Agency decided not to apply controls more stringent than the floor), the exemption from the RCRA standards would not apply since the unit would not actually be controlled under provisions of the MACT standard. Again, as stated above, the EPA believes the best way to assure protectiveness in this national rule is to require controls on each particular unit.

Section 3004(n) of RCRA, of course, requires that EPA control emissions from (among other things) tanks, surface impoundments, and containers as may be necessary to protect human health and the environment. Some of the Clean Air Act standards, in contrast, are technology-based controls implementing the provisions of section 112(d) of the Clean Air Act. The EPA, however, has found that under some circumstances a technology-based standard may satisfy the RCRA protectiveness requirement by adequately controlling air emissions and thus adequately controlling risk or controlling risk sufficiently that the Clean Air Act section 112(f) residual risk process need not be interdicted. See 60 FR at 32593 (June 23, 1995), the preamble for final MACT standards for the secondary lead source category, and 61 FR at 17369–370 (April 19, 1996), the preamble for proposed MACT standards for hazardous waste combustion units.

The EPA is finding here that where there are MACT air emission control requirements for a specific unit otherwise covered by subpart CC, the MACT requires the same technical air emission controls as would be required under subpart CC. Thus, it follows that compliance with the MACT requirements would thus afford equal protectiveness as would be achieved under subpart CC, and therefore can be considered to satisfy the RCRA protectiveness requirements. This is a conscious effort on the Agency's part to provide consistency of requirements where at all possible in its rulemakings.[3]

The technical requirements for the RCRA air rules in subpart CC as amended are essentially the same as those published by the EPA under the MACT program (e.g., those in subparts OO, PP, and QQ of part 63). A unit controlled under one or the other set of requirements would achieve the same emission reduction and performance level; and the various requirements thus provide the same level of protection.

D. Definitions

Definitions are being added for closure device, continuous seal, enclosure, hard-piping, in light material service, malfunction, metallic shoe seal, no detectable organic emissions, safety device, and single-seal system and other definitions are being revised consistent with their use in the amended regulation. These amended or added definitions do not directly affect the substance of the subpart CC standards, but rather, serve to clarify the 1994 final provisions, or today's amended provisions, of the final regulations.

E. Standards: General

1. Action Level

Several major changes are being made to the general standards for the final subpart CC rule. First, the average VO concentration action level for hazardous waste required to be managed in the units using air emission controls under the rule is being changed to 500 ppmw (as determined at the point of waste origination). Units managing hazardous wastes determined by the owner or operator to have average VO concentrations that remain less than 500 ppmw are not required to use air emission controls under the rule.

The EPA considered a range of possible values to establish the VO concentration limit for the Subpart CC RCRA air rules. The EPA proposed a VO concentration value of 500 ppmw to be used as the action level for the rule (56 FR 33491, July 22, 1991) and promulgated an action level of 100 ppmw in the 1994 final subpart CC rule (59 FR 62897). However, in promulgating this value, the EPA acknowledged that some hazardous waste management units subject to the subpart CC RCRA air rules could be subject to other Clean Air Act NESHAP and NSPS with differing action levels (59 FR 62903, 62906, and 62907).

The EPA received comments in response to the August 14, 1995 Federal Register notice, stating that the 100 ppmw VO concentration action level promulgated by the EPA for the subpart CC RCRA air rules is inappropriate (e.g., the action level cannot be justified on the basis of risk and the action level is too close to the detection limit of method 25D; this results in numerous waste determination errors such as false positives) and is inconsistent with other applicable Clean Air Act NSPS and NESHAP (i.e, the Off-Site Waste rule,

[2] EPA believes it is both reasonable and legally permissible to interpret section 3004(n) to apply to specific waste management units. Section 3004(n) addresses specific unit types (''open tanks, surface impoundments, and landfills''), and the overarching requirement to control air emissions at hazardous waste management ''facilities'' can reasonably be construed as applying to individual units. See *Mobil Oil Corp. v. EPA,* 871 F. 2d 149, 152–54 (D.C. Cir. 1989). On the other hand, ''facilities'' might also be construed to apply to an entire plant, *id.* at 153. Consequently, EPA is not indicating by the discussion in the text that an averaging approach is legally foreclosed. Certain types of site-specific demonstrations, for example, might indicate the appropriateness of an averaging approach to demonstrating that air emissions from hazardous waste management are sufficiently controlled. In such a situation, EPA could interpret the term ''facility'' as applying to an entire plant. What EPA is finding in this rule is that for this national rule (i.e., in the absence of potential case-specific demonstrations), the best way of assuring that emissions from hazardous waste tanks, containers, and impoundments are sufficiently controlled is to require control of each particular unit.

[3] For example, EPA, in promulgating the final requirements for the Off-Site Waste and Recovery Operations NESHAP (61 FR 34147, July 1, 1996), added a series of new subparts to 40 CFR part 63. These subparts included Subpart OO—National Emission Standards for Tanks - Level 1, Subpart PP—National Emission Standards for Containers, Subpart QQ—National Emission Standards for Surface Impoundments, Subpart RR—National Emission Standards for Individual Drain Systems, and Subpart VV—National Emission Standards for Oil-Water Separators and Organic-Water Separators. These standards are essentially identical to the requirements for tanks, containers, and impoundments found in the RCRA subpart CC rule under discussion in this notice.

The EPA set out at length in the Off-Site Waste rule preamble (59 FR 62908) the Agency's goal as to integration of these various air standards, ''the EPA decided to promulgate the air emission control requirements for selected types of units in individual subparts for ease of reference, administrative convenience, and as a step towards assuring consistency of the air emission control requirements applied to similar types of units under different rules. The EPA believes adopting the format of codifying the air emission control requirements for specific unit types in individual subparts will provide significant advantages to both regulated industries and to the Agency.''

''A major advantage for using the unit-specific subpart format for NESHAP and other air rules is for those situations when more than one rule applies to a particular source (e.g., a tank) and each of these rules requires use of air emission controls on that source (e.g., a fixed roof). By establishing unit-specific subparts, all of the rules will reference a common set of design, operating, testing, inspection, monitoring, repair, recordkeeping, and reporting requirements for air emission controls. This eliminates the potential for duplicative or conflicting air emission control requirements being placed on the unit by the different rules, and assures consistency of the air emission control requirements applied to the same types of units.''

the HON, and the proposed new source performance standard (NSPS) for volatile organic compound emissions from the synthetic organic chemical manufacturing industry wastewater (59 FR 46780, September 12, 1994), all apply to wastes and/or wastewaters and all have higher action levels). The commenters recommended that the EPA select a higher action level of 500 ppmw for the rule, consistent with the above noted Clean Air Act rules.

The EPA considered the comments received regarding the action level, other revisions being considered for the final subpart CC RCRA air rules, and changes that the EPA anticipates making for other waste and wastewater related rules. The EPA concluded that a reexamination of the action level determination was appropriate. Based on consideration of the information available to the Agency regarding emissions from hazardous waste management TSDF operations, the EPA has concluded that an average VO concentration value of 500 ppmw is reasonable and accomplishes an adequate general level of protection, as compared with the 100 ppmw action level of the 1994 published rule. As was discussed in Section V.C. of the preamble published on December 6, 1994 (59 FR 62905), all five of the control options considered for the final rule are estimated to achieve similar levels of substantial reductions in nationwide organic emissions from TSDF and in annual cancer incidence. Under the new action level of 500 ppmw, the MIR for most of the 2,300 TSDF nationwide are estimated to be below the target MIR range of between 1×10^{-4} and 1×10^{-6}.

Thus, while the action levels at 100 ppmw and 500 ppmw are not equally protective of human health and the environment to the extent ascertainable by the modeling methodology used, these action levels do achieve the same general range of protection and were in the zone of reasonable values being considered by EPA for selection as the action level for the final rule. After further consideration, the EPA has concluded that the degree of incremental risk reduction at the 500 ppmw action level is so small as to not warrant the inconsistency and attendant disruption with other air rules applicable to hazardous waste TSDF. This incremental risk reduction is made less relevant by the fact that the EPA has already stated in the preamble to the final rule (59 FR 62905) that (even at the 100 ppmw action level), ''the EPA is further evaluating the waste management practices and the specific chemical compounds composing the organic emissions from those individual TSDF for which the MIR values are estimated to be greater than the historical RCRA target MIR levels. Following this evaluation, the EPA will determine what other actions, such as the use of section 3005(c)(3) omnibus permitting authority or additional rulemaking, are necessary to attain the health-based goals of RCRA section 3004(n).''

2. Treatment Alternatives

The treatment alternatives in the General Standards (§ 264.1083 and § 265.1083) are being revised where appropriate to reflect the new action level of 500 ppmw. The treatment alternatives contained in the General Standards of the subpart CC RCRA air rules provide owners or operators with a selection of alternative provisions for determining when a treated hazardous waste is no longer required to be managed in units meeting the air emission control requirements of the rule. The alternatives contained in the final CC rules published December 6, 1994 are being revised as a result of the change in the action level. The volatile organic concentration criteria contained in some of the alternatives are being revised upward to reflect the higher action level of 500 ppmw. Additional alternatives also are being added to the rule to provide greater flexibility to the owner or operator in the treatment of hazardous waste. The changes being made to the General Standards by today's action are described below.

For the treatment option that requires an organic reduction efficiency for the process of at least 95 percent and an average VO concentration of the waste at the point of waste treatment of less than 50 ppmw (§ 264.1082(c)(2)(ii)), the criteria for the average VO concentration of the treated waste is raised to 100 ppmw in direct response to the change in the action level. The value of 50 ppmw was chosen for the 1994 final rule to provide some added level of demonstration that co-mingled wastes streams had achieved a level of organic reduction through treatment, rather than through dilution (see 59 FR 62915, December 6, 1994). The selection of 50 ppmw in the 1994 final rule guaranteed that hazardous waste streams with VO concentrations of 2,000 ppmw or less at their point of waste origination were being reduced by 95% organics through treatment, as opposed to dilution. For today's final rule, EPA considers it appropriate to modify that 50 ppmw value to be 100 ppmw. In part, EPA is making this modification in response to comments that the value of 50 ppmw was too close to the level of detection for the test method 25D, and was therefore a very difficult and costly demonstration for the facility. After further consideration, the EPA feels that an exit concentration value of 100 ppmw is much less difficult and costly for a facility to make. Further, when combined with the revised action level of 500 ppmw for the overall rule, an exit value of 100 ppmw will ensure that the majority of hazardous waste streams are achieving the 95% reduction through treatment, as opposed to dilution that may occur through commingling.

For the treatment option that allows mixed hazardous waste to be treated by an organic destruction or removal process that reduces the VO concentration of the hazardous waste to meet a site-specific treatment process exit concentration limit (§ 264.1082(c)(2)(v)); the requirement that only hazardous waste enter the process is being removed. The exit concentration limit is being revised to be the lowest average VO concentration at the point of waste origination for each individual waste stream entering the process or 500 ppmw, whichever value is lower (this latter change is consistent with the revised action level for the standards also contained in today's action). Upon evaluation of this option, the EPA agreed with commenters that making these revisions will allow operators to use this option with a greater number of waste management systems, while still ensuring that reductions in VO concentrations are achieved through organic treatment or removal, as opposed to dilution.

A treatment option (§ 264.1082(c)(2)(vi)) is being added that requires an organic reduction efficiency for the process equal to or greater than 95 percent, and the average VO concentration of each individual waste stream entering the process is certified by the owner or operator to be less than 10,000 ppmw at the point of waste origination. This option is being added in response to commenters' concerns that many waste treatment operations have a multitude of waste streams being co-mingled early in the treatment process, and it would be infeasible for an operator to evaluate each waste stream. Further, the commenters stated that for these same treatment systems, the concentration of the hazardous waste streams at their point of waste origination is relatively low (e.g. 600 ppmw), and the exit concentration that would be required to demonstrate a 95% removal efficiency (in this example 30 ppmw) is below the level of detection of many organic test methods. Therefore, the EPA considered it reasonable to allow the owner or

operator to document the 95% organic removal efficiency of the control device, and certify that no waste streams greater than 10,000 ppmw at their point of origination were entering the centralized treatment process. The EPA chose the upper value of 10,000 ppmw because any waste stream with less than 10,000 volatile organic concentration, when treated with a 95% efficient organic control device, would be reduced to below 500 ppmw (and thus would not require further control under the subpart CC regulations. The EPA considers the combination of these two criteria (95% efficient organic control device, and waste streams below 10,000 ppmw VO concentration at their point of waste origination) to be adequate to ensure that any waste stream entering the treatment process is adequately treated for the purpose of the subpart CC standards.

3. Exemptions

An exemption from subpart CC control requirements is added to the General Standards to further clarify that a tank or surface impoundment used for biological treatment of hazardous waste in accordance with provisions in the subpart CC General Standards (§ 265.1082(c)(2)(vi) or § 264.1082(c)(2)(vi)) is exempt from the control device requirements under the rule. This was the Agency's intent in the 1994 promulgated rule, but several commenters advised the EPA that this intent was not evident. Therefore, the EPA is making this addition to the General Standards to more clearly describe this intent.

The following two exemptions are being added to the subpart CC General Standards in order to avoid the potential overlap of the subpart CC rules with RCRA standards established as part of the Land Disposal Restrictions (LDR) and to avoid overlap with the recently promulgated Benzene Waste Operations NESHAP.

In response to commenters' requests that compliance with applicable LDR treatment standards be reinstated as a subpart CC treatment alternative, an exemption from the subpart CC control requirements is being added for a tank, surface impoundment, or container if the material placed in the unit is a hazardous waste that meets the numerical concentration limits for organics applicable to the hazardous waste, as specified in 40 CFR part 268 (Land Disposal Restrictions) under Table—''Treatment Standards for Hazardous Waste'' in 40 CFR 268.40, or has been treated by the treatment technology established by EPA for the waste in 40 CFR 268.42(a), or treated by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).

The EPA in fact originally proposed such a provision (see 56 FR 33491, July 22, 1991), and commenters stressed again that wastes meeting LDR requirements for organics would have reduced organic concentrations sufficiently so that there need not be air emission controls on the units receiving the wastes. Upon reflection, EPA now agrees with these comments. The LDR treatment standards are based on the performance of Best Demonstrated Available Technology and are deemed sufficient to minimize threats to human health and the environment posed by land disposal of the waste. See 51 FR 40572, November 7, 1986 and RCRA section 3004(m)(1). In fact, the standards for most organics reflect the performance of combustion technology, which destroys organics to non-detectable levels, so that the treatment standard is actually the analytic detection limit for the organic times a factor which reflects technological variability. Consequently, it is EPA's finding here that units receiving wastes that satisfy these standards for organics need not be controlled further, since the organics in the wastes are already reduced to levels where threats posed by release of the organics have been minimized.

The EPA notes that, to be exempt from the subpart CC standards, the waste must meet the LDR treatment standards for that waste whether or not the waste actually is prohibited (or restricted) from land disposal, i.e., whether or not the waste is going to be ultimately land disposed. Thus, for example, if an organic ignitable waste is going to be managed in tanks and ultimately disposed of in a manner not involving land disposal, in order for the tanks to be exempt from subpart CC (assuming the subpart CC rules otherwise apply), the waste would have to meet the treatment standards for D001 wastes. It should be clear from this example that the treatment standards are being used here as a means of demonstrating that further control of air emissions from the waste is not necessary to protect human health and the environment. This determination does not hinge on whether the waste is being land disposed (i.e., on whether the waste would otherwise have to be treated to meet the standard as a precondition to land disposal).

The EPA is amending the 1994 final rule to address certain of the commenters' concerns regarding applicability of the subpart CC rules to incinerator bulk feed tanks (that is, tanks used for bulk feed of hazardous waste to an incinerator). A standard industry practice is to control the air emissions from these tanks by enclosing the tank and feed operation, and venting emissions for the enclosure through a closed-vent system to an organic emission control device. The EPA has received comments stating that some industry members have alternate designs which allow them to effectively operate bulk incinerator feed systems using a tight-fitting cover on the tank and enclosing the feed line, with all emissions vented to a control device.

The EPA is addressing two issues with respect to those former bulk feed operations. The first is the efficiency of the organic control device, and whether existing facilities must replace those devices previously installed to comply with the Benzene Waste Operations NESHAP. The second issue is whether an enclosure can provide adequate capture and control of organic emissions from an open tank, when compared with a tight-fitting cover on that tank.

The subpart CC rules require 95% reduction of total organics in vapor streams, by weight. The Benzene Waste Operations NESHAP (40 CFR part 61, subpart FF) requires 98% reduction of benzene in vapor streams. This distinction is appropriate, given the Benzene Waste Operations NESHAP's purpose to control benzene specifically, and the subpart CC rule's purpose to control total organics (including benzene). However, incinerator bulk feed operators have installed non-combustion control devices (such as activated carbon systems and condensers) which achieve 98% reduction of benzene, but do not effectively achieve 95% reduction of total organics. (This is because benzene is more amenable to certain reduction technologies than other organic compounds.)

The EPA has decided that it is not justified to require owners and operators to replace these relatively new control devices, which were installed pursuant to EPA regulation, and is therefore adding an exemption for control devices installed on such systems.[4] The EPA is making this decision chiefly due to the high replacement cost, action in reliance on EPA's Benzene Waste Operations

[4] Although there is probably some degree of decrease in protectiveness between these control devices and the proscribed 95% total organic control device requirements, EPA considers that difference to be not significant enough to warrant the substantial dislocations noted above. With respect to newly constructed control devices, there would be obviously, no such dislocations, and EPA therefore, does not believe there is any reason to forego the full protection provided by the 95% total organic control device efficiency requirements.

NESHAP, and the desire for consistency among the various standards controlling organic constituents.

With respect to enclosures used in lieu of a discreet tank cover, the issue is the same as that which EPA is addressing for all tank systems (see Section G of this Preamble.)

F. Waste Determination Procedures

Under the subpart CC RCRA air rules, air emission controls are not required for a hazardous waste management unit when the unit manages hazardous waste having an average VO concentration less than the action level (i.e., 500 ppmw at the point of waste origination). As part of the procedure for determining the VO concentration of the hazardous waste, the EPA allowed that an owner or operator could use either: (1) Direct measurement using Method 25D for preparation and analysis of samples of the waste collected in accordance with the procedures specified in the rule; or (2) the owner's or operator's knowledge of the VO concentration in the waste based on information, as specified in the rule.

In response to comments received concerning Method 25D relating to aggressiveness, expense, and repeatability of the method, the EPA decided to add other appropriate test methods that an owner or operator can choose to use for direct measurement of the VO concentration of a hazardous waste (see discussion below). In addition, the EPA is making certain other changes to facilitate the use of organic concentration data obtained using other test methods not specifically listed in the rule. The EPA believes that the changes being incorporated into the waste determination requirements in conjunction with changes to the applicability and action level for the subpart CC RCRA air rules for tanks, surface impoundments, and containers provide a range of options for determining the VO concentration of a hazardous waste such that every owner and operator of a facility subject to the final rule has available practical and inexpensive waste determination alternatives.

The EPA developed Method 25D to provide a relative measure of the potential for specific volatile organic compounds to be emitted from waste materials. When using Method 25D, the waste is analyzed to determine the total concentration, by weight, of all organics purged from the waste sample. However, some commenters stated that measuring all organics resulted in an overly aggressive method. Commenters suggested that there is some universe of organic compounds which usually do not volatilize, but which some test methods would measure. In a practical sense, the EPA does not consider it equitable to require air emission controls for wastes that do not contain organic compounds which are likely to volatilize. In response to these comments, the EPA is amending the waste determination procedures to allow the owner or operator to discount any contribution to the total volatile organic concentration that is a result of including a compound with a Henry's law constant of less than 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. The Henry's law constant of a compound is one indication that is commonly used to predict the potential of a compound to volatilize.

If the waste contains compounds with Henry's law constants below the cutoff level, the VO concentration for the waste can be adjusted to exclude the VO concentration of these compounds from the total VO concentration for the waste stream. The contribution to the measured total VO concentration for the waste that is made by a specific compound can be determined by multiplying the actual concentration of the compound in the waste times the appropriate compound-specific adjustment ''f_m factor'' to obtain the Method 25D VO concentration. The VO concentration for the compound, with a Henry's law constant of less than 0.1 Y/X, can then be subtracted from the total VO concentration measured for the waste. In order to identify those compounds with a Henry's law constant below the cutoff level, the EPA has published a table listing the known compounds as part of today's amendments. The Henry's law constant value used as the cutoff in determining the VO concentration of a waste has been used in other EPA regulations (e.g., the Off-Site Waste and Recovery Operations NESHAP and the HON) and was selected based on modeling studies to identify and classify compounds with a significant potential for air emissions when present in a waste/wastewater system. With this amendment to the waste determination procedures, the EPA considers Method 25D to be an appropriate method for determining the VO concentration of hazardous wastes subject to the subpart CC RCRA air rules. Therefore, Method 25D continues to be an approved test method for determining the VO concentration of a waste, although other methods are allowed as direct measurement under today's amendment. This is discussed in greater detail below.

Other test methods have been developed by the EPA for use in rulemakings under the Clean Water Act that measure the concentration of organic pollutants in municipal and industrial wastewaters (see appendix A to 40 CFR part 136). Commenters suggested that certain of these test methods are applicable to EPA air rulemakings affecting hazardous waste and wastewater management units. After extensive review, the EPA decided that as alternatives to using Method 25D for direct measurement of VO concentration in a hazardous waste for the subpart CC RCRA air rules it is appropriate to add Methods 624, 625, 1624, and 1625 (all contained in 40 CFR part 136, appendix A) and Methods 8260(B) and 8270(C) (both in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'' in EPA Publication SW–846) when these methods are used under certain specified conditions. It is important to note that for each of these methods there is a published list of chemical compounds which the EPA considers the method appropriate to measure. The owner or operator may only use these methods to measure compounds that are contained on the list associated with that method, unless specified validation procedures are also performed. Further, for the purpose of a waste determination, the owner or operator must evaluate the mass of all VO compounds in a waste that have a Henry's Law value above the 0.1 Y/X cutoff. Therefore, the owner or operator is responsible for determining that the analytical method being used for a waste determination is sufficient to evaluate all of the applicable organic compounds that are contained in the waste. If an owner or operator chooses to use a method other than Method 25D to analyze a waste that contains unknown compounds or many different compounds, it may be necessary to perform screening analyses to verify that the alternate analytical method chosen is, in fact, appropriate to evaluate all the necessary compounds.

Because these methods measure the total concentration of various constituents, owners and operators may choose to ''correct'' these measured values to equate to the values that would be measured using Method 25D. This is accomplished by multiplying the total concentration measured values times the appropriate compound-specific adjustment ''f_m factor'' to obtain the Method 25D VO concentration. The EPA has published lists of the compound-specific adjustment factors

in other rulemakings; see Table 1 in the Off-Site Waste and Recovery Operations NESHAP (40 CFR part 63, subpart DD) and Table 34 in the HON (40 CFR part 63, subpart G). Compound specific adjustment factors (f_m factors) for additional compounds can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

Sufficient recovery study results are available for Methods 1624 and 1625 to correct for possible bias, and therefore, these methods are considered adequate by the EPA to characterize the concentration of a hazardous waste sample. In addition, Methods 624 and 625 are appropriate provided the initial calibration of the analytical system is performed with the target compounds to be measured. Methods 8260(B) and 8270(C) are also considered appropriate provided that formal quality assurance procedures are established, followed, and records are maintained to cover those elements of the methods considered relevant to measuring the actual concentration of organic compounds. The quality assurance program must address procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, and preparation steps as well as addressing the overall accuracy and precision of the specific method used.

Sample collection procedures and sample recovery conditions are established by Method 25D (40 CFR part 60, Appendix A). For the hazardous wastes typically managed in the operations subject to the RCRA air rules, the EPA has concluded that using Method 25D sample collection procedures and sample recovery conditions for other analysis methods is reasonable for the purpose of this rulemaking. However, none of the other methods discussed above specifies a sample collection and handling procedure that the EPA considers adequate to minimize the volatilization of organics from the sample prior to analysis. Therefore, to ensure that an adequately representative sample of a hazardous waste is analyzed by the method, an owner or operator that chooses to use either Method 624, 625, 1624, 1625, 8260(B) or 8270(C) for the subpart CC RCRA air rules is required to develop and follow a written sampling plan. Similarly, such a plan is required for alternative methods validated by EPA Method 301 in appendix A of 40 CFR part 63, or the ''Alternative Validation Procedure for EPA Waste and Wastewater Methods'' in appendix D of 40 CFR part 63. This plan must describe a step-by-step procedure for collecting representative samples of the hazardous waste such that material integrity is maintained and minimal loss of organics from the sample occurs throughout the collection and analysis process. An example of an acceptable sampling plan is one that incorporates sample collection and sample handling procedures similar to those specified in Method 25D. The sampling plan is to be maintained on-site in the facility records.

It should be noted that as long as one of the allowable test methods is being used for direct measurement of the VO concentration of a hazardous waste, the EPA would only enforce against the facility on that basis (i.e., using the same test method), unless the method used is not appropriate for the hazardous waste managed in the unit. For example, if the method is not suitable for use on semi-volatile organic compounds and the waste is known to contain organic compounds that are classified as semi-volatile, then the method is not appropriate.

In the published rule, the EPA allows use of knowledge-of-the-waste as the basis for a waste determination (§ 265.1084(a)(2)). Among the waste determination techniques that would have been considered knowledge, was analysis by methods other than 25D, if the alternate method had been validated using Test Method 301, from appendix A of part 63. Certain commenters indicated that it was not clear in the 1994 final rule that data from non-validated methods could be used to make a waste determination, with those results being again, considered knowledge-of-the-waste (as opposed to direct measurement). Today EPA is clarifying that, and, also in response to comments, the EPA has decided to allow organic concentration test data that are validated in accordance specifically with Sections 5.1 and 5.3 and the corresponding calculations in Section 6.1 or 6.3 of Method 301 to be used as direct measurement data. This makes validation of the alternative test method a self-check of the method being validated. Also, if appropriate, owners and operators may choose to ''correct'' values measured by the alternative test method to equate to the values that would be measured using Method 25D by multiplying the measured values times the appropriate compound-specific adjustment ''f_M factor.''

In addition, as discussed in Section II.G of the preamble to the final Off-Site Waste and Recovery Operations NESHAP (61 FR 34140, July 1, 1996), the EPA promulgated a less rigorous validation procedure, ''Alternative Validation Procedure for EPA Waste and Wastewater Methods,'' in Appendix D to 40 CFR part 63 as an alternative to Method 301 for the validation of a test method established by the EPA Office of Water (OW) or the EPA Office of Solid Waste (OSW) when this EPA test method is used for air emission standards. The EPA decided it is appropriate to allow organic concentration test data that are validated in accordance with this method to be used as direct measurement data because it is considered to produce equally reliable validation results. Other test methods not previously mentioned that are used to measure organic concentrations in the waste shall be validated according to section 5.1 or 5.3, and the corresponding calculations in section 6.1 or 6.3, or Method 301 of Appendix A of 40 CFR part 63.

The main point that must be reemphasized regarding direct measurement of VO concentration is that, although the EPA is amending the rule to allow various test methods other than Method 25D to be used in a waste determination, the owner or operator must use a test method(s) that is appropriate for the compounds contained in the waste. The method(s) used for the waste determination must be suitable for and must reflect or account for all compounds in the waste with a Henry's Law constant equal to or greater than 0.1 Y/X at 25 degrees Celsius.

In a further clarification, today's action is revising the waste determination procedures such that for both point of waste origination and point of waste treatment, no distinction is made for batch or continuous processes or for whether the owner or operator is the generator or receives the waste from off-site. The owner or operator chooses an averaging period appropriate for the hazardous waste stream of not more than 1 year. As has been noted previously, a site sampling plan is required that describes the procedure for collecting representative samples of the hazardous waste stream such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained.

As was originally promulgated in the 1994 final rule, in the event that the Regional Administrator and the owner or operator disagree on a determination of the average VO concentration of a hazardous waste stream at the point of waste origination using knowledge, then direct measurement shall be used to establish compliance. As noted above,

because of the expansion of analysis methods in today's amendments, direct measurement to establish compliance is not limited to Method 25D, but can be performed using any of the methods specified in the rule or any test method validated as specified in the rule, as appropriate for the waste managed in the unit. Because of the expansion of analysis methods, the rule has been revised such that, if the Regional Administrator determines that the method used by the owner or operator for a waste determination using direct measurement was not appropriate for the waste managed in the unit, then the Regional Administrator may choose an appropriate method to verify the waste determination.

G. Standards: Tanks

The subpart CC tank standards have been revised to address comments on the proposed technical amendments, to be consistent with tank standards established for related Clean Air Act NESHAP, and to reduce the inspection, monitoring, recordkeeping, and reporting requirements. In general, the amendments published today establish two levels of air emission control (referred to as Level 1 and Level 2 controls) for tanks managing hazardous waste having a maximum organic vapor pressure less than 76.6 kilopascals (kPa). The control level applicable to a tank required to use controls is determined by the tank design capacity and the maximum organic vapor pressure of the material in the tank. Ranges of capacity and vapor pressure limits or criteria have been established for tanks. However, tanks used for waste stabilization processes are required to use specific air emission controls.

For a tank to meet Level 1 controls, the revised final rule specifies that the hazardous waste be managed in a tank using a fixed-roof. For the Level 2 controls, the revised final rule requires that hazardous waste be managed in one of the following: (1) A fixed-roof tank equipped with an internal floating roof; (2) a tank equipped with an external floating roof; (3) a tank vented through a closed-vent system to a control device; (4) a pressure tank; or (5) a tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device.

A tank is allowed to use the Level 1 controls if it meets the conditions that were in the 1994 final subpart CC rule to qualify for control by only a fixed roof, with several revisions to the conditions. In response to comments, the condition that the waste is neither mixed, stirred, agitated, nor circulated within the tank is being dropped; the condition on heating the waste is being revised to require that the hazardous waste in the tank not be heated to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the waste was determined; and the condition that the hazardous waste not be treated by a process that produces an exothermic reaction is being dropped. The EPA agrees with commenters that these conditions are redundant given the criteria based on determination of a maximum organic vapor pressure. The conditions that are being dropped from the rule thus are adequately accounted for in the maximum organic vapor pressure criteria.

The owner or operator of a tank that qualifies for the Level 1 controls may choose to use Level 2 controls. A tank that does not qualify for the Level 1 controls is subject to the Level 2 controls.

Tank Level 1 control requirements consist of a fixed roof meeting the design, operation, inspection, and recordkeeping requirements specified in the rule. Because of commenters' concerns with the safety of workers during tank cleaning, the operating requirements are being clarified to explicitly include the removal of accumulated sludge or other residues from the bottom of the tank as a time when the opening of closure devices or removal of the fixed roof is allowed. In response to commenters' concerns that the subpart 1994 CC rules (inadvertently) required that a conservation vent must discharge through a closed-vent system to a control device, the revised rule states that a pressure relief device, such as a conservation vent which vents to the atmosphere, is allowed for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. Normal operating conditions that might require a pressure relief device to open include internal pressure buildup as a result of loading operations or diurnal ambient temperature fluctuations.

To reduce the inspection, monitoring, and recordkeeping burden of the rule, a number of rule revisions are being made in response to comments. The semiannual inspection requirement for the fixed roof and closure devices is being changed to an annual inspection requirement. The EPA considers this change to greatly reduce the requirements placed on the tank operators, while not affecting the protectiveness of the rules. The regulations still require tanks to be operated with covers that do not have visible openings or gaps; therefore, any openings or gaps will still need to be immediately repaired. The instrument monitoring requirements are being dropped, EPA's rationale being that the fixed roofs are allowed to operate with a conservation vent, and thus, leaks detectable only by an instrument are relatively insignificant. The time during which repair of a defect must be completed is being extended from 15 to 45 calendar days. The delay of repair provisions are being clarified to indicate that repair of a defect on a fixed roof or closure device may be delayed beyond 45 calendar days if repair would require the tank to be emptied or removed from service and no alternative capacity is available at the facility to accept the hazardous waste normally managed in the tank. The recordkeeping requirements are being clarified to explicitly define the information required for the annual inspection.

The revised Tank Level 2 air emission control requirements include options that were available in the 1994 final subpart CC rule, i.e., a tank equipped with a fixed roof and internal floating roof, a tank equipped with an external floating roof, a fixed roof vented through a closed-vent system to a control device, and a pressure tank. In addition, an option is being provided allowing the use of an enclosure vented through a closed-vent system to an enclosed combustion device or a control device designed and operated to reduce the total organic content of the inlet vapor stream by at least 95 percent by weight.

For a tank equipped with a fixed roof and internal floating roof, an operating requirement is being revised, such that, when the floating roof is resting on the leg supports, the process of filling, emptying, or refilling must be accomplished as soon as practical rather than as rapidly as possible. The rationale for this is explained in the preamble of the February 9, 1996 technical amendments (see 61 FR 4910).

Internal floating roof and external floating roof design, operating, inspection, and monitoring requirements are revised to reflect current technology and to be consistent with requirements of Clean Air Act standards for the same equipment (e.g. the off-site waste and recovery operations NESHAP, promulgated July 1, 1996). Again, this is part of the EPA's effort to promote consistency between requirements for similar types of units. Overall performance and emission reductions are effectively unchanged.

For a tank with a fixed roof that is vented through a closed-vent system to a control device, the operating, monitoring, and inspection requirements are being revised

consistent with the Tank Level 1 control requirements described previously. In summary, the times when opening of closure devices or removal of the fixed roof are allowed are being clarified, the rule is being clarified to allow the opening of a safety device, the semiannual inspection required for the fixed-roof and closure devices is changed to an annual inspection requirement, monitoring requirements are dropped, the time during which repair of a defect must be completed is extended from 15 to 45 calendar days, the delay of repair provisions are being clarified to indicate that repair of a defect on a fixed roof or closure device may be delayed beyond 45 calendar days, and the recordkeeping requirements are being clarified to explicitly define the information required for the annual inspection.

In response to the numerous comments regarding establishment of criteria to identify or define a pressure tank, the pressure tank requirements are being clarified to state that the tank shall be designed to operate with no detectable organic emissions during filling to the tank design capacity and the subsequent compression of the vapor headspace in the tank.

For the control option being added as a part of these amendments that allows the use of an enclosure vented through a closed-vent system to an enclosed combustion device or alternative control device, the enclosure must be designed and operated in accordance with the criteria for a permanent total enclosure as specified in 40 CFR 52.741, Appendix B, Procedure T-Criteria for and Verification of a Permanent or Temporary Total Enclosure. The EPA is adding this control option in response to comments from, among others, members of the hazardous waste stabilization industry and the incineration industry, who maintain that certain waste handling or treatment operations (e.g. incinerator bulk feed systems and stabilization) can not feasibly be conducted in covered tanks.

The EPA has made a number of revisions to the regulations that address this concern. As noted earlier, the increased VO concentration action level (from 100 ppmw to 500 ppmw) plus the inapplicability of the rule to hazardous wastes that meet the LDR standard for organic hazardous constituents should sharply reduce the number of situations where a metal-bearing waste undergoing stabilization would also be subject to the subpart CC standards.

In addition, the EPA reexamined the data in the record for those wastes that may undergo stabilization and still be subject to the Subpart CC requirements; this includes data supplied by waste management companies after promulgation of the 1994 final CC rule, in response to EPA's solicitation (see 59 FR 62912, December 6, 1994). However, the data currently available to the EPA do not support the commenters' assertions that no controls at all are needed for these wastes undergoing stabilization. All currently available data indicate that a significant fraction, by mass, of organics in waste are volatilized during stabilization processes.[5]

The EPA recognizes that certain stabilization and waste handling operations can only be feasibly conducted in open tanks (and containers). For such operations, where a cover is impractical, the most practical alternative is a permanent total enclosure that achieves high capture efficiency of the organic compounds emitted from the open tank (or container) and routes them through a closed-vent system to an organic control device. The EPA defines a permanent total enclosure as a ''permanently installed enclosure that completely surrounds a source of emissions such that all (VOC) emissions are captured and contained for discharge through a control device.'' The EPA has developed a set of criteria (in 40 CFR 52.741, appendix B) to ensure high capture efficiencies through proper design and operation of an enclosure and to eliminate the need for expensive and disruptive capture efficiency performance tests. The EPA method states that if a facility meets the criteria for a permanent total enclosure and all emissions are directed to a control device, the capture efficiency may be assumed to be 100 percent and measurement requirements are waived. The EPA has concluded that these enclosure criteria are appropriate for application to waste stabilization operations, bulk feed tank operations, and other waste handling situations where an owner or operator may deem a covered tank impractical; the design and operational criteria allow for necessary worker access to perform necessary operations, while assuring a high capture efficiency. Therefore, in this limited situation, use of an enclosure and control device that meets the criteria specified in the rule, for both the enclosure and the control device, is considered to provide the same level of emission reduction performance as does the other control options provided in the rule for tanks and thus achieves the same level of protection.

One commenter argued that the permanent enclosure criteria are inappropriate because they were originally developed for use in another industry (the paint and coating industry). However, the EPA considers these criteria appropriate for ensuring adequate design and operation of any enclosure used to capture organic emissions. The criteria are not prescriptive, that is, they do not specified detailed design and operation conditions. Rather, the criteria are just that: Parameters that must be evaluated, and minimum or maximum values that must be met for each parameter. These criteria are the only description known to the Agency that ensure an enclosure is effective in: (1) Preventing significant volumes of organics from escaping to the atmosphere, (2) capturing the organics from within the enclosure, and (3) routing the organics from within the enclosure to a control device.

The permanent total enclosure criteria specifies: (1) Maximum total area for natural draft openings, or NDO (which are holes in the enclosure that allow passage of organics through to the atmosphere), (2) minimum distance from emission points to NDO, (3) minimum face velocity to ensure sufficient negative pressure, (4) closure of any accesses that were not open for the purpose of performing the criteria calculations, and (5) routing of all emissions to a control device. All of these are parameters that would require consideration in the evaluation of any enclosure's effectiveness. Further, the minimum and maximum values specified in the permanent total enclosure criteria were chosen by EPA specifically for the purposes of ensuring adequate capture of organic emissions from industrial operations, such as paint and coating operations. The paint and coating industry operations are similar enough to other industrial operations, including waste treatment, that it is appropriate to use the permanent total

[5] Recent data supplied to EPA (including information contained in docket F–94–CE3A–FFFFF, and information submitted by subpart CC rule commenters to the EPA's Office of Solid Waste and Emergency Response) do not lead the Agency to conclude otherwise. Rather, the data submitted indicate that numerical quantification methods, or test methods, used to measure the mass of organics emitted during stabilization do not yield consistent or precise results when waste streams below 500 ppmw VO concentration are evaluated. These data, among other factors, prompted the Agency to raise the action level to 500 ppmw. However, the data submitted did not support any revision to the Agency's policy of requiring stabilization of organics to be performed in units with air emission controls. The Agency maintains that stabilization, and other operations that raise the temperature of the waste or agitate the waste, increase the rate of volatilization or organics in the waste. Therefore, it follows that a regulation that considers it appropriate to control the organic emissions from storage of hazardous waste would consider it at least as important to control the organic emissions during treatment of hazardous waste.

enclosure criteria for specifying enclosure integrity elsewhere.

One commenter remarked that the costs to retrofit two particular existing enclosures to the permanent total enclosure criteria would be prohibitive. The EPA does not agree with that remark. After reviewing that data, the EPA estimates that it would be less costly for that facility to upgrade those enclosures than it would be for any facility to retrofit an existing tank with an air-tight cover, which is the requirement for other tanks subject to the subpart CC standards.[6]

Safety devices, as defined in the rule, may be installed on the enclosure, as needed. The closed-vent system and enclosed combustion device or alternative control device must be designed and operated in accordance with standards in subpart CC. The enclosure is required to be inspected initially and annually thereafter. When defects are detected, the owner or operator must make first attempts at repair no later than 5 calendar days after detection and complete repair within 45 days.

Finally, in response to commenters' concerns with the feasibility of transferring solids and sludges between containers and tanks in a ''closed system'' as required by the final rules, the closed system transfer requirements for hazardous wastes transferred to or from a tank and another waste management unit subject to subpart CC control requirements are being revised such that transfer of hazardous waste between a tank and container is not required to be done in a closed system.

H. Standards: Surface Impoundments

Revisions are being made to the subpart CC surface impoundment standards so that, where relevant and appropriate, the inspection, monitoring, recordkeeping, and reporting requirements for surface impoundments are consistent with the requirements established for tanks in subpart CC and for surface impoundments under the Clean Air Act NESHAP. A discussion of these revisions is presented below.

More design and installation information is being included for rigid covers. A provision is being added that clarifies the intent of the 1994 final subpart CC rule, that venting to a control device is not required and that opening of closure devices or removal of the cover is allowed to remove accumulated sludge or other residues from the bottom of the surface impoundment. A provision is being added that explicitly allows opening of a safety device installed on the cover, closed-vent system, or control device at any time conditions require it to do so to avoid an unsafe condition. Also under the technical amendments published today, visual inspection of the rigid cover and closure devices is required initially and annually thereafter, rather than semiannually; leak detection monitoring is only required initially; and there are no requirements for periodic monitoring (as discussed above, the EPA does not consider it warranted to survey for non-visible leaks, while allowing conservation vents to route emissions to the atmosphere). The repair period for a defect also is being extended from 15 to 45 days to be consistent with other CAA regulations (e.g. the HON).

The floating membrane cover design and installation requirements are being clarified, e.g., language is being added to clarify that the ''floating membrane cover shall be designed to float during normal operations on the surface of the liquid contained in the surface impoundment.'' A provision is being added that allows the floating membrane cover to be equipped with emergency cover drains for removal of storm water. Opening of a safety device installed on the cover is allowed at any time conditions require it to do so to avoid an unsafe condition. Visual inspection of the floating membrane cover and closure devices is required initially and annually, rather than semiannually. The leak detection monitoring requirements for floating membrane covers are being dropped. The repair period for a defect is being extended from 15 to 45 days.

The closed system transfer requirements for hazardous wastes transferred to or from a surface impoundment and another waste management unit subject to subpart CC control requirements are being revised such that transfer of hazardous waste between a surface impoundment and container is not required to be done in a closed system. This change is being made to provide consistency within the subpart CC rules; containers are not subject to transfer requirements among other containers; therefore, the EPA does not consider it necessary to require closed transfer between containers and surface impoundments.

I. Standards: Containers

The subpart CC container standards are being significantly revised under today's amendments to address comments on the proposed changes to the container requirements, to make this rule compatible with the existing U.S. Department of Transportation (DOT) regulations for transporting hazardous materials, and to reduce any unnecessary inspection, monitoring, recordkeeping, and reporting requirements.

1. Control Requirements

Commenters stated that promulgated air emission control requirements for containers are impractical to implement or require equipment that is commercially unavailable. Also, commenters stated that the requirements should be consistent with the container air emission control requirements under the Clean Air Act rules.

Since promulgation in December 1994, the EPA has obtained more information on the practices and equipment currently used to manage hazardous waste in containers. Based on consideration of this information, the EPA decided to revise the air emission control requirements for containers to better reflect the container organic emission potential, the various container types, and the common container management practices used for hazardous waste operations. The EPA believes that these revised requirements are technically feasible and practical to implement on all types of containers that the Agency expects to be subject to the rule. These revisions are described in detail later in this section of today's notice.

The EPA is addressing consistency between the air emission control requirements for containers (as well as

[6] The EPA further notes that one of the two enclosures described in this commenter's submission would require only the sealing of a natural draft opening which is too close to an emission point. The other enclosure would require an increase in the face velocity, which could possibly be achieved by closing some of the natural draft openings in the enclosure. The cost to close a natural draft opening is not at all prohibitive; in many instances it can be accomplished with a patch and some air-tight caulk or foam. However, it is conceivable that the facility may need to increase the capacity of the control device for this second enclosure, in order to be able to effectively handle the resulting increased air flow. However, the EPA considers it highly relevant to note that the commenter states that his permitting authority has confirmed the tank inside this enclosure is not subject to the subpart CC standards; therefore, the enclosure would not be required to meet the permanent total enclosure criteria referenced by the subpart CC standards. It should be noted that costs associated with achieving a level of protectiveness required under RCRA 3004(n) are not a consideration in the selection of standards.

The EPA considers it also noteworthy to mention that a hazardous waste treatment industry group polled its members that operate incinerator bulk feed tanks, and was informed that all the member companies polled either: (1) Currently perform the bulk feed operations using covered tanks, (2) currently perform the bulk feed operations inside enclosures which already meet all of the permanent total enclosure criteria, or (3) would consider it reasonable to (and are willing to) upgrade or modify their existing enclosures to meet the permanent total enclosure criteria.

the other affected waste management units) in the RCRA rules and those contained in Clean Air Act NESHAP or NSPS by amending the RCRA rules to include an exemption for those affected units using organic emission controls in accordance with the requirements of any applicable NESHAP or NSPS. Because the Clean Air Act controls for containers are essentially the same as those required under the RCRA air rules, they are considered to provide the same level of protection. In addition, allowing the use of DOT containers is also consistent with the EPA's general objective of avoiding duplication and promoting consistency. The EPA has thoroughly evaluated the control requirements for DOT containers and has worked with DOT in developing these revisions. The EPA concluded that containers that meet applicable DOT requirements under 49 CFR parts 173, 178, 179, and 180 are equivalent in their overall emission reduction performance and therefore provide the same level of protection as do the initial requirements of the final subpart CC rules.

The revised container standards for the subpart CC RCRA air rules establish three levels of air emission control. The control level applicable to a container is determined by the container design capacity, the total organic content of the hazardous waste material in the container, and use of the container. For example, containers with a design capacity less than or equal to 0.1 m^3 (approximately 26 gallons) are not subject to any requirements under the rule, as was the case in the 1994 promulgated CC rule.

Under today's revised subpart CC rule, Level 1 controls are allowed for the following container categories (except when the container remains uncovered for waste stabilization or certain other treatment processes): (1) Containers having a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3 (approximately 119 gallons); and (2) containers with a design capacity greater than 0.46 m^3 and used to manage hazardous wastes that do not meet the definition of ''in light material service'' (i.e., used to manage a hazardous waste where the vapor pressure of one or more of the components in the material is greater than 0.3 kPa at 20 °C, and the total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight). Level 2 controls are required for containers with a design capacity greater than 0.46 m^3 and used ''in light material service,'' except when the container remains uncovered for waste stabilization or certain other treatment processes. Level 3 controls are required for containers having a design capacity greater than 0.1 m^3 that must remain uncovered for waste stabilization processes.

For the containers allowed to use Level 1 controls, the amended rule requires that the hazardous waste be managed either: (1) In a container that meets the relevant DOT regulations on packaging hazardous materials for transportation under 49 CFR parts 173, 178, 179, and 180; or (2) a covered container that meets the requirements specified in the 1994 final CC rule (40 CFR parts 264 and 265). No additional requirements are specified by today's revised final rule for containers complying with the applicable DOT regulations. In the case when an owner or operator elects to comply with the covered container requirements (i.e., non-DOT containers), the container must be equipped with a tight-fitting cover that has no visible gaps, spaces, holes, or other openings. The rule does require a visual inspection when the cover is applied and annually thereafter, if the container remains in on-site storage for a period longer than 1 year. No testing for detectable organic emissions using Method 21 is required. No recordkeeping and reporting are required under the revised final rule for containers using Level 1 controls. The EPA has agreed with commenters' suggestions that any increases in enforceability of the subpart CC standards does not justify the expense and time required by an owner or operator to make and maintain records for the subpart CC regulations for hazardous waste in containers. The vast majority of containers subject to the subpart CC standards are not at a given site for more than 90 days; therefore, the burden associated with maintaining additional records (that is, in addition to existing records required under other applicable regulations, such as the RCRA subpart I, or DOT container requirements) for all containers used to store hazardous waste was deemed to be considerably greater than the recordkeeping requirements for tanks or surface impoundments (particularly when compared with the relatively low volume of hazardous waste, nationwide, that is managed in containers versus tanks and surface impoundments).

For the containers required to use Level 2 controls, today's revised final rule requires that the hazardous waste be managed in one of the following: (1) A container that meets the relevant DOT regulations on packaging hazardous materials for transportation under 49 CFR parts 173, 178, 179, and 180; or (2) a container that operates with ''no detectable organic emissions''; or (3) a container that has been demonstrated within the preceding 12 months to be vapor-tight by using Method 27. Specific design, operating, inspection and monitoring, repair, recordkeeping, and reporting requirements for containers tested using either Method 21 or 27 are specified in the rule.

No additional requirements are specified in the final rule for containers complying with the applicable DOT regulations. However, for compliance with the subpart CC rules, no exceptions under the 40 CFR parts 178 or 179 regulations are allowed for DOT containers except for lab packs meeting the exceptions for combination packaging specified in 40 CFR 173.12(b). In addition, the EPA based its decision to allow use of DOT containers for compliance with the subpart CC rules on the specifications, testing, maintenance, and other requirements for containers that can be reused or refilled under DOT regulations (the typical practice at hazardous waste TSDF). For the purpose of complying with the subpart CC rules, the EPA does not consider it appropriate that a container which is a ''non-reusable container (NRC)'' or ''single-trip container (STC)'' according to DOT requirements, be repeatedly used while at the facility site (i.e., emptied and refilled) for the handling of hazardous waste subject to subpart CC rules. Before a DOT container can be reused, even within the boundaries of a facility site, it must comply with the DOT reconditioning and reuse provisions of the hazardous materials regulations in 49 CFR 173.28.

For the containers required to use Level 3 controls, the revised final rule requires that an open container be placed in an enclosure vented through a closed-vent system to a control device or a covered container be vented directly to a control device. If an enclosure is used, the enclosure is to be designed in accordance with the criteria for a permanent total enclosure as specified in 40 CFR 52.741, Appendix B, Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure. The use of a permanent total enclosure and the design and operating criteria for these enclosures are discussed further in Section G of this preamble.

2. Loading Operations

Requirements for loading hazardous waste into a container are also being revised by today's action in response to the numerous comments received by EPA on this topic. Under the revised final rule there are no requirements for

loading hazardous waste into containers using Level 1 controls. The rationale for this is explained in the preamble to the February 9, 1996 technical amendments (see 61 FR 4909). For containers using Level 2 controls, the loading requirements have been revised to allow the owner or operator the flexibility to use any appropriate loading method that will minimize exposure of the hazardous waste to the atmosphere and thereby reduce organic air emissions, to the extent practical considering the physical properties of the hazardous waste and good engineering and safety practices. Examples of container loading procedures that the EPA considers to meet these requirements include, but are not limited to, using a submerged-fill pipe or other submerged-fill method to load liquids into the container; or using a vapor-balancing or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations.

3. Inspection, Monitoring, Recordkeeping, and Reporting

After consideration of the comments regarding the burden associated with certain aspects of the inspection, monitoring, recordkeeping, and reporting requirements for containers, and review of the effect of these requirements on the emission reduction achieved by these standards, the EPA has determined that it is appropriate to simplify these requirements in today's amendments. Owners and operators of containers using either Container Level 1 or Container Level 2 controls in accordance with the provisions of the rule are required to visually inspect the container and its cover and closure devices to check for defects at the time the owner or operator first manages a hazardous waste in the container or accepts possession of the container at the facility with the exception of those containers emptied within 24 hours of being received. Also, in the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the container and its cover and closure devices are to be visually inspected to check for defects at least once every 12 months.

Under the revisions published here, there are no requirements for periodic Method 21 leak monitoring of containers. The EPA considers this revision appropriate, in light of the relatively low volume of hazardous waste managed in containers (as compared to that volume managed in tanks and surface impoundments) and the transitory nature of containers (i.e. the vast majority of containers, nationwide, do not remain on a given site longer than 90 days). The time and expense required by operators to perform periodic Method 21 monitoring on containers does not seem to be warranted by any anticipated increase in emission reductions or enforceability of the subpart CC standards.

There is only one recordkeeping requirement and no reporting requirements under this rulemaking for containers using either Container Level 1 or Container Level 2 controls. The recordkeeping requirement is to maintain in the facility record a copy of the procedure used to determine that containers with capacities equal to or greater than 0.46 m^3 and do not meet the applicable DOT regulations are not managing hazardous waste in ''light material service.''

Information is also being added to the rule concerning the duration of time that the cover or closure devices can be open for the purpose of adding hazardous waste to or removing hazardous waste from the container or performing other routine activities, such as sampling the hazardous waste in the container. Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure-relief device that vents to the atmosphere is allowed to maintain container internal pressure within design specifications during normal operating conditions, e.g., to release pressure resulting from loading operations or diurnal temperature changes. Opening of a safety device, as defined in the rule, is allowed at any time conditions require it to do so to avoid an unsafe condition.

J. Standards: Closed-Vent Systems and Control Devices

As previously discussed in this preamble under the revisions to the subpart AA provisions for control devices and closed-vent systems, the subpart CC control device and closed-vent system standards are being revised by today's technical amendments to incorporate changes so that these requirements are consistent and up-to-date with the general decisions the EPA has made regarding the inspection, monitoring, maintenance, repair, malfunctions, recordkeeping, and reporting requirements for organic emission control devices and which have been published in other related standards.

In the subpart CC standards for control devices and closed vent systems, provisions are being added to allow up to 240 hours per year for periods of planned routine maintenance of a control device during which time the control device is not required to meet the performance requirements for emission reductions specified in the rule and to exempt control devices from the substantive requirements of this section during a control device system malfunction. Recordkeeping requirements for these provisions are also being added. This change is being made in response to commenters' statements that good engineering and air pollution control practices include maintenance of air pollution control equipment, and that it is reasonable to assume that all such equipment will require either maintenance or repair at some time during the life of the equipment. The EPA is adding this allowance in an attempt to encourage good maintenance of such equipment, and in recognition that if maintenance periods are not allowed, repair periods will be unavoidable; it seems more reasonable to encourage the former, while accepting that both are realities. The value of 240 hours has been selected to be consistent with other air regulations developed under the CAA, such as the HON.

K. Inspection and Monitoring Requirements

The EPA is making revisions to the inspection and monitoring requirements for the final subpart CC RCRA air rules to reflect the revisions to the rule applicability and technical requirements and reduce the burden of these requirements on owners and operators. These revisions are explained in more detail throughout the preamble, above.

L. Recordkeeping and Reporting Requirements

The EPA is changing the recordkeeping and reporting requirements for the final subpart CC RCRA air rules to reflect the revisions to the rule applicability and technical requirements and reduce the burden of these requirements on owners and operators. These revisions are explained in more detail throughout the preamble, above.

V. Administrative Requirements

A. Docket

Six RCRA dockets contain information pertaining to today's rulemaking: (1) RCRA docket number F–91–CESP–FFFFF, which contains copies of all BID references and other information related to the development of the rule up through proposal; (2) RCRA docket number F–92–CESA–FFFFF, which contains copies of the supplemental data made available for public comment prior to promulgation;

(3) RCRA docket number F–94–CESF–FFFFF, which contains copies of all BID references and other information related to development of the final rule following proposal; (4) RCRA docket number F–94–CE2A–FFFFF, which contains information pertaining to waste stabilization operations performed in tanks; (5) RCRA docket number F–95–CE3A–FFFFF, which contains information about potential final rule revisions made available for public comment; and (6) RCRA docket number F–96–CE4A–FFFFF, which contains a copy of each of the comment letters submitted in regard to the revisions that the EPA was considering for the final subpart CC standards. The public may review all materials in these dockets at the EPA RCRA Docket Office.

The EPA RCRA Docket Office is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Hand delivery of items and review of docket materials are made at the Virginia address. The public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA Docket Office is RCRA Information Center (5305W), 401 M Street SW, Washington, DC 20460. The Docket Office is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays.

B. Paperwork Reduction Act

The information collection requirements of the previously promulgated RCRA air rules were submitted to and approved by the Office of Management and Budget (OMB). A copy of this Information Collection Request (ICR) document (OMB control number 1593.02) may be obtained from Sandy Farmer, Information Policy Branch (2136); U.S. Environmental Protection Agency; 401 M Street, SW; Washington, DC 20460 or by calling (202) 260–2740.

Today's amendments to the RCRA air rules should have only a minor impact on the information collection burden estimates made previously, and that impact is expected to be a reduction. The changes consist of new definitions, alternative test procedures, clarifications of requirements, and additional compliance options. The changes are not additional requirements, but rather, are reductions in previously published requirements. The overall information-keeping requirements in the rule are being reduced. Consequently, the ICR has not been revised.

C. Executive Order 12866 Review

Under Executive Order 12866, the EPA must determine whether the proposed regulatory action is ''significant'' and, therefore, subject to the OMB review and the requirements of the Executive Order. The Order defines ''significant'' regulatory action as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The RCRA Subpart CC air rules published on December 6, 1994, were considered significant under Executive Order 12866, and a regulatory impact analysis (RIA) was prepared. The amendments published today clarify the rule, provide more compliance alternatives, make certain regulatory provisions more lenient, and correct structural problems with the drafting of some sections. The OMB has evaluated this action, and determined it to be non-significant; thus it did not require their review.

D. Regulatory Flexibility Act

Pursuant to section 605(b) of the Regulatory Flexibility Act, 5 U.S.C. 605(b), as amended, Pub. L. 104–121, 110 Stat. 847, the EPA certifies that this rule will not have a significant economic impact on a substantial number of small entities and therefore no initial regulatory flexibility analysis under section 604(a) of the Act is required. For the reasons discussed in the December 6, 1994 Federal Register (59 FR 62923), this rule does not have a significant impact on a substantial number of small entities. The changes to the rule do not add new control requirements to the December 1994 rule. The amendments in fact reduce the already-existing requirements. Therefore, the amendments are also not considered significant.

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's Federal Register. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2) given that it amends the rule published in 1994 to reduce the extent of regulation.

E. Unfunded Mandates

Under section 202 of the Unfunded Mandates Reform Act of 1995 (''Unfunded Mandates Act''), the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under section 205, the EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that the action promulgated today does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate or to the private sector. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

VI. Legal Authority

These regulations are amended under the authority of sections 2002, 3001–3007, 3010, and 7004 of the Solid Waste Disposal Act of 1970, as amended by RCRA, as amended (42 U.S.C. 6921–6927, 6930, and 6974).

List of Subjects

40 CFR Part 261

Environmental protection, Air pollution control.

40 CFR Part 262

Air pollution control, Packaging and containers, Tank.

40 CFR Parts 264 and 265

Environmental protection, Air pollution control, Control device, Hazardous waste, Inspection, Monitoring, Packaging and containers, Reporting and recordkeeping requirements, Surface impoundment, Tank, TSDF, Waste determination.

40 CFR Part 270

Administrative practice and procedure, Air pollution, Confidential business information, Hazardous waste, Permit modification, Reporting and recordkeeping requirements.

Dated: October 4, 1996.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I, parts 261, 262, 264, 265, 270, and 271 of the Code of Federal Regulations are amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1a. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

1b. Section 261.6 is amended by revising paragraph (c)(1) to read as follows:

§ 261.6 Requirements for recyclable materials.

* * * * *

(c)(1) Owners and operators of facilities that store recyclable materials before they are recycled are regulated under all applicable provisions of subparts A though L, AA, BB, and CC of parts 264 and 265, and under parts 124, 266, 268, and 270 of this chapter and the notification requirements under section 3010 of RCRA, except as provided in paragraph (a) of this section. (The recycling process itself is exempt from regulation except as provided in § 261.6(d).)

* * * * *

PART 262—STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

1c. The authority citation for part 262 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912, 6922, 6923, 6925, 6937 and 6938, unless otherwise noted.

2. Section 262.34 is amended by revising paragraphs (a)(1)(i) and (a)(1)(ii) to read as follows:

§ 262.34 Accumulation time.

(a) * * *

(1) * * *

(i) In containers and the generator complies with subpart I of 40 CFR part 265; and/or

(ii) In tanks and the generator complies with subpart J of 40 CFR part 265, except §§ 265.197(c) and 265.200; and/or

* * * * *

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart I—Use and Management of Containers

4. Section 264.179 is revised to read as follows:

§ 264.179 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of subparts AA, BB, and CC of this part.

Subpart J—Tank Systems

5. Section 264.200 is revised to read as follows:

§ 264.200 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of subparts AA, BB, and CC of this part.

Subpart K—Surface Impoundments

6. Section 264.232 is revised to read as follows:

§ 264.232 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the applicable requirements of subparts BB and CC of this part.

Subpart AA—Air Emission Standards for Process Vents

7. Section 264.1030 is amended by revising paragraph (b); and removing the refererence ''262.34'' from the note at the end of the section to read as follows:

§ 264.1030 Applicability.

* * * * *

(b) Except for § 264.1034, paragraphs (d) and (e), this subpart applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if these operations are conducted in one of the following:

(1) A unit that is subject to the permitting requirements of 40 CFR part 270, or

(2) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of 40 CFR part 270, or

(3) A unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a 90-day tank or container).

* * * * *

8. Section 264.1033 is amended by revising paragraph (f)(2)(vi)(B); redesignating paragraphs (l) and (m) as paragraphs (m) and (n) and revising the newly designated paragraph (n); by revising paragraph (k); and by adding paragraphs (l) and (o) to read as follows:

§ 264.1033 Standards: Closed-vent systems and control devices

* * * * *

(f) * * *

(2) * * *

(vi) * * *

(B) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ±1 percent of the temperature being monitored in degrees Celsius (°C) or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side).

* * * * *

(k) A closed-vent system shall meet either of the following design requirements:

(1) A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in § 264.1034(b) of this subpart, and by visual inspections; or

(2) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

(l) The owner or operator shall monitor and inspect each closed-vent system required to comply with this section to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:

(1) Each closed-vent system that is used to comply with paragraph (k)(1) of

this section shall be inspected and monitored in accordance with the following requirements:

(i) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this section. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in § 264.1034(b) of this subpart to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

(ii) After initial leak detection monitoring required in paragraph (l)(1)(i) of this section, the owner or operator shall inspect and monitor the closed-vent system as follows:

(A) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in § 264.1034(b) of this subpart to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

(B) Closed-vent system components or connections other than those specified in paragraph (l)(1)(ii)(A) of this section shall be monitored annually and at other times as requested by the Regional Administrator, except as provided for in paragraph (o) of this section, using the procedures specified in § 264.1034(b) of this subpart to demonstrate that the components or connections operate with no detectable emissions.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of paragraph (l)(3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in § 264.1035 of this subpart.

(2) Each closed-vent system that is used to comply with paragraph (k)(2) of this section shall be inspected and monitored in accordance with the following requirements:

(i) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.

(ii) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (l)(3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in § 264.1035 of this subpart.

(3) The owner or operator shall repair all detected defects as follows:

(i) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in paragraph (l)(3)(iii) of this section.

(ii) A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.

(iii) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.

(iv) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 264.1035 of this subpart.

(m) Closed-vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(n) The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon:

(1) Regenerated or reactivated in a thermal treatment unit that meets one of the following:

(i) The owner or operator of the unit has been issued a final permit under 40 CFR part 270 which implements the requirements of subpart X of this part; or

(ii) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of subparts AA and CC of either this part or of 40 CFR part 265; or

(iii) The unit is equipped with and operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR part 61 or 40 CFR part 63.

(2) Incinerated in a hazardous waste incinerator for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270 which implements the requirements of subpart O of this part; or

(ii) Has designed and operates the incinerator in accordance with the interim status requirements of 40 CFR part 265, subpart O.

(3) Burned in a boiler or industrial furnace for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 266, subpart H; or

(ii) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR part 266, subpart H.

(o) Any components of a closed-vent system that are designated, as described in § 264.1035(c)(9) of this subpart, as unsafe to monitor are exempt from the requirements of paragraph (l)(1)(ii)(B) of this section if:

(1) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (l)(1)(ii)(B) of this section; and

(2) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in paragraph (l)(1)(ii)(B) of this section as frequently as practicable during safe-to-monitor times.

9. Section 264.1034 is amended by revising paragraph (b), introductory text, to read as follows:

§ 264.1034 Test methods and procedures.

* * * * *

(b) When a closed-vent system is tested for compliance with no detectable

emissions, as required in § 264.1033(l) of this subpart, the test shall comply with the following requirements:

* * * * *

10. Section 264.1035 is amended by adding paragraphs (c)(9) and (c)(10) and revising paragraph (d) to read as follows:

§ 264.1035 Recordkeeping requirements.

* * * * *

(c) * * *

(9) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to § 264.1033(o) of this subpart shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of § 264.1033(o) of this subpart, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.

(10) When each leak is detected as specified in § 264.1033(l) of this subpart, the following information shall be recorded:

(i) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.

(ii) The date the leak was detected and the date of first attempt to repair the leak.

(iii) The date of successful repair of the leak.

(iv) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

(v) ''Repair delayed'' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(A) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(d) Records of the monitoring, operating, and inspection information required by paragraphs (c)(3) through (c)(10) of this section shall be maintained by the owner or operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record.

* * * * *

Subpart BB—Air Emission Standards for Equipment Leaks

11. Section 264.1050 is amended by revising paragraph (b), adding paragraph (f), and by removing the reference ''262.34'' from the note at the end of the section to read as follows:

§ 264.1050 Applicability.

* * * * *

(b) Except as provided in § 264.1064(k), this subpart applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight that are managed in one of the following:

(1) A unit that is subject to the permitting requirements of 40 CFR part 270, or

(2) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a ''90-day'' tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of 40 CFR part 270, or

(3) A unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a ''90-day'' tank or container).

* * * * *

(f) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for a period of less than 300 hours per calendar year is excluded from the requirements of §§ 264.1052 through 264.1060 of this subpart if it is identified as required in § 264.1064(g)(6) of this subpart.

12. Section 264.1055 is revised to read as follows:

§ 264.1055 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall meet one of the following requirements:

(1) Return the purged process fluid directly to the process line;

(2) Collect and recycle the purged process fluid; or

(3) Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of § 264.1084 through § 264.1086 of this subpart or a control device that complies with the requirements of § 264.1060 of this subpart.

(c) *In-situ* sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

13. Section 264.1058 is amended by adding paragraph (e) to read as follows:

§ 264.1058 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors.

* * * * *

(e) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of paragraph (a) of this section and from the recordkeeping requirements of § 264.1064 of this subpart.

14. Section 264.1064 is amended by adding paragraph (g)(6) to read as follows:

§ 264.1064 Recordkeeping requirements.

* * * * *

(g) * * *

(6) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for a period of less than 300 hours per year.

* * * * *

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

15. Section 264.1080 is amended by adding paragraphs (b)(7) and (b)(8) to read as follows:

§ 264.1080 Applicability.

* * * * *

(b) * * *

(7) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of

§ 264.1084(i), except as provided in § 264.1082(c)(5).

(8) A tank that has a process vent as defined in 40 CFR 264.1031.

* * * * *

16. Section 264.1082 is revised to read as follows:

§ 264.1082 Standards: General.

(a) This section applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this subpart.

(b) The owner or operator shall control air pollutant emissions from each waste management unit in accordance with standards specified in § 264.1084 through § 264.1087 of this subpart, as applicable to the waste management unit, except as provided for in paragraph (c) of this section.

(c) A tank, surface impoundment, or container is exempt from standards specified in § 264.1084 through § 264.1087 of this subpart, as applicable, provided that the waste management unit is one of the following:

(1) A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in § 264.1083(a) of this subpart. The owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.

(2) A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:

(i) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in § 264.1083(b) of this subpart.

(ii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in § 264.1083(b) of this subpart.

(iii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in § 264.1083(b) of this subpart.

(iv) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

(A) The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the procedures specified in § 264.1083(b) of this subpart.

(B) The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in § 264.1083(b) of this subpart.

(v) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

(A) From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is managed continuously in waste management units which use air emission controls in accordance with the standards specified in § 264.1084 through § 264.1087 of this subpart, as applicable to the waste management unit.

(B) From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. The EPA considers a drain system that meets the requirements of 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems to be a closed system.

(C) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified in § 264.1083(a) of this subpart. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in § 264.1083(b) of this subpart.

(vi) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination shall be determined using the procedures specified in § 264.1083(b) and § 264.1083(a) of this subpart, respectively.

(vii) A hazardous waste incinerator for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270 which implements the requirements of subpart O of this part; or

(B) Has designed and operates the incinerator in accordance with the interim status requirements of 40 CFR part 265, subpart O.

(viii) A boiler or industrial furnace for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 266, subpart H, or

(B) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR part 266, subpart H.

(ix) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of paragraphs (c)(2)(i) through (c)(2)(vi) of this section, the owner or operator shall account for VO concentrations

determined to be below the limit of detection of the analytical method by using the following VO concentration:

(A) If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method.

(B) If any other analytical method is used, one-half the limit of detection established for the method.

(3) A tank used for biological treatment of hazardous waste in accordance with the requirements of paragraph (c)(2)(iv) of this section.

(4) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

(i) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in 40 CFR part 268—Land Disposal Restrictions under Table ''Treatment Standards for Hazardous Waste'' in 40 CFR 268.40; or

(ii) Has been treated by the treatment technology established by EPA for the waste in 40 CFR 268.42(a), or treated by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).

(5) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:

(i) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF—National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(ii) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996 and

(iii) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' annually.

(d) The Regional Administrator may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this section as follows:

(1) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of § 264.1083(a) of this subpart. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of § 264.1083(b) of this subpart.

(2) In performing a waste determination pursuant to paragraph (d)(1) of this section, the sample preparation and analysis shall be conducted as follows:

(i) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in paragraph (d)(2)(ii) of this section.

(ii) If the Regional Administrator determines that the method used by the owner or operator was not appropriate for the hazardous waste managed in the tank, surface impoundment, or container, then the Regional Administrator may choose an appropriate method.

(3) In a case when the owner or operator is requested to perform the waste determination, the Regional Administrator may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

(4) In a case when the results of the waste determination performed or requested by the Regional Administrator do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of paragraph (d)(1) of this section shall be used to establish compliance with the requirements of this subpart.

(5) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Regional Administrator may elect to establish compliance with this subpart by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:

(i) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of § 264.1083(a) of this subpart.

(ii) Results of the waste determination performed or requested by the Regional Administrator showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with this subpart except in a case as provided for in paragraph (d)(5)(iii) of this section.

(iii) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 500 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 500 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of § 264.1083(a) and § 264.1089 of this subpart shall be considered by the Regional Administrator together with the results of the waste determination performed or requested by the Regional Administrator in establishing compliance with this subpart.

17. Section 264.1083 is revised to read as follows:

§ 264.1083 Waste determination procedures.

(a) Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

(1) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of § 264.1082(c)(1) of this subpart from using air emission controls in accordance with standards specified in § 264.1084 through § 264.1087 of this subpart, as applicable to the waste management unit.

(2) The average VO concentration of a hazardous waste at the point of waste origination may be determined in accordance with the procedures

specified in 40 CFR 265.1084 (a)(2) through (a)(4).

(b) Waste determination procedures for treated hazardous waste.

(1) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of § 264.1082(c)(2) of this subpart from using air emission controls in accordance with standards specified in § 264.1084 through § 264.1087 of this subpart, as applicable to the waste management unit.

(2) The waste determination for a treated hazardous waste shall be performed in accordance with the procedures specified in 40 CFR 265.1084 (b)(2) through (b)(9), as applicable to the treated hazardous waste.

(c) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.

(1) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with standards specified in § 264.1084(c) of this subpart.

(2) The maximum organic vapor pressure of the hazardous waste may be determined in accordance with the procedures specified in 40 CFR 265.1084 (c)(2) through (c)(4).

(d) The procedure for determining no detectable organic emissions for the purpose of complying with this subpart shall be conducted in accordance with the procedures specified in 40 CFR 265.1084(d).

18. Section 264.1084 is revised to read as follows:

§ 264.1084 Standards: Tanks.

(a) The provisions of this section apply to the control of air pollutant emissions from tanks for which § 264.1082(b) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from each tank subject to this section in accordance with the following requirements as applicable:

(1) For a tank that manages hazardous waste that meets all of the conditions specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section, the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in paragraph (c) of this section or the Tank Level 2 controls specified in paragraph (d) of this section.

(i) The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

(A) For a tank design capacity equal to or greater than 151 m^3, the maximum organic vapor pressure limit for the tank is 5.2 kPa.

(B) For a tank design capacity equal to or greater than 75 m^3 but less than 151 m^3, the maximum organic vapor pressure limit for the tank is 27.6 kPa.

(C) For a tank design capacity less than 75 m^3, the maximum organic vapor pressure limit for the tank is 76.6 kPa.

(ii) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with paragraph (b)(1)(i) of this section.

(iii) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in 40 CFR 265.1081.

(2) For a tank that manages hazardous waste that does not meet all of the conditions specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section, the owner or operator shall control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of paragraph (d) of this section. Examples of tanks required to use Tank Level 2 controls include: A tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in paragraph (b)(1)(i) of this section.

(c) Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in paragraphs (c)(1) through (c)(4) of this section:

(1) The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in § 264.1083(c) of this subpart. Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in paragraph (b)(1)(i) of this section, as applicable to the tank.

(2) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(i) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

(ii) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(iii) Each opening in the fixed roof shall be either:

(A) Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

(B) Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and it shall be operating whenever hazardous waste is managed in the tank.

(iv) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(3) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(i) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such

activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(B) To remove accumulated sludge or other residues from the bottom of tank.

(ii) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

(iii) Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in paragraph (l) of this section.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 264.1089(b) of this subpart.

(d) Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in paragraph (e) of this section;

(2) A tank equipped with an external floating roof in accordance with the requirements specified in paragraph (f) of this section;

(3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (g) of this section;

(4) A pressure tank designed and operated in accordance with the requirements specified in paragraph (h) of this section; or

(5) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in paragraph (i) of this section.

(e) The owner or operator who controls air pollutant emissions from a tank using a fixed roof with an internal floating roof shall meet the requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(1) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(i) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

(A) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in 40 CFR 265.1081; or

(B) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(iii) The internal floating roof shall meet the following specifications:

(A) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(B) Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

(C) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.

(D) Each automatic bleeder vent and rim space vent shall be gasketed.

(E) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(F) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(ii) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(iii) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

(3) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

(i) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: The internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the

hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) The owner or operator shall inspect the internal floating roof components as follows except as provided in paragraph (e)(3)(iii) of this section:

(A) Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill, and

(B) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.

(iii) As an alternative to performing the inspections specified in paragraph (e)(3)(ii) of this section for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years.

(iv) Prior to each inspection required by paragraph (e)(3)(ii) or (e)(3)(iii) of this section, the owner or operator shall notify the Regional Administrator in advance of each inspection to provide the Regional Administrator with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Regional Administrator of the date and location of the inspection as follows:

(A) Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Regional Administrator at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (e)(3)(iv)(B) of this section.

(B) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Regional Administrator as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Regional Administrator at least 7 calendar days before refilling the tank.

(v) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(vi) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 264.1089(b) of this subpart.

(f) The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in paragraphs (f)(1) through (f)(3) of this section.

(1) The owner or operator shall design the external floating roof in accordance with the following requirements:

(i) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in 40 CFR 265.1081. The total area of the gaps between the tank wall and the primary seal shall not exceed 212 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.

(B) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(iii) The external floating roof shall meet the following specifications:

(A) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

(B) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

(C) Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.

(D) Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.

(E) Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(F) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

(G) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

(H) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

(I) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.

(iii) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

(iv) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(v) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(vi) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(vii) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.

(viii) Both the primary seal and the secondary seal shall completely cover

the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(3) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

(i) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(A) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years.

(B) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.

(C) If a tank ceases to hold hazardous waste for a period of 1 year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of paragraphs (f)(3)(i)(A) and (f)(3)(i)(B) of this section.

(D) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

(*1*) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

(*2*) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

(*3*) For a seal gap measured under paragraph (f)(3) of this section, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(*4*) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal perimeter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in paragraph (f)(1)(ii) of this section.

(E) In the event that the seal gap measurements do not conform to the specifications in paragraph (f)(1)(ii) of this section, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(F) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 264.1089(b) of this subpart.

(ii) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(A) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: Holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(B) The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (l) of this section.

(C) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(D) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 264.1089(b) of this subpart.

(iii) Prior to each inspection required by paragraph (f)(3)(i) or (f)(3)(ii) of this subpart, the owner or operator shall notify the Regional Administrator in advance of each inspection to provide the Regional Administrator with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Regional Administrator of the date and location of the inspection as follows:

(A) Prior to each inspection to measure external floating roof seal gaps as required under paragraph (f)(3)(i) of this section, written notification shall be prepared and sent by the owner or operator so that it is received by the Regional Administrator at least 30 calendar days before the date the measurements are scheduled to be performed.

(B) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Regional Administrator at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (f)(3)(iii)(C) of this section.

(C) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Regional Administrator as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Regional Administrator at least 7 calendar days before refilling the tank.

(g) The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in paragraphs (g)(1) through (g)(3) of this section.

(1) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(i) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.

(ii) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.

(iii) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 264.1087 of this subpart.

(2) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(i) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(B) To remove accumulated sludge or other residues from the bottom of a tank.

(ii) Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in § 264.1087 of this subpart.

(iii) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (l) of this section.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 264.1089(b) of this subpart.

(h) The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.

(1) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

(2) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in § 264.1083(d) of this subpart.

(3) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except in the event that a safety device, as defined in 40 CFR 265.1081, is required to open to avoid an unsafe condition.

(i) The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in paragraphs (i)(1) through (i)(4) of this section.

(1) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' initially when the enclosure is first installed and, thereafter, annually.

(2) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in § 264.1087 of this subpart.

(3) Safety devices, as defined in 40 CFR 265.1081, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of paragraphs (i)(1) and (i)(2) of this section.

(4) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in § 264.1087 of this subpart.

(j) The owner or operator shall transfer hazardous waste to a tank subject to this section in accordance with the following requirements:

(1) Transfer of hazardous waste, except as provided in paragraph (j)(2) of this section, to the tank from another tank subject to this section or from a surface impoundment subject to § 264.1085 of this subpart shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems.

(2) The requirements of paragraph (j)(1) of this section do not apply when transferring a hazardous waste to the tank under any of the following conditions:

(i) The hazardous waste meets the average VO concentration conditions specified in § 264.1082(c)(1) of this subpart at the point of waste origination.

(ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in § 264.1082(c)(2) of this subpart.

(k) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (c)(4), (e)(3), (f)(3), or (g)(3) of this section as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after

detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (k)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(l) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions:

(1) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an ''unsafe to inspect and monitor cover'' and comply with all of the following requirements:

(i) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(ii) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable section of this subpart, as frequently as practicable during those times when a worker can safely access the cover.

(2) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this section, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

19. Section 264.1085 is revised to read as follows:

§ 264.1085 Standards: Surface impoundments.

(a) The provisions of this section apply to the control of air pollutant emissions from surface impoundments for which § 264.1082(b) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

(1) A floating membrane cover in accordance with the provisions specified in paragraph (c) of this section; or

(2) A cover that is vented through a closed-vent system to a control device in accordance with the provisions specified in paragraph (d) of this sections.

(c) The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in paragraphs (c)(1) through (c)(3) of this section.

(1) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(i) The floating membrane cover shall be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.

(ii) The cover shall be fabricated from a synthetic membrane material that is either:

(A) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or

(B) A material or a composite of different materials determined to have both organic permeability properties that are equivalent to those of the material listed in paragraph (c)(1)(ii)(A) of this section and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(iii) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(iv) Except as provided for in paragraph (c)(1)(v) of this section, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(v) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(vi) The closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(2) Whenever a hazardous waste is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:

(i) Opening of closure devices or removal of the cover is allowed at the following times:

(A) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

(B) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(ii) Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:

(i) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or

operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (g) of this section.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (f) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 264.1089(c) of this subpart.

(d) The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in paragraphs (d)(1) through (d)(3) of this section.

(1) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(i) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

(ii) Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in § 264.1083(d) of this subpart.

(iii) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 264.1087 of this subpart.

(2) Whenever a hazardous waste is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

(i) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

(A) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.

(B) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(ii) Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(i) The surface impoundment cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in § 264.1087 of this subpart.

(iii) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (g) of this section.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (f) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 264.1089(c) of this subpart.

(e) The owner or operator shall transfer hazardous waste to a surface impoundment subject to this section in accordance with the following requirements:

(1) Transfer of hazardous waste, except as provided in paragraph (e)(2) of this section, to the surface impoundment from another surface impoundment subject to this section or from a tank subject to § 264.1084 of this subpart shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems.

(2) The requirements of paragraph (e)(1) of this section do not apply when transferring a hazardous waste to the surface impoundment under either of the following conditions:

(i) The hazardous waste meets the average VO concentration conditions specified in § 264.1082(c)(1) of this subpart at the point of waste origination.

(ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in § 264.1082(c)(2) of this subpart.

(f) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (c)(3) or (d)(3) of this section as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (f)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept

the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the surface impoundment stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(g) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an ''unsafe to inspect and monitor cover'' and comply with all of the following requirements:

(1) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(2) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable section of this subpart as frequently as practicable during those times when a worker can safely access the cover.

20. Section 264.1086 is revised to read as follows:

§ 264.1086 Standards: Containers.

(a) The provisions of this section apply to the control of air pollutant emissions from containers for which § 264.1082(b) of this subpart references the use of this section for such air emission control.

(b) General requirements.

(1) The owner or operator shall control air pollutant emissions from each container subject to this section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in paragraph (b)(2) of this section apply to the container.

(i) For a container having a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in paragraph (c) of this section.

(ii) For a container having a design capacity greater than 0.46 m^3 that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in paragraph (c) of this section.

(iii) For a container having a design capacity greater than 0.46 m^3 that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in paragraph (d) of this section.

(2) When a container having a design capacity greater than 0.1 m^3 is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in paragraph (e) of this section at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

(c) Container Level 1 standards.

(1) A container using Container Level 1 controls is one of the following:

(i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(ii) A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a ''portable tank'' or bulk cargo container equipped with a screw-type cap).

(iii) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

(2) A container used to meet the requirements of paragraph (c)(1)(ii) or (c)(1)(iii) of this section shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability, the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

(3) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

(i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(B) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(ii) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of this section, an empty container as defined in 40 CFR 261.7(b) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

(B) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in 40 CFR 261.7(b), the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading

operation leaves the immediate vicinity of the container, whichever condition occurs first.

(iii) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(iv) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(v) Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:

(i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)) within 24 hours after the container is accepted at the facility, the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c)(4)(iii) of this section.

(ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c)(4)(iii) of this section.

(iii) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

(5) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m^3 or greater, which do not meet applicable DOT regulations as specified in paragraph (f) of this section, are not managing hazardous waste in light material service.

(d) Container Level 2 standards.

(1) A container using Container Level 2 controls is one of the following:

(i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(ii) A container that operates with no detectable organic emissions as defined in 40 CFR 265.1081 and determined in accordance with the procedure specified in paragraph (g) of this section.

(iii) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR part 60, appendix A, Method 27 in accordance with the procedure specified in paragraph (h) of this section.

(2) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the EPA considers to meet the requirements of this paragraph include using any one of the following: a submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

(3) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(B) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(ii) Opening of a closure device or cover is allowed for the purpose of

removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of this section, an empty container as defined in 40 CFR 261.7(b) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

(B) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in 40 CFR 261.7(b), the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(iii) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste.

Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(iv) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(v) Opening of a safety device, as defined in 40 CFR 265.1081, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

(i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)) within 24 hours after the container arrives at the facility, the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d)(4)(iii) of this section.

(ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d)(4)(iii) of this section.

(iii) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

(e) Container Level 3 standards.

(1) A container using Container Level 3 controls is one of the following:

(i) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of paragraph (e)(2)(ii) of this section.

(ii) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of paragraphs (e)(2)(i) and (e)(2)(ii) of this section.

(2) The owner or operator shall meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

(i) The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' initially when the enclosure is first installed and, thereafter, annually.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 264.1087 of this subpart.

(3) Safety devices, as defined in 40 CFR 265.1081, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of paragraph (e)(1) of this section.

(4) Owners and operators using Container Level 3 controls in accordance with the provisions of this subpart shall inspect and monitor the closed-vent systems and control devices as specified in § 264.1087 of this subpart.

(5) Owners and operators that use Container Level 3 controls in accordance with the provisions of this subpart shall prepare and maintain the records specified in § 264.1089(d) of this subpart.

(f) For the purpose of compliance with paragraph (c)(1)(i) or (d)(1)(i) of this section, containers shall be used that meet the applicable U.S. Department of Transportation (DOT)

regulations on packaging hazardous materials for transportation as follows:

(1) The container meets the applicable requirements specified in 49 CFR part 178—Specifications for Packaging or 49 CFR part 179—Specifications for Tank Cars.

(2) Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packages; and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings.

(3) For the purpose of complying with this subpart, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section.

(4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

(g) The owner or operator shall use the procedure specified in § 264.1083(d) of this subpart for determining a container operates with no detectable organic emissions for the purpose of complying with paragraph (d)(1)(ii) of this section.

(1) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: The interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.

(h) Procedure for determining a container to be vapor-tight using Method 27 of 40 CFR part 60, appendix A for the purpose of complying with paragraph (d)(1)(iii) of this section.

(1) The test shall be performed in accordance with Method 27 of 40 CFR part 60, appendix A of this chapter.

(2) A pressure measurement device shall be used that has a precision of ± 2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

21. Section 264.1087 is amended by revising paragraph (b)(3), adding paragraph (b)(4), revising paragraphs (c)(2), (c)(3)(ii), and (c)(5)(i) (D)–(E), and adding paragraph (c)(7) to read as follows:

§ 264.1087 Standards: Closed-vent systems and control devices.

* * * * *

(b) * * *

(3) In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in paragraph (b)(3)(i) of this section or a seal or locking device as specified in paragraph (b)(3)(ii) of this section. For the purpose of complying with this paragraph, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.

(i) If a flow indicator is used to comply with paragraph (b)(3) of this section, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this paragraph, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.

(ii) If a seal or locking device is used to comply with paragraph (b)(3) of this section, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

(4) The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in § 264.1033(l).

(c) * * *

(2) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this section shall comply with the requirements specified in paragraphs (c)(2)(i) through (c)(2)(vi) of this section.

(i) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, as applicable, shall not exceed 240 hours per year.

(ii) The specifications and requirements in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section for control devices do not apply during periods of planned routine maintenance.

(iii) The specifications and requirements in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section for control devices do not apply during a control device system malfunction.

(iv) The owner or operator shall demonstrate compliance with the requirements of paragraph (c)(2)(i) of this section (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, as applicable, shall not exceed 240 hours per year) by recording the information specified in § 264.1089(e)(1)(v) of this subpart.

(v) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.

(vi) The owner or operator shall operate the closed-vent system such that gases, vapors, or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, and/or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

(3) * * *

(i) * * *

(ii) All carbon removed from the control device shall be managed in accordance with the requirements of 40 CFR 264.1033(n).

* * * * *

(5) * * *

(i) * * *

(D) A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under 40 CFR part 270 and has designed and operates the unit in accordance with the requirements of 40 CFR part 266, subpart H; or

(E) A boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with the interim status requirements of 40 CFR part 266, subpart H.

* * * * *

(7) The control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in 40 CFR 264.1033(f)(2) and 40 CFR 264.1033(l). The readings from each monitoring device required by 40 CFR 264.1033(f)(2) shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this section.

22. Section 264.1088 is revised to read as follows:

§ 264.1088 Inspection and monitoring requirements.

(a) The owner or operator shall inspect and monitor air emission control equipment used to comply with this subpart in accordance with the applicable requirements specified in § 264.1084 through § 264.1087 of this subpart.

(b) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by paragraph (a) of this section. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under 40 CFR 264.15.

23. Section 264.1089 is revised to read as follows:

§ 264.1089 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to requirements in this subpart shall record and maintain the information specified in paragraphs (b) through (i) of this section, as applicable to the facility. Except for air emission control equipment design documentation and information required by paragraph (i) of this section, records required by this section shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by paragraph (i) of this section shall be maintained in the operating record for as long as the tank or container is not using air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1084(d) of this subpart.

(b) The owner or operator of a tank using air emission controls in accordance with the requirements of § 264.1084 of this subpart shall prepare and maintain records for the tank that include the following information:

(1) For each tank using air emission controls in accordance with the requirements of § 264.1084 of this subpart, the owner or operator shall record:

(i) A tank identification number (or other unique identification description as selected by the owner or operator).

(ii) A record for each inspection required by § 264.1084 of this subpart that includes the following information:

(A) Date inspection was conducted.

(B) For each defect detected during the inspection, the following information: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 264.1084 of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(2) In addition to the information required by paragraph (b)(1) of this section, the owner or operator shall record the following information, as applicable to the tank:

(i) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in § 264.1084(c) of this subpart shall prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of § 264.1084(c) of this subpart. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

(ii) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in § 264.1084(e) of this subpart shall prepare and maintain documentation describing the floating roof design.

(iii) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in § 264.1084(f) of this subpart shall prepare and maintain the following records:

(A) Documentation describing the floating roof design and the dimensions of the tank.

(B) Records for each seal gap inspection required by § 264.1084(f)(3) of this subpart describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in § 264.1084(f)(1) of this subpart, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

(iv) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in § 264.1084(i) of this subpart shall prepare and maintain the following records:

(A) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B.

(B) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (e) of this section.

(c) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of § 264.1085 of this subpart shall prepare and maintain records for the surface impoundment that include the following information:

(1) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).

(2) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in § 264.1085(c) of this subpart.

(3) A record for each inspection required by § 264.1085 of this subpart that includes the following information:

(i) Date inspection was conducted.

(ii) For each defect detected during the inspection the following information: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 264.1085(f) of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(4) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the records specified in paragraph (e) of this section.

(d) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of § 264.1086 of this subpart shall prepare and maintain records that include the following information:

(1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B.

(2) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (e) of this section.

(e) The owner or operator using a closed-vent system and control device in accordance with the requirements of § 264.1087 of this subpart shall prepare and maintain records that include the following information:

(1) Documentation for the closed-vent system and control device that includes:

(i) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in paragraph (e)(1)(ii) of this section or by performance tests as specified in paragraph (e)(1)(iii) of this section when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.

(ii) If a design analysis is used, then design documentation as specified in 40 CFR 264.1035(b)(4). The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with 40 CFR 264.1035(b)(4)(iii) and certification by the owner or operator that the control equipment meets the applicable specifications.

(iii) If performance tests are used, then a performance test plan as specified in 40 CFR 264.1035(b)(3) and all test results.

(iv) Information as required by 40 CFR 264.1035(c)(1) and 40 CFR 264.1035(c)(2), as applicable.

(v) An owner or operator shall record, on a semiannual basis, the information specified in paragraphs (e)(1)(v)(A) and (e)(1)(v)(B) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of § 264.1087(c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous 6-month period. This description shall include the type of maintenance performed and the total number of hours during those 6 months that the control device did not meet the requirements of § 264.1087 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable, due to planned routine maintenance.

(vi) An owner or operator shall record the information specified in paragraphs (e)(1)(vi)(A) through (e)(1)(vi)(C) of this section for those unexpected control device system malfunctions that would require the control device not to meet the requirements of § 264.1087 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable.

(A) The occurrence and duration of each malfunction of the control device system.

(B) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

(C) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(vii) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with § 264.1087(c)(3)(ii) of this subpart.

(f) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of § 264.1082(c) of this subpart shall prepare and maintain the following records, as applicable:

(1) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in § 264.1082 (c)(1) or (c)(2) of this subpart, the owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of § 264.1083 of this subpart.

(2) For tanks, surface impoundments, or containers exempted under the provisions of § 264.1082(c)(2)(vii) or § 264.1082(c)(2)(viii) of this subpart, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

(g) An owner or operator designating a cover as ''unsafe to inspect and monitor'' pursuant to § 264.1084(l) or § 264.1085(g) of this subpart shall record in a log that is kept in the facility operating record the following information: The identification numbers for waste management units with covers that are designated as ''unsafe to inspect and monitor,'' the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.

(h) The owner or operator of a facility that is subject to this subpart and to the control device standards in 40 CFR part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable sections of this subpart by documentation either pursuant to this subpart, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this section.

(i) For each tank or container not using air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1080(d) of this subpart, the owner or operator shall record and maintain the following information:

(1) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in § 264.1080(d)(1).

(2) A description of how the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section are managed at the facility in tanks and containers. This description shall include:

(i) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: A facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: A facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

(3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section in the tanks and containers as described in paragraph (i)(2) of this section would create an undue safety hazard if the air emission controls, as required under §§ 264.1084 through 264.1087 of this subpart, are installed and operated on these waste management units. This explanation shall include the following information:

(i) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this subpart, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under this subpart, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

24. Section 264.1090 is amended by revising paragraphs (a) and (b) to read as follows:

§ 264.1090 Reporting requirements.

(a) Each owner or operator managing hazardous waste in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of § 264.1082(c) of this subpart shall report to the Regional Administrator each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the conditions specified in § 264.1082 (c)(1) or (c)(2) of this subpart, as applicable. Examples of such occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than 500 ppmw at the point of waste origination; or placing in the waste management unit a treated hazardous waste of which the organic content has been reduced by an organic destruction or removal process that fails to achieve the applicable conditions specified in § 264.1082 (c)(2)(i) through (c)(2)(vi) of this subpart. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

(b) Each owner or operator using air emission controls on a tank in accordance with the requirements § 264.1084(c) of this subpart shall report to the Regional Administrator each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions specified in § 264.1084(b) of this subpart. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent recurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.

* * * * *

§ 264.1091 [Removed and reserved]

25. Part 264 is amended by removing and reserving § 264.1091.

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

26. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart I—Use and Management of Containers

27. Section 265.178 is revised to read as follows:

§ 265.178 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of subparts AA, BB, and CC of this part.

Subpart J—Tank Systems

28. Section 265.202 is revised to read as follows:

§ 265.202 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the applicable requirements of subparts AA, BB, and CC of this part.

Subpart K—Surface Impoundments

29. Section 265.231 is revised to read as follows:

§ 265.231 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the applicable requirements of subparts BB and CC of this part.

Subpart AA—Air Emission Standards for Process Vents

30. Section 265.1030 is amended by revising paragraph (b); and by removing the reference ''262.34'' from the note at the end of the section to read as follows:

§ 265.1030 Applicability.

* * * * *

(b) Except for §§ 265.1034, paragraphs (d) and (e), this subpart applies to

process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw, if these operations are conducted in one of the following:

(1) A unit that is subject to the permitting requirements of 40 CFR part 270, or

(2) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of 40 CFR part 270, or

(3) A unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a 90-day tank or container).

* * * * *

31. Section 265.1033 is amended by revising paragraph (f)(2)(vi)(B); redesignating paragraphs (k) and (l) as paragraphs (l) and (m) and revising the newly designated paragraph (m); by revising paragraph (j); and by adding paragraphs (k) and (n) to read as follows:

§ 265.1033 Standards: Closed-vent systems and control devices.

* * * * *

(f) * * *

(2) * * *

(vi) * * *

(B) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ± 1 percent of the temperature being monitored in degrees Celsius (oC) or ± 0.5 oC, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side).

* * * * *

(j) A closed-vent system shall meet either of the following design requirements:

(1) A closed-vent system shall be designed to operate with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in § 265.1034(b) of this subpart, and by visual inspections; or

(2) A closed-vent system shall be designed to operate at a pressure below atmospheric pressure. The system shall be equipped with at least one pressure gauge or other pressure measurement device that can be read from a readily accessible location to verify that negative pressure is being maintained in the closed-vent system when the control device is operating.

(k) The owner or operator shall monitor and inspect each closed-vent system required to comply with this section to ensure proper operation and maintenance of the closed-vent system by implementing the following requirements:

(1) Each closed-vent system that is used to comply with paragraph (j)(1) of this section shall be inspected and monitored in accordance with the following requirements:

(i) An initial leak detection monitoring of the closed-vent system shall be conducted by the owner or operator on or before the date that the system becomes subject to this section. The owner or operator shall monitor the closed-vent system components and connections using the procedures specified in § 265.1034(b) of this subpart to demonstrate that the closed-vent system operates with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background.

(ii) After initial leak detection monitoring required in paragraph (k)(1)(i) of this section, the owner or operator shall inspect and monitor the closed-vent system as follows:

(A) Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The owner or operator shall monitor a component or connection using the procedures specified in § 265.1034(b) of this subpart to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).

(B) Closed-vent system components or connections other than those specified in paragraph (k)(1)(ii)(A) of this section shall be monitored annually and at other times as requested by the Regional Administrator, except as provided for in paragraph (n) of this section, using the procedures specified in § 265.1034(b) of this subpart to demonstrate that the components or connections operate with no detectable emissions.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect or leak in accordance with the requirements of paragraph (k)(3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in § 265.1035 of this subpart.

(2) Each closed-vent system that is used to comply with paragraph (j)(2) of this section shall be inspected and monitored in accordance with the following requirements:

(i) The closed-vent system shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in ductwork or piping or loose connections.

(ii) The owner or operator shall perform an initial inspection of the closed-vent system on or before the date that the system becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year.

(iii) In the event that a defect or leak is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k)(3) of this section.

(iv) The owner or operator shall maintain a record of the inspection and monitoring in accordance with the requirements specified in § 265.1035 of this subpart.

(3) The owner or operator shall repair all detected defects as follows:

(i) Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in paragraph (k)(3)(iii) of this section.

(ii) A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.

(iii) Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.

(iv) The owner or operator shall maintain a record of the defect repair in accordance with the requirements specified in § 265.1035 of this subpart.

(l) Closed-vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(m) The owner or operator using a carbon adsorption system to control air pollutant emissions shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the average volatile organic concentration of the carbon:

(1) Regenerated or reactivated in a thermal treatment unit that meets one of the following:

(i) The owner or operator of the unit has been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 264 subpart X; or

(ii) The unit is equipped with and operating air emission controls in accordance with the applicable requirements of subparts AA and CC of either this part or of 40 CFR part 264; or

(iii) The unit is equipped with and operating air emission controls in accordance with a national emission standard for hazardous air pollutants under 40 CFR part 61 or 40 CFR part 63.

(2) Incinerated in a hazardous waste incinerator for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 264, subpart O; or

(ii) Has designed and operates the incinerator in accordance with the interim status requirements of subpart O of this part.

(3) Burned in a boiler or industrial furnace for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 266, subpart H; or

(ii) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR part 266, subpart H.

(n) Any components of a closed-vent system that are designated, as described in § 265.1035(c)(9) of this subpart, as unsafe to monitor are exempt from the requirements of paragraph (k)(1)(ii)(B) of this section if:

(1) The owner or operator of the closed-vent system determines that the components of the closed-vent system are unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (k)(1)(ii)(B) of this section; and

(2) The owner or operator of the closed-vent system adheres to a written plan that requires monitoring the closed-vent system components using the procedure specified in paragraph (k)(1)(ii)(B) of this section as frequently as practicable during safe-to-monitor times.

32. Section 265.1034 is amended by revising paragraph (b) introductory text to read as follows:

§ 265.1034 Test methods and procedures.

* * * * *

(b) When a closed-vent system is tested for compliance with no detectable emissions, as required in § 265.1033(k) of this subpart, the test shall comply with the following requirements:

* * * * *

33. Section 265.1035 is amended by revising paragraph (c)(3), adding paragraphs (c)(9) and (c)(10) and revising paragraph (d) to read as follows:

§ 265.1035 Recordkeeping requirements.

* * * * *

(c) * * *

(3) Monitoring, operating and inspection information required by paragraphs (f) through (k) of § 265.1033 of this subpart.

* * * * *

(9) An owner or operator designating any components of a closed-vent system as unsafe to monitor pursuant to § 265.1033(n) of this subpart shall record in a log that is kept in the facility operating record the identification of closed-vent system components that are designated as unsafe to monitor in accordance with the requirements of § 265.1033(n) of this subpart, an explanation for each closed-vent system component stating why the closed-vent system component is unsafe to monitor, and the plan for monitoring each closed-vent system component.

(10) When each leak is detected as specified in § 265.1033(k) of this subpart, the following information shall be recorded:

(i) The instrument identification number, the closed-vent system component identification number, and the operator name, initials, or identification number.

(ii) The date the leak was detected and the date of first attempt to repair the leak.

(iii) The date of successful repair of the leak.

(iv) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A after it is successfully repaired or determined to be nonrepairable.

(v) ''Repair delayed'' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(A) The owner or operator may develop a written procedure that identifies the conditions that justify a delay of repair. In such cases, reasons for delay of repair may be documented by citing the relevant sections of the written procedure.

(B) If delay of repair was caused by depletion of stocked parts, there must be documentation that the spare parts were sufficiently stocked on-site before depletion and the reason for depletion.

(d) Records of the monitoring, operating, and inspection information required by paragraphs (c)(3) through (c)(10) of this section shall be maintained by the owner or operator for at least 3 years following the date of each occurrence, measurement, maintenance, corrective action, or record.

* * * * *

Subpart BB—Air Emission Standards for Equipment Leaks

34. Section 265.1050 is amended by revising paragraph (b), adding paragraph (e) and removing the reference ''262.34'' from the note at the end of the section to read as follows:

§ 265.1050 Applicability.

* * * * *

(b) Except as provided in § 265.1064(k), this subpart applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight that are managed in one of the following:

(1) A unit that is subject to the permitting requirements of 40 CFR part 270, or

(2) A unit (including a hazardous waste recycling unit) that is not exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a hazardous waste recycling unit that is not a 90-day tank or container) and that is located at a hazardous waste management facility otherwise subject to the permitting requirements of 40 CFR part 270, or

(3) A unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a 90-day tank or container).

* * * * *

(e) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for a period of less than 300 hours per calendar year is excluded from the requirements of § 265.1052 through § 265.1060 of this subpart if it is identified as required in § 265.1064(g)(6) of this subpart.

35. Section 265.1055 is revised to read as follows:

§ 265.1055 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system. This system shall collect the sample purge for return to the process or for routing to the appropriate treatment system. Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid; or

(3) Be designed and operated to capture and transport all the purged process fluid to a waste management unit that complies with the applicable requirements of § 265.1085 through § 265.1087 of this subpart or a control device that complies with the requirements of § 265.1060 of this subpart.

(c) *In-situ* sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

36. Section 265.1058 is amended by adding paragraph (e) to read as follows:

§ 265.1058 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connectors.

* * * * *

(e) Any connector that is inaccessible or is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined) is exempt from the monitoring requirements of paragraph (a) of this section and from the recordkeeping requirements of § 265.1064 of this subpart.

37. Section 265.1064 is amended by adding paragraph (g)(6) to read as follows:

§ 265.1064 Recordkeeping requirements.

* * * * *

(g) * * *

(6) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for a period of less than 300 hours per year.

* * * * *

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

38. Section 265.1080 is amended by adding paragraphs (b)(7) and (b)(8) to read as follows:

§ 265.1080 Applicability.

* * * * *

(b) * * *

(7) A hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. For the purpose of complying with this paragraph, a tank for which the air emission control includes an enclosure, as opposed to a cover, must be in compliance with the enclosure and control device requirements of § 265.1085(i), except as provided in § 265.1083(c)(5).

(8) A tank that has a process vent as defined in 40 CFR 264.1031.

* * * * *

39. Section 265.1081 is amended by revising the definitions of cover, external floating roof, fixed roof, floating roof, internal floating roof, maximum organic vapor pressure, point of waste treatment, vapor-mounted seal and volatile organic concentration and by adding definitions in alphabetical order to read as follows:

§ 265.1081 Definitions.

* * * * *

Closure device means a cap, hatch, lid, plug, seal, valve, or other type of fitting that blocks an opening in a cover such that when the device is secured in the closed position it prevents or reduces air pollutant emissions to the atmosphere. Closure devices include devices that are detachable from the cover (e.g., a sampling port cap), manually operated (e.g., a hinged access lid or hatch), or automatically operated (e.g., a spring-loaded pressure relief valve).

* * * * *

Continuous seal means a seal that forms a continuous closure that completely covers the space between the edge of the floating roof and the wall of a tank. A continuous seal may be a vapor-mounted seal, liquid-mounted seal, or metallic shoe seal. A continuous seal may be constructed of fastened segments so as to form a continuous seal.

* * * * *

Cover means a device that provides a continuous barrier over the hazardous waste managed in a unit to prevent or reduce air pollutant emissions to the atmosphere. A cover may have openings (such as access hatches, sampling ports, gauge wells) that are necessary for operation, inspection, maintenance, and repair of the unit on which the cover is used. A cover may be a separate piece of equipment which can be detached and removed from the unit or a cover may be formed by structural features permanently integrated into the design of the unit.

* * * * *

Enclosure means a structure that surrounds a tank or container, captures organic vapors emitted from the tank or container, and vents the captured vapors through a closed-vent system to a control device.

* * * * *

External floating roof means a pontoon-type or double-deck type cover that rests on the surface of the material managed in a tank with no fixed roof.

* * * * *

Fixed roof means a cover that is mounted on a unit in a stationary position and does not move with fluctuations in the level of the material managed in the unit.

* * * * *

Floating roof means a cover consisting of a double deck, pontoon single deck, or internal floating cover which rests upon and is supported by the material being contained, and is equipped with a continuous seal.

* * * * *

Hard-piping means pipe or tubing that is manufactured and properly installed in accordance with relevant standards and good engineering practices.

* * * * *

In light material service means the container is used to manage a material for which both of the following conditions apply: the vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals (kPa) at 20 °C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight.

* * * * *

Internal floating roof means a cover that rests or floats on the material surface (but not necessarily in complete contact with it) inside a tank that has a fixed roof.

* * * * *

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

* * * * *

Maximum organic vapor pressure means the sum of the individual organic constituent partial pressures exerted by the material contained in a tank, at the

maximum vapor pressure-causing conditions (i.e., temperature, agitation, pH effects of combining wastes, etc.) reasonably expected to occur in the tank. For the purpose of this subpart, maximum organic vapor pressure is determined using the procedures specified in § 265.1084(c) of this subpart.

* * * * *

Metallic shoe seal means a continuous seal that is constructed of metal sheets which are held vertically against the wall of the tank by springs, weighted levers, or other mechanisms and is connected to the floating roof by braces or other means. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

* * * * *

No detectable organic emissions means no escape of organics to the atmosphere as determined using the procedure specified in § 265.1084(d) of this subpart.

* * * * *

Point of waste treatment means the point where a hazardous waste to be treated in accordance with § 265.1083(c)(2) of this subpart exits the treatment process. Any waste determination shall be made before the waste is conveyed, handled, or otherwise managed in a manner that allows the waste to volatilize to the atmosphere.

* * * * *

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. For the purpose of this subpart, a safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in this vapor headspace in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials.

* * * * *

Single-seal system means a floating roof having one continuous seal. This seal may be vapor-mounted, liquid-mounted, or a metallic shoe seal.

* * * * *

Vapor-mounted seal means a continuous seal that is mounted such that there is a vapor space between the hazardous waste in the unit and the bottom of the seal.

* * * * *

Volatile organic concentration or *VO concentration* means the fraction by weight of the volatile organic compounds contained in a hazardous waste expressed in terms of parts per million (ppmw) as determined by direct measurement or by knowledge of the waste in accordance with the requirements of § 265.1084 of this subpart. For the purpose of determining the VO concentration of a hazardous waste, organic compounds with a Henry's law constant value of at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in the liquid-phase (0.1 Y/X) (which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3) at 25 degrees Celsius must be included. Appendix VI of this subpart presents a list of compounds known to have a Henry's law constant value less than the cutoff level.

* * * * *

40. Section 265.1083 is revised to read as follows:

§ 265.1083 Standards: General.

(a) This section applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this subpart.

(b) The owner or operator shall control air pollutant emissions from each waste management unit in accordance with standards specified in § 265.1085 through § 265.1088 of this subpart, as applicable to the waste management unit, except as provided for in paragraph (c) of this section.

(c) A tank, surface impoundment, or container is exempt from standards specified in § 265.1085 through § 265.1088 of this subpart, as applicable, provided that the waste management unit is one of the following:

(1) A tank, surface impoundment, or container for which all hazardous waste entering the unit has an average VO concentration at the point of waste origination of less than 500 parts per million by weight (ppmw). The average VO concentration shall be determined using the procedures specified in § 265.1084(a) of this subpart. The owner or operator shall review and update, as necessary, this determination at least once every 12 months following the date of the initial determination for the hazardous waste streams entering the unit.

(2) A tank, surface impoundment, or container for which the organic content of all the hazardous waste entering the waste management unit has been reduced by an organic destruction or removal process that achieves any one of the following conditions:

(i) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C^t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in § 265.1084(b) of this subpart.

(ii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 100 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in § 265.1084(b) of this subpart.

(iii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is equal to or greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in § 265.1084(b) of this subpart.

(iv) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:

(A) The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R_{bio}) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined using the

procedures specified in § 265.1084(b) of this subpart.

(B) The total actual organic mass biodegradation rate (MR_{bio}) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in § 265.1084(b) of this subpart.

(v) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions:

(A) From the point of waste origination through the point where the hazardous waste enters the treatment process, the hazardous waste is managed continuously in waste management units which use air emission controls in accordance with the standards specified in § 265.1085 through § 265.1088 of this subpart, as applicable to the waste management unit.

(B) From the point of waste origination through the point where the hazardous waste enters the treatment process, any transfer of the hazardous waste is accomplished through continuous hard-piping or other closed system transfer that does not allow exposure of the waste to the atmosphere. The EPA considers a drain system that meets the requirements of 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems to be a closed system.

(C) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual waste streams entering the process or 500 ppmw, whichever value is lower. The average VO concentration of each individual waste stream at the point of waste origination shall be determined using the procedures specified in § 265.1084(a) of this subpart. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in § 265.1084(b) of this subpart.

(vi) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent and the owner or operator certifies that the average VO concentration at the point of waste origination for each of the individual waste streams entering the process is less than 10,000 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste origination shall be determined using the procedures specified in § 265.1084(b) and § 265.1084(a) of this subpart, respectively.

(vii) A hazardous waste incinerator for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 264, subpart O; or

(B) Has designed and operates the incinerator in accordance with the interim status requirements of subpart O of this part.

(viii) A boiler or industrial furnace for which the owner or operator has either:

(A) Been issued a final permit under 40 CFR part 270 which implements the requirements of 40 CFR part 266, subpart H, or

(B) Has designed and operates the boiler or industrial furnace in accordance with the interim status requirements of 40 CFR part 266, subpart H.

(ix) For the purpose of determining the performance of an organic destruction or removal process in accordance with the conditions in each of paragraphs (c)(2)(i) through (c)(2)(vi) of this section, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

(A) If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method.

(B) If any other analytical method is used, one-half the limit of detection established for the method.

(3) A tank used for biological treatment of hazardous waste in accordance with the requirements of paragraph (c)(2)(iv) of this section.

(4) A tank, surface impoundment, or container for which all hazardous waste placed in the unit either:

(i) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in 40 CFR part 268—Land Disposal Restrictions under Table ''Treatment Standards for Hazardous Waste'' in 40 CFR 268.40; or

(ii) Has been treated by the treatment technology established by EPA for the waste in 40 CFR 268.42(a), or treated by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).

(5) A tank used for bulk feed of hazardous waste to a waste incinerator and all of the following conditions are met:

(i) The tank is located inside an enclosure vented to a control device that is designed and operated in accordance with all applicable requirements specified under 40 CFR part 61, subpart FF—National Emission Standards for Benzene Waste Operations for a facility at which the total annual benzene quantity from the facility waste is equal to or greater than 10 megagrams per year;

(ii) The enclosure and control device serving the tank were installed and began operation prior to November 25, 1996; and

(iii) The enclosure is designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical or electrical equipment; or to direct air flow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' annually.

(d) The Regional Administrator may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this section as follows:

(1) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of § 265.1084(a) of this subpart. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of § 265.1084(b) of this subpart.

(2) In performing a waste determination pursuant to paragraph (d)(1) of this section, the sample preparation and analysis shall be conducted as follows:

(i) In accordance with the method used by the owner or operator to perform the waste analysis, except in the case specified in paragraph (d)(2)(ii) of this section.

(ii) If the Regional Administrator determines that the method used by the owner or operator was not appropriate

for the hazardous waste managed in the tank, surface impoundment, or container, then the Regional Administrator may choose an appropriate method.

(3) In a case when the owner or operator is requested to perform the waste determination, the Regional Administrator may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.

(4) In a case when the results of the waste determination performed or requested by the Regional Administrator do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of paragraph (d)(1) of this section shall be used to establish compliance with the requirements of this subpart.

(5) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Regional Administrator may elect to establish compliance with this subpart by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:

(i) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of § 265.1084(a) of this subpart.

(ii) Results of the waste determination performed or requested by the Regional Administrator showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 500 ppmw shall constitute noncompliance with this subpart except in a case as provided for in paragraph (d)(5)(iii) of this section.

(iii) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 500 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 500 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of § 265.1084(a) and § 265.1090 of this subpart shall be considered by the Regional Administrator together with the results of the waste determination performed or requested by the Regional Administrator in establishing compliance with this subpart.

41. Section 265.1084 is revised to read as follows:

§ 265.1084 Waste determination procedures.

(a) Waste determination procedure to determine average volatile organic (VO) concentration of a hazardous waste at the point of waste origination.

(1) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of § 265.1083(c)(1) of this subpart from using air emission controls in accordance with standards specified in § 265.1085 through § 265.1088 of this subpart, as applicable to the waste management unit.

(2) The average VO concentration of a hazardous waste at the point of waste origination shall be determined using either direct measurement as specified in paragraph (a)(3) of this section or by knowledge as specified in paragraph (a)(4) of this section.

(3) Direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination.

(i) Identification. The owner or operator shall identify and record the point of waste origination for the hazardous waste.

(ii) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste origination in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(A) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

(B) A sufficient number of samples, but no less than four samples, shall be collected for the hazardous waste stream to represent the complete range of compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

(C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter), or in Method 25D in 40 CFR part 60, appendix A.

(iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (a)(3)(iii)(A) through (a)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (a)(3)(iii)(B) through (a)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses EPA Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260(B) or 8270(C) in ''Test Methods for Evaluating Solid Waste, Physical/

Chemical Methods'', EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's published list, the procedures in paragraph (a)(3)(iii)(H) of this section must be followed. At the owner's or operator's discretion, the concentration of each individual chemical constituent measured in the waste by a method other than Method 25D may be corrected to the concentration had it been measured using Method 25D by multiplying the measured concentration by the constituent-specific adjustment factor (f_{m25D}) as specified in paragraph (a)(4)(iii) of this section. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711. (A) Method 25D in 40 CFR part 60, appendix A.

(B) Method 624 in 40 CFR part 136, appendix A.

(C) Method 625 in 40 CFR part 136, appendix A. Perform corrections to the compounds for which the analysis is being conducted based on the ''accuracy as recovery'' using the factors in Table 7 of the method.

(D) Method 1624 in 40 CFR part 136, appendix A.

(E) Method 1625 in 40 CFR part 136, appendix A.

(F) Method 8260(B) in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8260(B). The quality assurance program shall include the following elements:

(*1*) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.

(*2*) Measurement of the overall accuracy and precision of the specific procedures.

(G) Method 8270(C) in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8270(C). The quality assurance program shall include the following elements:

(*1*) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, and preparation steps.

(*2*) Measurement of the overall accuracy and precision of the specific procedures.

(H) Any other EPA standard method that has been validated in accordance with ''Alternative Validation Procedure for EPA Waste and Wastewater Methods'', 40 CFR part 63, appendix D. As an alternative, other EPA standard methods may be validated by the procedure specified in paragraph (a)(3)(iii)(I) of this section.

(I) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR part 63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(iv) Calculations. The average VO concentration ($\overline{C}$) on a mass-weighted basis shall be calculated by using the results for all samples analyzed in accordance with paragraph (a)(3)(iii) of this section and the following equation:

$$\overline{C} = \frac{1}{Q_T} \times \sum_{i=1}^{n} \left(Q_i \times C_i \right)$$

Where:

$\overline{C}$ = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, ppmw.

i = Individual sample ''i'' of the hazardous waste.

n = Total number of samples of the hazardous waste collected (at least 4) for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of sample ''i'' as determined in accordance with the requirements of § 265.1084(a)(3)(iii) of this subpart, ppmw.

(4) Use of owner or operator knowledge to determine average VO concentration of a hazardous waste at the point of waste origination.

(i) Documentation shall be prepared that presents the information used as the basis for the owner's or operator's knowledge of the hazardous waste stream's average VO concentration. Examples of information that may be used as the basis for knowledge include: Material balances for the source or process generating the hazardous waste stream; constituent-specific chemical test data for the hazardous waste stream from previous testing that are still applicable to the current waste stream; previous test data for other locations managing the same type of waste stream; or other knowledge based on information included in manifests, shipping papers, or waste certification notices.

(ii) If test data are used as the basis for knowledge, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use organic concentration test data for the hazardous waste stream that are validated in accordance with Method 301 in 40 CFR part 63, appendix A as the basis for knowledge of the waste.

(iii) An owner or operator using chemical constituent-specific concentration test data as the basis for knowledge of the hazardous waste may adjust the test data to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, appendix A. To adjust these data, the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}).

(iv) In the event that the Regional Administrator and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement as specified in paragraph (a)(3) of this section shall be used to establish compliance with the applicable requirements of this subpart. The Regional Administrator may perform or request that the owner or operator perform this determination using direct measurement.

(b) Waste determination procedures for treated hazardous waste.

(1) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of § 265.1083(c)(2) of this

subpart from using air emission controls in accordance with standards specified in § 265.1085 through § 265.1088 of this subpart, as applicable to the waste management unit.

(2) The owner or operator shall designate and record the specific provision in § 265.1083(c)(2) of this subpart under which the waste determination is being performed. The waste determination for the treated hazardous waste shall be performed using the applicable procedures specified in paragraphs (b)(3) through (b)(9) of this section.

(3) Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment.

(i) Identification. The owner or operator shall identify and record the point of waste treatment for the hazardous waste.

(ii) Sampling. Samples of the hazardous waste stream shall be collected at the point of waste treatment in a manner such that volatilization of organics contained in the waste and in the subsequent sample is minimized and an adequately representative sample is collected and maintained for analysis by the selected method.

(A) The averaging period to be used for determining the average VO concentration for the hazardous waste stream on a mass-weighted average basis shall be designated and recorded. The averaging period can represent any time interval that the owner or operator determines is appropriate for the hazardous waste stream but shall not exceed 1 year.

(B) A sufficient number of samples, but no less than four samples, shall be collected for the hazardous waste stream to represent the complete range of compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the process treating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

(C) All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste stream are collected such that a minimum loss of organics occurs throughout the sample collection and handling process, and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW–846 (incorporated by reference—refer to § 260.11(a) of this chapter), or in Method 25D in 40 CFR part 60, appendix A.

(iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (b)(3)(iii)(A) through (b)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (b)(3)(iii)(B) through (b)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses EPA Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260(B) or 8270(C) in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846 (incorporated by reference—refer to § 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's published list, the procedures in paragraph (b)(3)(iii)(H) of this section must be followed. At the owner's or operator's discretion, the concentration of each individual chemical constituent measured in the waste by a method other than Method 25D may be corrected to the concentration had it been measured using Method 25D by multiplying the measured concentration by the constituent-specific adjustment factor (f_{m25D}) as specified in paragraph (a)(4)(iii) of this section. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

(A) Method 25D in 40 CFR part 60, appendix A.

(B) Method 624 in 40 CFR part 136, appendix A.

(C) Method 625 in 40 CFR part 136, appendix A. Perform corrections to the compounds for which the analysis is being conducted based on the ''accuracy as recovery'' using the factors in Table 7 of the method.

(D) Method 1624 in 40 CFR part 136, appendix A.

(E) Method 1625 in 40 CFR part 136, appendix A.

(F) Method 8260(B) in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8260(B). The quality assurance program shall include the following elements:

(*1*) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.

(*2*) Measurement of the overall accuracy and precision of the specific procedures.

(G) Method 8270(C) in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8270(C). The quality assurance program shall include the following elements:

(*1*) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.

(*2*) Measurement of the overall accuracy and precision of the specific procedures.

(H) Any other EPA standard method that has been validated in accordance with ''Alternative Validation Procedure for EPA Waste and Wastewater Methods'', 40 CFR part 63, appendix D. As an alternative, other EPA standard methods may be validated by the procedure specified in paragraph (b)(3)(iii)(I) of this section.

(I) Any other analysis method that has been validated in accordance with the procedures specified in Section 5.1 or Section 5.3, and the corresponding

calculations in Section 6.1 or Section 6.3, of Method 301 in 40 CFR part 63, appendix A. The data are acceptable if they meet the criteria specified in Section 6.1.5 or Section 6.3.3 of Method 301. If correction is required under section 6.3.3 of Method 301, the data are acceptable if the correction factor is within the range 0.7 to 1.30. Other sections of Method 301 are not required.

(iv) Calculations. The average VO concentration ($\overline{C}$) on a mass-weighted basis shall be calculated by using the results for all samples analyzed in accordance with paragraph (b)(3)(iii) of this section and the following equation:

$$\overline{C} = \frac{1}{Q_T} \times \sum_{i=1}^{n} \left(Q_i \times C_i \right)$$

Where:

$\overline{C}$= Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, ppmw.

i = Individual sample ''i'' of the hazardous waste.

n = Total number of samples of the hazardous waste collected (at least 4) for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of sample ''i'' as determined in accordance with the requirements of § 265.1084(b)(3)(iii) of this subpart, ppmw.

(4) Procedure to determine the exit concentration limit (C_t) for a treated hazardous waste.

(i) The point of waste origination for each hazardous waste treated by the process at the same time shall be identified.

(ii) If a single hazardous waste stream is identified in paragraph (b)(4)(i) of this section, then the exit concentration limit (C_t) shall be 500 ppmw.

(iii) If more than one hazardous waste stream is identified in paragraph (b)(4)(i) of this section, then the average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of paragraph (a) of this section. The exit concentration limit (C_t) shall be calculated by using the results determined for each individual hazardous waste stream and the following equation:

$$C_t = \frac{\sum_{x=1}^{m} \left(Q_x \times \overline{C_x} \right) + \sum_{y=1}^{n} \left(Q_y \times 500 \text{ ppmw} \right)}{\sum_{x=1}^{m} Q_x + \sum_{y=1}^{n} Q_y}$$

Where:

C_t = Exit concentration limit for treated hazardous waste, ppmw.

x = Individual hazardous waste stream ''x'' that has an average VO concentration less than 500 ppmw at the point of waste origination as determined in accordance with the requirements of § 265.1084(a) of this subpart.

y = Individual hazardous waste stream ''y'' that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of § 265.1084(a) of this subpart.

m = Total number of ''x'' hazardous waste streams treated by process.

n = Total number of ''y'' hazardous waste streams treated by process.

Q_x = Annual mass quantity of hazardous waste stream ''x,'' kg/yr.

Q_y = Annual mass quantity of hazardous waste stream ''y,'' kg/yr.

$\overline{C}_x$ = Average VO concentration of hazardous waste stream ''x'' at the point of waste origination as determined in accordance with the requirements of § 265.1084(a) of this subpart, ppmw.

(5) Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.

(i) The organic reduction efficiency (R) for a treatment process shall be determined based on results for a minimum of three consecutive runs.

(ii) All hazardous waste streams entering the treatment process and all hazardous waste streams exiting the treatment process shall be identified. The owner or operator shall prepare a sampling plan for measuring these streams that accurately reflects the retention time of the hazardous waste in the process.

(iii) For each run, information shall be determined for each hazardous waste stream identified in paragraph (b)(5)(ii) of this section using the following procedures:

(A) The mass quantity of each hazardous waste stream entering the process (Q_b) and the mass quantity of each hazardous waste stream exiting the process (Q_a) shall be determined.

(B) The average VO concentration at the point of waste origination of each hazardous waste stream entering the process ($\overline{C}_b$) during the run shall be determined in accordance with the requirements of paragraph (a)(3) of this section. The average VO concentration at the point of waste treatment of each waste stream exiting the process ($\overline{C}_a$) during the run shall be determined in accordance with the requirements of paragraph (b)(3) of this section.

(iv) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be calculated by using the results determined in accordance with paragraph (b)(5)(iii) of this section and the following equations:

$$E_b = \frac{1}{10^6} \sum_{j=1}^{m} \left(Q_{bj} \times \overline{C_{bj}} \right)$$

$$E_a = \frac{1}{10^6} \sum_{j=1}^{m} \left(Q_{aj} \times \overline{C_{aj}} \right)$$

Where:

E_a = Waste volatile organic mass flow exiting process, kg/hr.

E_b = Waste volatile organic mass flow entering process, kg/hr.

m = Total number of runs (at least 3)

j = Individual run ''j''

Q_b = Mass quantity of hazardous waste entering process during run ''j,'' kg/hr.

Q_a = Average mass quantity of hazardous waste exiting process during run ''j,'' kg/hr.

$\overline{C}_a$ = Average VO concentration of hazardous waste exiting process during run ''j'' as determined in accordance with the requirements of § 265.1084(b)(3) of this subpart, ppmw.

$\overline{C}_b$ = Average VO concentration of hazardous waste entering process during run ''j'' as determined in accordance with the requirements of § 265.1084(a)(3) of this subpart, ppmw.

(v) The organic reduction efficiency of the process shall be calculated by using the results determined in accordance with paragraph (b)(5)(iv) of this section and the following equation:

$$R = \frac{E_b - E_a}{E_b} \times 100\%$$

Where:

R = Organic reduction efficiency, percent.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

(6) Procedure to determine the organic biodegradation efficiency (R_{bio}) for a treated hazardous waste.

(i) The fraction of organics biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this chapter.

(ii) The R_{bio} shall be calculated by using the following equation:

$$R_{bio} = F_{bio} \times 100\%$$

Where:

R_{bio} = Organic biodegradation efficiency, percent.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph (b)(6)(i) of this section.

(7) Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.

(i) All of the hazardous waste streams entering the treatment process shall be identified.

(ii) The average VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of paragraph (a) of this section.

(iii) For each individual hazardous waste stream that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination, the average volumetric flow rate and the density of the hazardous waste stream at the point of waste origination shall be determined.

(iv) The RMR shall be calculated by using the average VO concentration, average volumetric flow rate, and density determined for each individual hazardous waste stream, and the following equation:

$$RMR = \sum_{y=1}^{n} \left[V_y \times k_y \times \frac{\left(\overline{C_y} - 500 \text{ ppmw}\right)}{10^6} \right]$$

Where:

RMR = Required organic mass removal rate, kg/hr.

y = Individual hazardous waste stream ''y'' that has an average VO concentration equal to or greater than 500 ppmw at the point of waste origination as determined in accordance with the requirements of § 265.1084(a) of this subpart.

n = Total number of ''y'' hazardous waste streams treated by process.

V_y = Average volumetric flow rate of hazardous waste stream ''y'' at the point of waste origination, m^3/hr.

k_y = Density of hazardous waste stream ''y,'' kg/m^3

$\overline{C_y}$ = Average VO concentration of hazardous waste stream ''y'' at the point of waste origination as determined in accordance with the requirements of § 265.1084(a) of this subpart, ppmw.

(8) Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.

(i) The MR shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(ii) The waste volatile organic mass flow entering the process (E_b) and the waste volatile organic mass flow exiting the process (E_a) shall be determined in accordance with the requirements of paragraph (b)(5)(iv) of this section.

(iii) The MR shall be calculated by using the mass flow rate determined in accordance with the requirements of paragraph (b)(8)(ii) of this section and the following equation:

Where:

$MR = E_b - E_a$

MR = Actual organic mass removal rate, kg/hr.

E_b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

E_a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

(9) Procedure to determine the actual organic mass biodegradation rate (MR_{bio}) for a treated hazardous waste.

(i) The MR_{bio} shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.

(ii) The waste organic mass flow entering the process (E_b) shall be determined in accordance with the requirements of paragraph (b)(5)(iv) of this section.

(iii) The fraction of organic biodegraded (F_{bio}) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this chapter.

(iv) The MR_{bio} shall be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of paragraphs (b)(9)(ii) and (b)(9)(iii), respectively, of this section and the following equation:

Where:

$MR_{bio} = E_b \times F_{bio}$

MR_{bio} = Actual organic mass biodegradation rate, kg/hr.

E_b = Waste organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

F_{bio} = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph (b)(9)(iii) of this section.

(c) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.

(1) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using Tank Level 1 controls in accordance with the standards specified in § 265.1085(c) of this subpart.

(2) An owner or operator shall use either direct measurement as specified in paragraph (c)(3) of this section or knowledge of the waste as specified by paragraph (c)(4) of this section to determine the maximum organic vapor pressure which is representative of the hazardous waste composition stored or treated in the tank.

(3) Direct measurement to determine the maximum organic vapor pressure of a hazardous waste.

(i) Sampling. A sufficient number of samples shall be collected to be representative of the waste contained in the tank. All samples shall be collected and handled in accordance with written procedures prepared by the owner or operator and documented in a site sampling plan. This plan shall describe the procedure by which representative samples of the hazardous waste are collected such that a minimum loss of organics occurs throughout the sample collection and handling process and by which sample integrity is maintained. A copy of the written sampling plan shall be maintained on-site in the facility operating records. An example of an acceptable sampling plan includes a plan incorporating sample collection and handling procedures in accordance with the requirements specified in ''Test

Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter), or in Method 25D in 40 CFR part 60, appendix A.

(ii) Analysis. Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure of the hazardous waste:

(A) Method 25E in 40 CFR part 60 appendix A;

(B) Methods described in American Petroleum Institute Publication 2517, Third Edition, February 1989, ''Evaporative Loss from External Floating-Roof Tanks,'' (incorporated by reference—refer to § 260.11 of this chapter);

(C) Methods obtained from standard reference texts;

(D) ASTM Method 2879–92 (incorporated by reference—refer to § 260.11 of this chapter); and

(E) Any other method approved by the Regional Administrator.

(4) Use of knowledge to determine the maximum organic vapor pressure of the hazardous waste. Documentation shall be prepared and recorded that presents the information used as the basis for the owner's or operator's knowledge that the maximum organic vapor pressure of the hazardous waste is less than the maximum vapor pressure limit listed in § 265.1085(b)(1)(i) of this subpart for the applicable tank design capacity category. An example of information that may be used is documentation that the hazardous waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate tank design capacity category.

(d) Procedure for determining no detectable organic emissions for the purpose of complying with this subpart:

(1) The test shall be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the cover and associated closure devices shall be checked. Potential leak interfaces that are associated with covers and closure devices include, but are not limited to: The interface of the cover and its foundation mounting; the periphery of any opening on the cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure relief valve.

(2) The test shall be performed when the unit contains a hazardous waste having an organic concentration representative of the range of concentrations for the hazardous waste expected to be managed in the unit. During the test, the cover and closure devices shall be secured in the closed position.

(3) The detection instrument shall meet the performance criteria of Method 21 of 40 CFR part 60, appendix A, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the organic constituents in the hazardous waste placed in the waste management unit, not for each individual organic constituent.

(4) The detection instrument shall be calibrated before use on each day of its use by the procedures specified in Method 21 of 40 CFR part 60, appendix A.

(5) Calibration gases shall be as follows:

(i) Zero air (less than 10 ppmv hydrocarbon in air), and

(ii) A mixture of methane in air at a concentration of approximately, but less than 10,000 ppmv.

(6) The background level shall be determined according to the procedures in Method 21 of 40 CFR part 60, appendix A.

(7) Each potential leak interface shall be checked by traversing the instrument probe around the potential leak interface as close to the interface as possible, as described in Method 21 of 40 CFR part 60, appendix A. In the case when the configuration of the cover or closure device prevents a complete traverse of the interface, all accessible portions of the interface shall be sampled. In the case when the configuration of the closure device prevents any sampling at the interface and the device is equipped with an enclosed extension or horn (e.g., some pressure relief devices), the instrument probe inlet shall be placed at approximately the center of the exhaust area to the atmosphere.

(8) The arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 500 ppmv except when monitoring a seal around a rotating shaft that passes through a cover opening, in which case the comparison shall be as specified in paragraph (d)(9) of this section. If the difference is less than 500 ppmv, then the potential leak interface is determined to operate with no detectable organic emissions.

(9) For the seals around a rotating shaft that passes through a cover opening, the arithmetic difference between the maximum organic concentration indicated by the instrument and the background level shall be compared with the value of 10,000 ppmw. If the difference is less than 10,000 ppmw, then the potential leak interface is determined to operate with no detectable organic emissions.

42. Section 265.1085 is revised to read as follows:

§ 265.1085 Standards: Tanks.

(a) The provisions of this section apply to the control of air pollutant emissions from tanks for which § 265.1083(b) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from each tank subject to this section in accordance with the following requirements, as applicable:

(1) For a tank that manages hazardous waste that meets all of the conditions specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section, the owner or operator shall control air pollutant emissions from the tank in accordance with the Tank Level 1 controls specified in paragraph (c) of this section or the Tank Level 2 controls specified in paragraph (d) of this section.

(i) The hazardous waste in the tank has a maximum organic vapor pressure which is less than the maximum organic vapor pressure limit for the tank's design capacity category as follows:

(A) For a tank design capacity equal to or greater than 151 m^3, the maximum organic vapor pressure limit for the tank is 5.2 kPa.

(B) For a tank design capacity equal to or greater than 75 m^3 but less than 151 m^3, the maximum organic vapor pressure limit for the tank is 27.6 kPa.

(C) For a tank design capacity less than 75 m^3, the maximum organic vapor pressure limit for the tank is 76.6 kPa.

(ii) The hazardous waste in the tank is not heated by the owner or operator to a temperature that is greater than the temperature at which the maximum organic vapor pressure of the hazardous waste is determined for the purpose of complying with paragraph (b)(1)(i) of this section.

(iii) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process, as defined in § 265.1081 of this subpart.

(2) For a tank that manages hazardous waste that does not meet all of the conditions specified in paragraphs (b)(1)(i) through (b)(1)(iii) of this section, the owner or operator shall control air pollutant emissions from the tank by using Tank Level 2 controls in accordance with the requirements of

paragraph (d) of this section. Examples of tanks required to use Tank Level 2 controls include: A tank used for a waste stabilization process; and a tank for which the hazardous waste in the tank has a maximum organic vapor pressure that is equal to or greater than the maximum organic vapor pressure limit for the tank's design capacity category as specified in paragraph (b)(1)(i) of this section.

(c) Owners and operators controlling air pollutant emissions from a tank using Tank Level 1 controls shall meet the requirements specified in paragraphs (c)(1) through (c)(4) of this section:

(1) The owner or operator shall determine the maximum organic vapor pressure for a hazardous waste to be managed in the tank using Tank Level 1 controls before the first time the hazardous waste is placed in the tank. The maximum organic vapor pressure shall be determined using the procedures specified in § 265.1084(c) of this subpart. Thereafter, the owner or operator shall perform a new determination whenever changes to the hazardous waste managed in the tank could potentially cause the maximum organic vapor pressure to increase to a level that is equal to or greater than the maximum organic vapor pressure limit for the tank design capacity category specified in paragraph (b)(1)(i) of this section, as applicable to the tank.

(2) The tank shall be equipped with a fixed roof designed to meet the following specifications:

(i) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the hazardous waste in the tank. The fixed roof may be a separate cover installed on the tank (e.g., a removable cover mounted on an open-top tank) or may be an integral part of the tank structural design (e.g., a horizontal cylindrical tank equipped with a hatch).

(ii) The fixed roof shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between roof section joints or between the interface of the roof edge and the tank wall.

(iii) Each opening in the fixed roof shall be either:

(A) Equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the opening and the closure device; or

(B) Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and it shall be operating whenever hazardous waste is managed in the tank.

(iv) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the hazardous waste or its vapors managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(3) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position except as follows:

(i) Opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(B) To remove accumulated sludge or other residues from the bottom of tank.

(ii) Opening of a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the tank internal pressure in accordance with the tank design specifications. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the tank internal pressure is within the internal pressure operating range determined by the owner or operator based on the tank manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the tank internal pressure exceeds the internal pressure operating range for the tank as a result of loading operations or diurnal ambient temperature fluctuations.

(iii) Opening of a safety device, as defined in § 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator shall inspect the air emission control equipment in accordance with the following requirements.

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform an initial inspection of the fixed roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except under the special conditions provided for in paragraph (l) of this section.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 265.1090(b) of this subpart.

(d) Owners and operators controlling air pollutant emissions from a tank using Tank Level 2 controls shall use one of the following tanks:

(1) A fixed-roof tank equipped with an internal floating roof in accordance with the requirements specified in paragraph (e) of this section;

(2) A tank equipped with an external floating roof in accordance with the requirements specified in paragraph (f) of this section;

(3) A tank vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (g) of this section;

(4) A pressure tank designed and operated in accordance with the

requirements specified in paragraph (h) of this section; or

(5) A tank located inside an enclosure that is vented through a closed-vent system to an enclosed combustion control device in accordance with the requirements specified in paragraph (i) of this section.

(e) The owner or operator who controls air pollutant emissions from a tank using a fixed-roof with an internal floating roof shall meet the requirements specified in paragraphs (e)(1) through (e)(3) of this section.

(1) The tank shall be equipped with a fixed roof and an internal floating roof in accordance with the following requirements:

(i) The internal floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The internal floating roof shall be equipped with a continuous seal between the wall of the tank and the floating roof edge that meets either of the following requirements:

(A) A single continuous seal that is either a liquid-mounted seal or a metallic shoe seal, as defined in § 265.1081 of this subpart; or

(B) Two continuous seals mounted one above the other. The lower seal may be a vapor-mounted seal.

(iii) The internal floating roof shall meet the following specifications:

(A) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(B) Each opening in the internal floating roof shall be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains.

(C) Each penetration of the internal floating roof for the purpose of sampling shall have a slit fabric cover that covers at least 90 percent of the opening.

(D) Each automatic bleeder vent and rim space vent shall be gasketed.

(E) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(F) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(ii) Automatic bleeder vents are to be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(iii) Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof shall be bolted or fastened closed (i.e., no visible gaps). Rim space vents are to be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

(3) The owner or operator shall inspect the internal floating roof in accordance with the procedures specified as follows:

(i) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: The internal floating roof is not floating on the surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears, or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.

(ii) The owner or operator shall inspect the internal floating roof components as follows except as provided in paragraph (e)(3)(iii) of this section:

(A) Visually inspect the internal floating roof components through openings on the fixed-roof (e.g., manholes and roof hatches) at least once every 12 months after initial fill, and

(B) Visually inspect the internal floating roof, primary seal, secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 10 years.

(iii) As an alternative to performing the inspections specified in paragraph (e)(3)(ii) of this section for an internal floating roof equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed and at least every 5 years.

(iv) Prior to each inspection required by paragraph (e)(3)(ii) or (e)(3)(iii) of this section, the owner or operator shall notify the Regional Administrator in advance of each inspection to provide the Regional Administrator with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Regional Administrator of the date and location of the inspection as follows:

(A) Prior to each visual inspection of an internal floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Regional Administrator at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (e)(3)(iv)(B) of this section.

(B) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Regional Administrator as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Regional Administrator at least 7 calendar days before refilling the tank.

(v) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(vi) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 265.1090(b) of this subpart.

(f) The owner or operator who controls air pollutant emissions from a tank using an external floating roof shall meet the requirements specified in paragraphs (f)(1) through (f)(3) of this section.

(1) The owner or operator shall design the external floating roof in accordance with the following requirements:

(i) The external floating roof shall be designed to float on the liquid surface except when the floating roof must be supported by the leg supports.

(ii) The floating roof shall be equipped with two continuous seals, one above the other, between the wall of the tank and the roof edge. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be a liquid-mounted seal or a metallic shoe seal, as defined in § 265.1081 of this subpart. The total area of the gaps between the

tank wall and the primary seal shall not exceed 212 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 3.8 centimeters (cm). If a metallic shoe seal is used for the primary seal, the metallic shoe seal shall be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface.

(B) The secondary seal shall be mounted above the primary seal and cover the annular space between the floating roof and the wall of the tank. The total area of the gaps between the tank wall and the secondary seal shall not exceed 21.2 square centimeters (cm^2) per meter of tank diameter, and the width of any portion of these gaps shall not exceed 1.3 centimeters (cm).

(iii) The external floating roof shall meet the following specifications:

(A) Except for automatic bleeder vents (vacuum breaker vents) and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface.

(B) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be equipped with a gasketed cover, seal, or lid.

(C) Each access hatch and each gauge float well shall be equipped with a cover designed to be bolted or fastened when the cover is secured in the closed position.

(D) Each automatic bleeder vent and each rim space vent shall be equipped with a gasket.

(E) Each roof drain that empties into the liquid managed in the tank shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(F) Each unslotted and slotted guide pole well shall be equipped with a gasketed sliding cover or a flexible fabric sleeve seal.

(G) Each unslotted guide pole shall be equipped with a gasketed cap on the end of the pole.

(H) Each slotted guide pole shall be equipped with a gasketed float or other device which closes off the liquid surface from the atmosphere.

(I) Each gauge hatch and each sample well shall be equipped with a gasketed cover.

(2) The owner or operator shall operate the tank in accordance with the following requirements:

(i) When the floating roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be completed as soon as practical.

(ii) Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof shall be secured and maintained in a closed position at all times except when the closure device must be open for access.

(iii) Covers on each access hatch and each gauge float well shall be bolted or fastened when secured in the closed position.

(iv) Automatic bleeder vents shall be set closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the leg supports.

(v) Rim space vents shall be set to open only at those times that the roof is being floated off the roof leg supports or when the pressure beneath the rim seal exceeds the manufacturer's recommended setting.

(vi) The cap on the end of each unslotted guide pole shall be secured in the closed position at all times except when measuring the level or collecting samples of the liquid in the tank.

(vii) The cover on each gauge hatch or sample well shall be secured in the closed position at all times except when the hatch or well must be opened for access.

(viii) Both the primary seal and the secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except during inspections.

(3) The owner or operator shall inspect the external floating roof in accordance with the procedures specified as follows:

(i) The owner or operator shall measure the external floating roof seal gaps in accordance with the following requirements:

(A) The owner or operator shall perform measurements of gaps between the tank wall and the primary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every 5 years.

(B) The owner or operator shall perform measurements of gaps between the tank wall and the secondary seal within 60 calendar days after initial operation of the tank following installation of the floating roof and, thereafter, at least once every year.

(C) If a tank ceases to hold hazardous waste for a period of 1 year or more, subsequent introduction of hazardous waste into the tank shall be considered an initial operation for the purposes of paragraphs (f)(3)(i)(A) and (f)(3)(i)(B) of this section.

(D) The owner or operator shall determine the total surface area of gaps in the primary seal and in the secondary seal individually using the following procedure:

(*1*) The seal gap measurements shall be performed at one or more floating roof levels when the roof is floating off the roof supports.

(*2*) Seal gaps, if any, shall be measured around the entire perimeter of the floating roof in each place where a 0.32-centimeter (cm) diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.

(*3*) For a seal gap measured under paragraph (f)(3) of this section, the gap surface area shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(*4*) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal perimeter of the tank. These total gap areas for the primary seal and secondary seal are then are compared to the respective standards for the seal type as specified in paragraph (f)(1)(ii) of this section.

(E) In the event that the seal gap measurements do not conform to the specifications in paragraph (f)(1)(ii) of this section, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(F) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 265.1090(b) of this subpart.

(ii) The owner or operator shall visually inspect the external floating roof in accordance with the following requirements:

(A) The floating roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to: Holes, tears, or other openings in the rim seal or seal fabric of the floating roof; a rim seal detached from the floating roof; all or a portion of the floating roof deck being submerged below the surface of the liquid in the tank; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(B) The owner or operator shall perform an initial inspection of the external floating roof and its closure devices on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (l) of this section.

(C) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(D) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 265.1090(b) of this subpart.

(iii) Prior to each inspection required by paragraph (f)(3)(i) or (f)(3)(ii) of this section, the owner or operator shall notify the Regional Administrator in advance of each inspection to provide the Regional Administrator with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Regional Administrator of the date and location of the inspection as follows:

(A) Prior to each inspection to measure external floating roof seal gaps as required under paragraph (f)(3)(i) of this section, written notification shall be prepared and sent by the owner or operator so that it is received by the Regional Administrator at least 30 calendar days before the date the measurements are scheduled to be performed.

(B) Prior to each visual inspection of an external floating roof in a tank that has been emptied and degassed, written notification shall be prepared and sent by the owner or operator so that it is received by the Regional Administrator at least 30 calendar days before refilling the tank except when an inspection is not planned as provided for in paragraph (f)(3)(iii)(C) of this section.

(C) When a visual inspection is not planned and the owner or operator could not have known about the inspection 30 calendar days before refilling the tank, the owner or operator shall notify the Regional Administrator as soon as possible, but no later than 7 calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Regional Administrator at least 7 calendar days before refilling the tank.

(g) The owner or operator who controls air pollutant emissions from a tank by venting the tank to a control device shall meet the requirements specified in paragraphs (g)(1) through (g)(3) of this section.

(1) The tank shall be covered by a fixed roof and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(i) The fixed roof and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the tank.

(ii) Each opening in the fixed roof not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the fixed roof is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the fixed roof is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions.

(iii) The fixed roof and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the fixed roof and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the fixed roof and closure devices shall include: Organic vapor permeability, the effects of any contact with the liquid and its vapor managed in the tank; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the tank on which the fixed roof is installed.

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 265.1088 of this subpart.

(2) Whenever a hazardous waste is in the tank, the fixed roof shall be installed with each closure device secured in the closed position and the vapor headspace underneath the fixed roof vented to the control device except as follows:

(i) Venting to the control device is not required, and opening of closure devices or removal of the fixed roof is allowed at the following times:

(A) To provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the tank, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the tank.

(B) To remove accumulated sludge or other residues from the bottom of a tank.

(ii) Opening of a safety device, as defined in § 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(i) The fixed roof and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the roof sections or between the roof and the tank wall; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in § 265.1088 of this subpart.

(iii) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the tank becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (l) of this section.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (k) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 265.1090(b) of this subpart.

(h) The owner or operator who controls air pollutant emissions by using a pressure tank shall meet the following requirements.

(1) The tank shall be designed not to vent to the atmosphere as a result of compression of the vapor headspace in the tank during filling of the tank to its design capacity.

(2) All tank openings shall be equipped with closure devices designed to operate with no detectable organic emissions as determined using the procedure specified in § 265.1084(d) of this subpart.

(3) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except in the event that a safety device, as defined in § 265.1081 of this subpart, is required to open to avoid an unsafe condition.

(i) The owner or operator who controls air pollutant emissions by using an enclosure vented through a closed-vent system to an enclosed combustion control device shall meet the requirements specified in paragraphs (i)(1) through (i)(4) of this section.

(1) The tank shall be located inside an enclosure. The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, Appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of material into or out of the enclosure by conveyor, vehicles, or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' initially when the enclosure is first installed and, thereafter, annually.

(2) The enclosure shall be vented through a closed-vent system to an enclosed combustion control device that is designed and operated in accordance with the standards for either a vapor incinerator, boiler, or process heater specified in § 265.1088 of this subpart.

(3) Safety devices, as defined in § 265.1081 of this subpart, may be installed and operated as necessary on any enclosure, closed-vent system, or control device used to comply with the requirements of paragraphs (i)(1) and (i)(2) of this section.

(4) The owner or operator shall inspect and monitor the closed-vent system and control device as specified in § 265.1088 of this subpart.

(j) The owner or operator shall transfer hazardous waste to a tank subject to this section in accordance with the following requirements:

(1) Transfer of hazardous waste, except as provided in paragraph (j)(2) of this section, to the tank from another tank subject to this section or from a surface impoundment subject to § 265.1086 of this subpart shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the hazardous waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems.

(2) The requirements of paragraph (j)(1) of this section do not apply when transferring a hazardous waste to the tank under any of the following conditions:

(i) The hazardous waste meets the average VO concentration conditions specified in § 265.1083(c)(1) of this subpart at the point of waste origination.

(ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in § 265.1083(c)(2) of this subpart.

(k) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraphs (c)(4), (e)(3), (f)(3), or (g)(3) of this section as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (k)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the tank and no alternative tank capacity is available at the site to accept the hazardous waste normally managed in the tank. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(l) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions:

(1) In the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions, then the owner or operator may designate a cover as an ''unsafe to inspect and monitor cover'' and comply with all of the following requirements:

(i) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(ii) Develop and implement a written plan and schedule to inspect and monitor the cover, using the procedures specified in the applicable section of this subpart, as frequently as practicable during those times when a worker can safely access the cover.

(2) In the case when a tank is buried partially or entirely underground, an owner or operator is required to inspect and monitor, as required by the applicable provisions of this section, only those portions of the tank cover and those connections to the tank (e.g., fill ports, access hatches, gauge wells, etc.) that are located on or above the ground surface.

43. Section 265.1086 is revised to read as follows:

§ 265.1086 Standards: surface impoundments.

(a) The provisions of this section apply to the control of air pollutant emissions from surface impoundments for which § 265.1083(b) of this subpart references the use of this section for such air emission control.

(b) The owner or operator shall control air pollutant emissions from the surface impoundment by installing and operating either of the following:

(1) A floating membrane cover in accordance with the provisions specified in paragraph (c) of this section; or

(2) A cover that is vented through a closed-vent system to a control device in accordance with the provisions specified in paragraph (d) of this sections.

(c) The owner or operator who controls air pollutant emissions from a surface impoundment using a floating membrane cover shall meet the requirements specified in paragraphs (c)(1) through (c)(3) of this section.

(1) The surface impoundment shall be equipped with a floating membrane cover designed to meet the following specifications:

(i) The floating membrane cover shall be designed to float on the liquid surface during normal operations and form a continuous barrier over the entire surface area of the liquid.

(ii) The cover shall be fabricated from a synthetic membrane material that is either:

(A) High density polyethylene (HDPE) with a thickness no less than 2.5 millimeters (mm); or

(B) A material or a composite of different materials determined to have

both organic permeability properties that are equivalent to those of the material listed in paragraph (c)(1)(ii)(A) of this section and chemical and physical properties that maintain the material integrity for the intended service life of the material.

(iii) The cover shall be installed in a manner such that there are no visible cracks, holes, gaps, or other open spaces between cover section seams or between the interface of the cover edge and its foundation mountings.

(iv) Except as provided for in paragraph (c)(1)(v) of this section, each opening in the floating membrane cover shall be equipped with a closure device designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device.

(v) The floating membrane cover may be equipped with one or more emergency cover drains for removal of stormwater. Each emergency cover drain shall be equipped with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening or a flexible fabric sleeve seal.

(vi) The closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid and its vapor managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the floating membrane cover is installed.

(2) Whenever a hazardous waste is in the surface impoundment, the floating membrane cover shall float on the liquid and each closure device shall be secured in the closed position except as follows:

(i) Opening of closure devices or removal of the cover is allowed at the following times:

(A) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample the liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly replace the cover and secure the closure device in the closed position, as applicable.

(B) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(ii) Opening of a safety device, as defined in § 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect the floating membrane cover in accordance with the following procedures:

(i) The floating membrane cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The owner or operator shall perform an initial inspection of the floating membrane cover and its closure devices on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (g) of this section.

(iii) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (f) of this section.

(iv) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 265.1090(c) of this subpart.

(d) The owner or operator who controls air pollutant emissions from a surface impoundment using a cover vented to a control device shall meet the requirements specified in paragraphs (d)(1) through (d)(3) of this section.

(1) The surface impoundment shall be covered by a cover and vented directly through a closed-vent system to a control device in accordance with the following requirements:

(i) The cover and its closure devices shall be designed to form a continuous barrier over the entire surface area of the liquid in the surface impoundment.

(ii) Each opening in the cover not vented to the control device shall be equipped with a closure device. If the pressure in the vapor headspace underneath the cover is less than atmospheric pressure when the control device is operating, the closure devices shall be designed to operate such that when the closure device is secured in the closed position there are no visible cracks, holes, gaps, or other open spaces in the closure device or between the perimeter of the cover opening and the closure device. If the pressure in the vapor headspace underneath the cover is equal to or greater than atmospheric pressure when the control device is operating, the closure device shall be designed to operate with no detectable organic emissions using the procedure specified in § 265.1084(d) of this subpart.

(iii) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials for and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

(iv) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 265.1088 of this subpart.

(2) Whenever a hazardous waste is in the surface impoundment, the cover shall be installed with each closure device secured in the closed position and the vapor headspace underneath the cover vented to the control device except as follows:

(i) Venting to the control device is not required, and opening of closure devices or removal of the cover is allowed at the following times:

(A) To provide access to the surface impoundment for performing routine inspection, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port to sample liquid in the surface impoundment, or when a worker needs to open a hatch to maintain or repair equipment. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, to the surface impoundment.

(B) To remove accumulated sludge or other residues from the bottom of surface impoundment.

(ii) Opening of a safety device, as defined in § 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(3) The owner or operator shall inspect and monitor the air emission control equipment in accordance with the following procedures:

(i) The surface impoundment cover and its closure devices shall be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. Defects include, but are not limited to, visible cracks, holes, or gaps in the cover section seams or between the interface of the cover edge and its foundation mountings; broken, cracked, or otherwise damaged seals or gaskets on closure devices; and broken or missing hatches, access covers, caps, or other closure devices.

(ii) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in § 265.1088 of this subpart.

(iii) The owner or operator shall perform an initial inspection of the air emission control equipment on or before the date that the surface impoundment becomes subject to this section. Thereafter, the owner or operator shall perform the inspections at least once every year except for the special conditions provided for in paragraph (g) of this section.

(iv) In the event that a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (f) of this section.

(v) The owner or operator shall maintain a record of the inspection in accordance with the requirements specified in § 265.1090(c) of this subpart.

(e) The owner or operator shall transfer hazardous waste to a surface impoundment subject to this section in accordance with the following requirements:

(1) Transfer of hazardous waste, except as provided in paragraph (e)(2) of this section, to the surface impoundment from another surface impoundment subject to this section or from a tank subject to § 265.1085 of this subpart shall be conducted using continuous hard-piping or another closed system that does not allow exposure of the waste to the atmosphere. For the purpose of complying with this provision, an individual drain system is considered to be a closed system when it meets the requirements of 40 CFR part 63, subpart RR—National Emission Standards for Individual Drain Systems.

(2) The requirements of paragraph (e)(1) of this section do not apply when transferring a hazardous waste to the surface impoundment under either of the following conditions:

(i) The hazardous waste meets the average VO concentration conditions specified in § 265.1083(c)(1) of this subpart at the point of waste origination.

(ii) The hazardous waste has been treated by an organic destruction or removal process to meet the requirements in § 265.1083(c)(2) of this subpart.

(f) The owner or operator shall repair each defect detected during an inspection performed in accordance with the requirements of paragraph (c)(3) or (d)(3) of this section as follows:

(1) The owner or operator shall make first efforts at repair of the defect no later than 5 calendar days after detection, and repair shall be completed as soon as possible but no later than 45 calendar days after detection except as provided in paragraph (f)(2) of this section.

(2) Repair of a defect may be delayed beyond 45 calendar days if the owner or operator determines that repair of the defect requires emptying or temporary removal from service of the surface impoundment and no alternative capacity is available at the site to accept the hazardous waste normally managed in the surface impoundment. In this case, the owner or operator shall repair the defect the next time the process or unit that is generating the hazardous waste managed in the tank stops operation. Repair of the defect shall be completed before the process or unit resumes operation.

(g) Following the initial inspection and monitoring of the cover as required by the applicable provisions of this subpart, subsequent inspection and monitoring may be performed at intervals longer than 1 year in the case when inspecting or monitoring the cover would expose a worker to dangerous, hazardous, or other unsafe conditions. In this case, the owner or operator may designate the cover as an ''unsafe to inspect and monitor cover'' and comply with all of the following requirements:

(1) Prepare a written explanation for the cover stating the reasons why the cover is unsafe to visually inspect or to monitor, if required.

(2) Develop and implement a written plan and schedule to inspect and monitor the cover using the procedures specified in the applicable section of this subpart as frequently as practicable during those times when a worker can safely access the cover.

44. Section 265.1087 is revised to read as follows:

§ 265.1087 Standards: Containers.

(a) The provisions of this section apply to the control of air pollutant emissions from containers for which § 265.1083(b) of this subpart references the use of this section for such air emission control.

(b) General requirements.

(1) The owner or operator shall control air pollutant emissions from each container subject to this section in accordance with the following requirements, as applicable to the container, except when the special provisions for waste stabilization processes specified in paragraph (b)(2) of this section apply to the container.

(i) For a container having a design capacity greater than 0.1 m^3 and less than or equal to 0.46 m^3, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in paragraph (c) of this section.

(ii) For a container having a design capacity greater than 0.46 m^3 that is not in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in paragraph (c) of this section.

(iii) For a container having a design capacity greater than 0.46 m^3 that is in light material service, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 2 standards specified in paragraph (d) of this section.

(2) When a container having a design capacity greater than 0.1 m^3 is used for treatment of a hazardous waste by a waste stabilization process, the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in paragraph (e) of this section at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.

(c) Container Level 1 standards.

(1) A container using Container Level 1 controls is one of the following:

(i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(ii) A container equipped with a cover and closure devices that form a

continuous barrier over the container openings such that when the cover and closure devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g., a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g., a ''portable tank'' or bulk cargo container equipped with a screw-type cap).

(iii) An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

(2) A container used to meet the requirements of paragraph (c)(1)(ii) or (c)(1)(iii) of this section shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity for as long as it is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability, the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

(3) Whenever a hazardous waste is in a container using Container Level 1 controls, the owner or operator shall install all covers and closure devices for the container, as applicable to the container, and secure and maintain each closure device in the closed position except as follows:

(i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(B) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(ii) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of this section, an empty container as defined in 40 CFR 261.7(b) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

(B) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in 40 CFR 261.7(b), the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(iii) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(iv) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the container internal pressure in accordance with the design specifications of the container. The device shall be designed to operate with no detectable organic emissions when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(v) Opening of a safety device, as defined in § 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator of containers using Container Level 1 controls shall inspect the containers and their covers and closure devices as follows:

(i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)) within 24 hours after the container is accepted at the facility, the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c)(4)(iii) of this section.

(ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c)(4)(iii) of this section.

(iii) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first

efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

(5) The owner or operator shall maintain at the facility a copy of the procedure used to determine that containers with capacity of 0.46 m^3 or greater, which do not meet applicable DOT regulations as specified in paragraph (f) of this section, are not managing hazardous waste in light material service.

(d) Container Level 2 standards.

(1) A container using Container Level 2 controls is one of the following:

(i) A container that meets the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as specified in paragraph (f) of this section.

(ii) A container that operates with no detectable organic emissions as defined in § 265.1081 of this subpart and determined in accordance with the procedure specified in paragraph (g) of this section.

(iii) A container that has been demonstrated within the preceding 12 months to be vapor-tight by using 40 CFR part 60, appendix A, Method 27 in accordance with the procedure specified in paragraph (h) of this section.

(2) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive or other hazardous materials. Examples of container loading procedures that the EPA considers to meet the requirements of this paragraph include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

(3) Whenever a hazardous waste is in a container using Container Level 2 controls, the owner or operator shall install all covers and closure devices for the container, and secure and maintain each closure device in the closed position except as follows:

(i) Opening of a closure device or cover is allowed for the purpose of adding hazardous waste or other material to the container as follows:

(A) In the case when the container is filled to the intended final level in one continuous operation, the owner or operator shall promptly secure the closure devices in the closed position and install the covers, as applicable to the container, upon conclusion of the filling operation.

(B) In the case when discrete quantities or batches of material intermittently are added to the container over a period of time, the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon either the container being filled to the intended final level; the completion of a batch loading after which no additional material will be added to the container within 15 minutes; the person performing the loading operation leaving the immediate vicinity of the container; or the shutdown of the process generating the material being added to the container, whichever condition occurs first.

(ii) Opening of a closure device or cover is allowed for the purpose of removing hazardous waste from the container as follows:

(A) For the purpose of meeting the requirements of this section, an empty container as defined in 40 CFR 261.7(b) may be open to the atmosphere at any time (i.e., covers and closure devices are not required to be secured in the closed position on an empty container).

(B) In the case when discrete quantities or batches of material are removed from the container but the container does not meet the conditions to be an empty container as defined in 40 CFR 261.7(b), the owner or operator shall promptly secure the closure devices in the closed position and install covers, as applicable to the container, upon the completion of a batch removal after which no additional material will be removed from the container within 15 minutes or the person performing the unloading operation leaves the immediate vicinity of the container, whichever condition occurs first.

(iii) Opening of a closure device or cover is allowed when access inside the container is needed to perform routine activities other than transfer of hazardous waste. Examples of such activities include those times when a worker needs to open a port to measure the depth of or sample the material in the container, or when a worker needs to open a manhole hatch to access equipment inside the container. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable to the container.

(iv) Opening of a spring-loaded, pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications. The device shall be designed to operate with no detectable organic emission when the device is secured in the closed position. The settings at which the device opens shall be established such that the device remains in the closed position whenever the internal pressure of the container is within the internal pressure operating range determined by the owner or operator based on container manufacturer recommendations, applicable regulations, fire protection and prevention codes, standard engineering codes and practices, or other requirements for the safe handling of flammable, ignitable, explosive, reactive, or hazardous materials. Examples of normal operating conditions that may require these devices to open are during those times when the internal pressure of the container exceeds the internal pressure operating range for the container as a result of loading operations or diurnal ambient temperature fluctuations.

(v) Opening of a safety device, as defined in § 265.1081 of this subpart, is allowed at any time conditions require doing so to avoid an unsafe condition.

(4) The owner or operator of containers using Container Level 2 controls shall inspect the containers and their covers and closure devices as follows:

(i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)) within 24 hours after the container arrives at the facility, the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is

detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d)(4)(iii) of this section.

(ii) In the case when a container used for managing hazardous waste remains at the facility for a period of 1 year or more, the owner or operator shall visually inspect the container and its cover and closure devices initially and thereafter, at least once every 12 months, to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d)(4)(iii) of this section.

(iii) When a defect is detected for the container, cover, or closure devices, the owner or operator shall make first efforts at repair of the defect no later than 24 hours after detection, and repair shall be completed as soon as possible but no later than 5 calendar days after detection. If repair of a defect cannot be completed within 5 calendar days, then the hazardous waste shall be removed from the container and the container shall not be used to manage hazardous waste until the defect is repaired.

(e) Container Level 3 standards.

(1) A container using Container Level 3 controls is one of the following:

(i) A container that is vented directly through a closed-vent system to a control device in accordance with the requirements of paragraph (e)(2)(ii) of this section.

(ii) A container that is vented inside an enclosure which is exhausted through a closed-vent system to a control device in accordance with the requirements of paragraphs (e)(2)(i) and (e)(2)(ii) of this section.

(2) The owner or operator shall meet the following requirements, as applicable to the type of air emission control equipment selected by the owner or operator:

(i) The container enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B. The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or direct airflow into the enclosure. The owner or operator shall perform the verification procedure for the enclosure as specified in Section 5.0 to ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' initially when the enclosure is first installed and, thereafter, annually.

(ii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 265.1088 of this subpart.

(3) Safety devices, as defined in § 265.1081 of this subpart, may be installed and operated as necessary on any container, enclosure, closed-vent system, or control device used to comply with the requirements of paragraph (e)(1) of this section.

(4) Owners and operators using Container Level 3 controls in accordance with the provisions of this subpart shall inspect and monitor the closed-vent systems and control devices as specified in § 265.1088 of this subpart.

(5) Owners and operators that use Container Level 3 controls in accordance with the provisions of this subpart shall prepare and maintain the records specified in § 265.1090(d) of this subpart.

(f) For the purpose of compliance with paragraph (c)(1)(i) or (d)(1)(i) of this section, containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation as follows:

(1) The container meets the applicable requirements specified in 49 CFR part 178—Specifications for Packaging or 49 CFR part 179—Specifications for Tank Cars.

(2) Hazardous waste is managed in the container in accordance with the applicable requirements specified in 49 CFR part 107, subpart B—Exemptions; 49 CFR part 172—Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements; 49 CFR part 173—Shippers—General Requirements for Shipments and Packages; and 49 CFR part 180—Continuing Qualification and Maintenance of Packagings.

(3) For the purpose of complying with this subpart, no exceptions to the 49 CFR part 178 or part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section.

(4) For a lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart, an owner or operator may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).

(g) The owner or operator shall use the procedure specified in § 265.1084(d) of this subpart for determining a container operates with no detectable organic emissions for the purpose of complying with paragraph (d)(1)(ii) of this section.

(1) Each potential leak interface (i.e., a location where organic vapor leakage could occur) on the container, its cover, and associated closure devices, as applicable to the container, shall be checked. Potential leak interfaces that are associated with containers include, but are not limited to: The interface of the cover rim and the container wall; the periphery of any opening on the container or container cover and its associated closure device; and the sealing seat interface on a spring-loaded pressure-relief valve.

(2) The test shall be performed when the container is filled with a material having a volatile organic concentration representative of the range of volatile organic concentrations for the hazardous wastes expected to be managed in this type of container. During the test, the container cover and closure devices shall be secured in the closed position.

(h) Procedure for determining a container to be vapor-tight using Method 27 of 40 CFR part 60, appendix A for the purpose of complying with paragraph (d)(1)(iii) of this section.

(1) The test shall be performed in accordance with Method 27 of 40 CFR part 60, appendix A of this chapter.

(2) A pressure measurement device shall be used that has a precision of ±2.5 mm water and that is capable of measuring above the pressure at which the container is to be tested for vapor tightness.

(3) If the test results determined by Method 27 indicate that the container sustains a pressure change less than or equal to 750 Pascals within 5 minutes after it is pressurized to a minimum of 4,500 Pascals, then the container is determined to be vapor-tight.

45. Section 265.1088 is amended by revising paragraph (b)(3), adding paragraph (b)(4), revising paragraphs (c)(2), (c)(3)(ii), and (c)(5)(i) (D)–(E), and adding paragraph (c)(7) to read as follows:

§ 265.1088 Standards: Closed-vent systems and control devices.

* * * * *

(b) * * *

(3) In the case when the closed-vent system includes bypass devices that could be used to divert the gas or vapor stream to the atmosphere before entering the control device, each bypass device shall be equipped with either a flow indicator as specified in paragraph (b)(3)(i) of this section or a seal or

locking device as specified in paragraph (b)(3)(ii) of this section. For the purpose of complying with this paragraph, low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, spring-loaded pressure relief valves, and other fittings used for safety purposes are not considered to be bypass devices.

(i) If a flow indicator is used to comply with paragraph (b)(3) of this section, the indicator shall be installed at the inlet to the bypass line used to divert gases and vapors from the closed-vent system to the atmosphere at a point upstream of the control device inlet. For this paragraph, a flow indicator means a device which indicates the presence of either gas or vapor flow in the bypass line.

(ii) If a seal or locking device is used to comply with paragraph (b)(3) of this section, the device shall be placed on the mechanism by which the bypass device position is controlled (e.g., valve handle, damper lever) when the bypass device is in the closed position such that the bypass device cannot be opened without breaking the seal or removing the lock. Examples of such devices include, but are not limited to, a car-seal or a lock-and-key configuration valve. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the bypass mechanism is maintained in the closed position.

(4) The closed-vent system shall be inspected and monitored by the owner or operator in accordance with the procedure specified in 40 CFR 265.1033(k).

(c) * * *

(2) The owner or operator who elects to use a closed-vent system and control device to comply with the requirements of this section shall comply with the requirements specified in paragraphs (c)(2)(i) through (c)(2)(vi) of this section.

(i) Periods of planned routine maintenance of the control device, during which the control device does not meet the specifications of paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, as applicable, shall not exceed 240 hours per year.

(ii) The specifications and requirements in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section for control devices do not apply during periods of planned routine maintenance.

(iii) The specifications and requirements in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section for control devices do not apply during a control device system malfunction.

(iv) The owner or operator shall demonstrate compliance with the requirements of paragraph (c)(2)(i) of this section (i.e., planned routine maintenance of a control device, during which the control device does not meet the specifications of paragraphs (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this section, as applicable, shall not exceed 240 hours per year) by recording the information specified in § 265.1090(e)(1)(v) of this subpart.

(v) The owner or operator shall correct control device system malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of air pollutants.

(vi) The owner or operator shall operate the closed-vent system such that gases, vapors, and/or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions.

* * * * *

(3) * * *

(i) * * *

(ii) All carbon removed from the control device shall be managed in accordance with the requirements of 40 CFR 265.1033(m).

* * * * *

(5) * * *

(i) * * *

(D) A boiler or industrial furnace burning hazardous waste for which the owner or operator has been issued a final permit under 40 CFR part 270 and has designed and operates the unit in accordance with the requirements of 40 CFR part 266, subpart H; or

(E) A boiler or industrial furnace burning hazardous waste for which the owner or operator has designed and operates in accordance with the interim status requirements of 40 CFR part 266, subpart H.

* * * * *

(7) The control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in 40 CFR 265.1033(f)(2) and 40 CFR 265.1033(k). The readings from each monitoring device required by 40 CFR 265.1033(f)(2) shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this section.

46. Section 265.1089 is revised to read as follows:

§ 265.1089 Inspection and monitoring requirements.

(a) The owner or operator shall inspect and monitor air emission control equipment used to comply with this subpart in accordance with the applicable requirements specified in § 265.1085 through § 265.1088 of this subpart.

(b) The owner or operator shall develop and implement a written plan and schedule to perform the inspections and monitoring required by paragraph (a) of this section. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under 40 CFR 265.15.

47. Section 265.1090 is revised to read as follows:

§ 265.1090 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to requirements in this subpart shall record and maintain the information specified in paragraphs (b) through (i) of this section, as applicable to the facility. Except for air emission control equipment design documentation and information required by paragraph (i) of this section, records required by this section shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by paragraph (i) of this section shall be maintained in the operating record for as long as the tank or container is not using air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1084(d) of this subpart.

(b) The owner or operator of a tank using air emission controls in accordance with the requirements of § 265.1085 of this subpart shall prepare and maintain records for the tank that include the following information:

(1) For each tank using air emission controls in accordance with the requirements of § 265.1085 of this subpart, the owner or operator shall record:

(i) A tank identification number (or other unique identification description as selected by the owner or operator).

(ii) A record for each inspection required by § 265.1085 of this subpart that includes the following information:

(A) Date inspection was conducted.

(B) For each defect detected during the inspection, the following information: the location of the defect, a description of the defect, the date of

detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 265.1085 of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(2) In addition to the information required by paragraph (b)(1) of this section, the owner or operator shall record the following information, as applicable to the tank:

(i) The owner or operator using a fixed roof to comply with the Tank Level 1 control requirements specified in § 265.1085(c) of this subpart shall prepare and maintain records for each determination for the maximum organic vapor pressure of the hazardous waste in the tank performed in accordance with the requirements of § 265.1085(c) of this subpart. The records shall include the date and time the samples were collected, the analysis method used, and the analysis results.

(ii) The owner or operator using an internal floating roof to comply with the Tank Level 2 control requirements specified in § 265.1085(e) of this subpart shall prepare and maintain documentation describing the floating roof design.

(iii) Owners and operators using an external floating roof to comply with the Tank Level 2 control requirements specified in § 265.1085(f) of this subpart shall prepare and maintain the following records:

(A) Documentation describing the floating roof design and the dimensions of the tank.

(B) Records for each seal gap inspection required by § 265.1085(f)(3) of this subpart describing the results of the seal gap measurements. The records shall include the date that the measurements were performed, the raw data obtained for the measurements, and the calculations of the total gap surface area. In the event that the seal gap measurements do not conform to the specifications in § 265.1085(f)(1) of this subpart, the records shall include a description of the repairs that were made, the date the repairs were made, and the date the tank was emptied, if necessary.

(iv) Each owner or operator using an enclosure to comply with the Tank Level 2 control requirements specified in § 265.1085(i) of this subpart shall prepare and maintain the following records:

(A) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B.

(B) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (e) of this section.

(c) The owner or operator of a surface impoundment using air emission controls in accordance with the requirements of § 265.1086 of this subpart shall prepare and maintain records for the surface impoundment that include the following information:

(1) A surface impoundment identification number (or other unique identification description as selected by the owner or operator).

(2) Documentation describing the floating membrane cover or cover design, as applicable to the surface impoundment, that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in § 265.1086(c) of this subpart.

(3) A record for each inspection required by § 265.1086 of this subpart that includes the following information:

(i) Date inspection was conducted.

(ii) For each defect detected during the inspection the following information: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 265.1086(f) of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

(4) For a surface impoundment equipped with a cover and vented through a closed-vent system to a control device, the owner or operator shall prepare and maintain the records specified in paragraph (e) of this section.

(d) The owner or operator of containers using Container Level 3 air emission controls in accordance with the requirements of § 265.1087 of this subpart shall prepare and maintain records that include the following information:

(1) Records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B.

(2) Records required for the closed-vent system and control device in accordance with the requirements of paragraph (e) of this section.

(e) The owner or operator using a closed-vent system and control device in accordance with the requirements of § 265.1088 of this subpart shall prepare and maintain records that include the following information:

(1) Documentation for the closed-vent system and control device that includes:

(i) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in paragraph (e)(1)(ii) of this section or by performance tests as specified in paragraph (e)(1)(iii) of this section when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur.

(ii) If a design analysis is used, then design documentation as specified in 40 CFR 265.1035(b)(4). The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with 40 CFR 265.1035(b)(4)(iii) and certification by the owner or operator that the control equipment meets the applicable specifications.

(iii) If performance tests are used, then a performance test plan as specified in 40 CFR 265.1035(b)(3) and all test results.

(iv) Information as required by 40 CFR 265.1035(c)(1) and 40 CFR 265.1035(c)(2), as applicable.

(v) An owner or operator shall record, on a semiannual basis, the information specified in paragraphs (e)(1)(v)(A) and (e)(1)(v)(B) of this section for those planned routine maintenance operations that would require the control device not to meet the requirements of § 265.1088 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable.

(A) A description of the planned routine maintenance that is anticipated to be performed for the control device during the next 6-month period. This description shall include the type of maintenance necessary, planned frequency of maintenance, and lengths of maintenance periods.

(B) A description of the planned routine maintenance that was performed for the control device during the previous 6-month period. This description shall include the type of maintenance performed and the total number of hours during those 6 months

that the control device did not meet the requirements of § 265.1088 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable, due to planned routine maintenance.

(vi) An owner or operator shall record the information specified in paragraphs (e)(1)(vi)(A) through (e)(1)(vi)(C) of this section for those unexpected control device system malfunctions that would require the control device not to meet the requirements of § 265.1088 (c)(1)(i), (c)(1)(ii), or (c)(1)(iii) of this subpart, as applicable.

(A) The occurrence and duration of each malfunction of the control device system.

(B) The duration of each period during a malfunction when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device while the control device is not properly functioning.

(C) Actions taken during periods of malfunction to restore a malfunctioning control device to its normal or usual manner of operation.

(vii) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with § 265.1088(c)(3)(ii) of this subpart.

(f) The owner or operator of a tank, surface impoundment, or container exempted from standards in accordance with the provisions of § 265.1083(c) of this subpart shall prepare and maintain the following records, as applicable:

(1) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in § 265.1083 (c)(1) or (c)(2) of this subpart, the owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of § 265.1084 of this subpart.

(2) For tanks, surface impoundments, or containers exempted under the provisions of § 265.1083(c)(2)(vii) or § 265.1083(c)(2)(viii) of this subpart, the owner or operator shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.

(g) An owner or operator designating a cover as ''unsafe to inspect and monitor'' pursuant to § 265.1085(l) or § 265.1086(g) of this subpart shall record in a log that is kept in the facility operating record the following information: The identification numbers for waste management units with covers that are designated as ''unsafe to inspect and monitor,'' the explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover.

(h) The owner or operator of a facility that is subject to this subpart and to the control device standards in 40 CFR part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable sections of this subpart by documentation either pursuant to this subpart, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this section.

(i) For each tank or container not using air emission controls specified in §§ 265.1085 through 265.1088 of this subpart in accordance with the conditions specified in § 265.1080(d) of this subpart, the owner or operator shall record and maintain the following information:

(1) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in § 265.1080(d)(1).

(2) A description of how the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section are managed at the facility in tanks and containers. This description shall include the following information:

(i) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: A facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: A facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

(3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section in the tanks and containers as described in paragraph (i)(2) of this section would create an undue safety hazard if the air emission controls, as required under §§ 265.1085 through 265.1088 of this subpart, are installed and operated on these waste management units. This explanation shall include the following information:

(i) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under this subpart, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: How use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under this subpart, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

§ 265.1091 [Removed and reserved]

48. Part 265 is amended by removing and reserving § 265.1091.

49. Part 265 is amended by adding Appendix VI to read as follows:

APPENDIX VI TO PART 265.—COMPOUNDS WITH HENRY'S LAW CONSTANT LESS THAN 0.1 Y/X

[At 25 degrees Celsius]

Compound name	CAS No.
TRICHLORO(1,1,2)TRIFLUORO	
FORMALDEHYDE	50–00–0
HYDROCYANIC ACID	74–90–8
FORMAMIDE	
QUINONE	
DIMETHYL HYDRAZINE(1,1)	57–14–7
METHYL ACRYLATE	96–33–3
ACETAMIDE	60–35–5
METHYL HYDRAZINE	60–34–4
DIETHYLHYDRAZINE N,N	
FORMIC ACID	64–18–6
DIMETHYL DISULFIDE	624–92–0
PHORATE	298–02–2
HYDRAZINE	302–01–2
LEAD SUBACETATE	1335–32–
LEAD ACETATE	301–04–2
NAPHTHOL,beta-	135–19–3
DIETHYLENE GLYCOL MONOMETHYL ETHER	
NITROSODIMETHYLAMINE N	62–75–9
DIETHYLENE GLYCOL MONOBUTYL ETHER	
ACETYL–2–THIOUREA, 1-	591–08–2
ACRYLIC ACID	79–10–7
ETHYLENE GLYCOL MONOPHENYL ETHER	
ETHYLENE GLYCOL MONOMETHYL ETHER	
DIMETHYL FORMAMIDE	68–12–2
DIETHYLENE GLYCOL DIMETHYL ETHER	
PROPIOLACTONE b	57–57–8
ETHYLENE GLYCOL MONOPROPYL ETHER	
METHYL SULFURIC ACID	
METHYL THIOPHENOL 4	106–45–6
ETHYLENE GLYCOL MONOETHYL ETHER Cellosol	
DIMETHYL CARBAMOYL CHLORIDE	
ETHYLENE GLYCOL MONOETHYL ETHER ACETATE	
BUTYL CELLOSOLVE	111–76–2
TOLUENE DIAMINE(2,4)	95–80–7
DIMETHYLSULFOXIDE	
ANILINE	62–53–3
DIETHYLENE GLYCOL	111–46–6
ETHYLPHENOL, 3-	620–17–7
GYLCIDOL	556–52–5
BUTYRIC ACID	107–92–6
NITROSO-N-METHYLUREA N	684–93–5
MONOMETHYL FORMANIDE	
ETHYL CARBAMATE	
ETHYL MORPHOLINE, ethyl diethylene oxime	
ETHANOLAMINE(mono-)	141–43–5
ETHYLENE THIOUREA	
PHENOL	108–95–2
ETHYLENE GLYCOL MONOBUTYL ETHER	
CRESOL	1319–77–
PROPYLENE GLYCOL	57–55–6
TRIETHYLENE GLYCOL DIMETHYL ETHER	
CRESOL(-o)	95–48–7
TOLUIDINE (m)	
CHLOROPHENOL-4	106–48–9
BENZYL ALCOHOL	100–51–6
ACETALDOL	
CHLOROACETIC ACID	79–11–8
GLYPHOSATE	
ETHYLENE GLYCOL	107–21–1
ADENINE	73–24–5
HEXAMETHYLPHOSPHORAMIDE	
DIETHYLENE GLYCOL MONOETHYL ETHER ACETAT	
DICHLOROPHENOL 2,5	
CRESOL(-p)	106–44–5
NITROSOMORPHOLINE	
QUINOLINE	91–22–5
DIMETHYLSULFONE	
CRESOL(-m)	108–39–4
TOLUENE DIISOCYANATE(2,4)	584–84–9
HYDROXY-(2)-PROPIONITRILE	109–78–4

APPENDIX VI TO PART 265.—COMPOUNDS WITH HENRY'S LAW CONSTANT LESS THAN 0.1 Y/X—Continued

[At 25 degrees Celsius]

Compound name	CAS No.
HEXANOIC ACID	142–62–1
FUMARIC ACID	110–17–8
METHANE SULFONIC ACID	75–75–2
MESITYL OXIDE	141–79–7
CHLORO-2,5-DIKETOPYRROLIDINE 3	
PYRIDINIUM BROMIDE	
METHYLIMINOACETIC ACID	
DIMETHOATE	60–51–5
GUANIDINE, NITROSO	674–81–7
PHENYLACETIC ACID	103–82–2
BENZENE SULFONIC ACID	
ACETYL-5-HYDROXYPIPERIDINE 3	
LEUCINE	61–90–5
alpha-PICOLINE	1333–41–
METHYL-2-METHOXYAZIRIDINE 1	
BROMOCHLOROMETHYL ACETATE	
DICHLOROTETRAHYDROFURAN 3,4	3511–19–
ACETYLPIPERIDINE 3	618–42–8
CHLORO-1,2-ETHANE DIOL	
CYANIDE	57–12–5
NIACINAMIDE	98–92–0
METHOXYPHENOL P	150–76–5
METHYLFURFURAL 5	620–02–0
GLYCINAMIDE	598–41–4
SUCCINIMIDE	123–56–8
SULFANILIC ACID	121–47–1
MALEIC ACID	110–16–7
AMETRYN	
DIMETHYLPHENOL(3,4)	
ANISIDINE,o-	90–04–0
TETRAETHYLENE PENTAMINE	
DIETHYLENE GLYCOL MONOETHYL ETHER	
CHLORACETOPHENONE,2-	93–76–5
DIPROPYLENE GLYCOL	
HEXAMETHYLENE 1,6 DIISOCYANATE	
NEOPENTYL GLYCOL	126–30–7
BHC,gamma-	58–89–9
PHENYLENE DIAMINE(-m)	108–45–2
CHLOROHYDRIN, a 3 CHLORO 1,2 PROPANEDIOL	
XYLENOL(3,4)	95–65–8
DINITRO-o-CRESOL(4,6)	534–52–1
PROPORUR (Baygon)	
DIBROMO-4-HYDROXYBENZONITRILE (3,5)	
CATECHOL	120–80–9
CHLOROANILINE,p-	106–47–8
DICHLORVOS	
ACRYLAMIDE	79–06–1
THIOSEMICARBAZIDE	79–19–6
TRIETHANOLAMINE	102–71–6
PENTAERYTHRITOL	115–77–5
PHENYLENE DIAMINE(-o)	95–54–5
CAPROLACTAM	
BENZOIC ACID	65–85–0
TOLUENEDIAMINE(3,4)	496–72–0
TRIPROPYLENE GLYCOL	
PHENYLENE DIAMINE(-p)	106–50–3
TEREPHTHALIC ACID	
NITROGLYCERIN	55–63–0
CHLORO(-p)CRESOL(-m)	59–50–7
DICHLOROANILINE 2,3-	
NITROANILINE(-o)	88–74–4
DIETHYL (N,N) ANILINE	91–66–7
NAPHTHOL,alpha-	90–15–3
AMINOPYRIDINE,4-	504–24–5
ADIPONITRILE	
BROMOXYNIL	
PHTHALIC ANHYDRIDE	85–44–9
MALEIC ANHYDRIDE	108–31–6
NITROPHENOL,2-	88–75–5
ACETYLAMINOFLUORENE,2	53–96–3
PROPANE SULTONE,1,3-	1120–71–

APPENDIX VI TO PART 265.—COMPOUNDS WITH HENRY'S LAW CONSTANT LESS THAN 0.1 Y/X—Continued

[At 25 degrees Celsius]

Compound name	CAS No.
CITRIC ACID	77–92–9
EPINEPHRINE	51–43–4
CHLOROPHENOL POLYMERS	
CREOSOTE	8001–58–
FLUOROACETIC ACID, SODIUM SALT	62–74–8
SODIUM ACETATE	
SUCCINIC ACID	110–15–6
SODIUM FORMATE	141–53–7
PHENACETIN	62–44–2
HYDROQUINONE	123–31–9
DIMETHYLAMINOAZOBENZENE,4-	60–11–7
METHYLENE DIPHENYL DIISOCYANATE	
OXALIC ACID	144–62–7
BENZO(A)PYRENE	50–32–8
DICHLOROBENZONITRILE,2,6-	1194–65–6
AMINOBIPHENYL,4-	92–67–1
NAPHTHYLAMINE,alpha-	134–32–7
DIETHANOLAMINE	
METHYLENEDIANILINE 4,4	
NAPHTHYLAMINE,beta-	91–59–8
METHYLENE DIPHENYLAMINE (MDA)	
GLUTARIC ACID	110–94–1
RESORCINOL	108–46–3
TOLUIC ACID (para-)	99–94–5
GUTHION	
DIMETHYL PHTHALATE	131–11–3
GLYCERIN (GLYCEROL)	56–81–5
THIOFANOX	39196–18
DIBUTYLPHTHALATE	84–74–2
ALDICARB	116–06–3
NITROPHENOL,4-	100–02–7
METHYLENE-BIS (2-CHLOROANILINE),4,4'-	101–14–4
DIPHENYLHYDRAZINE(1,2)	122–66–7
METHOMYL	16752–77
MALATHION	121–75–5
PARATHION	56–38–2
ADIPIC ACID	124–04–9
ALACHLOR	15972–60
STRYCHNIDIN-10-ONE,2,3-DIMETHOXY-	357–57–3
TOLUENEDIAMINE(2,6)	823–40–5
CUMYLPHENOL-4	27576–86
DIAZINON	
BENZENE ARSONIC ACID	98–05–5
WARFARIN	81–81–2
METHYL PARATHION	298–00–0
DIETHYLTHIOPHOSPHATEBENZO M ETHYL PETHER	
PHENYL MERCURIC ACETATE	62–38–4
DIETHYL PROPIONAMIDE,2aN	15299–99
CHLOROBENZOPHENONE (PARA)	134–85–0
THIOUREA,1-(o-CHLOROPHENYL)-	5344–82–
DIMETHYLBENZIDINE 3,3	
DICHLORO-(2,6)-NITROANILINE(4)	99–30–9
CELLULOSE	9000–11–
CELL WALL	
BENZIDINE	92–87–5
TETRAETHYLDITHIOPYROPHOSPHATE	3689–24–
NABAM	
ATRAZINE	1912–24–
ENDRIN	72–20–8
BIS(2-ETHYLHEXYL) PHTHALATE	117–81–7
BENZO(A)ANTHRACENE	56–55–3
CYANOMETHYL BENZOATE 4	
ANTHRAQUINONE	84–65–1
STRYCHNINE	57–24–9
SIMAZINE	122–34–9
PYRENE	129–00–0
CHLOROBENZYLATE	510–15–6
DIMETHYLBENZ(A) ANTHRACENE(7,12)	57–97–6
INDENO(1,2,3-cd)-PYRENE	193–39–5
CHRYSENE	218–01–9
BENZO(ghi)PERYLENE	191–24–2

APPENDIX VI TO PART 265.—COMPOUNDS WITH HENRY'S LAW CONSTANT LESS THAN 0.1 Y/X—Continued

[At 25 degrees Celsius]

Compound name	CAS No.
BENZO(k) FLUORANTHENE	207–08–9
DIBENZO(a,h)ANTHRACENE	53–70–3
DIETHYL PHOSPHOROTHIOATE	126–75–0

PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE MANAGEMENT PROGRAM

50. The authority citation for Part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6925, 6927, 6939, and 6974.

Subpart B—Permit Application

51. Section 270.14 is amended by revising paragraph (b)(5) to read as follows:

§ 270.14 Contents of Part B: General requirements.

* * * * *

(b) * * *

(5) A copy of the general inspection schedule required by § 264.15(b). Include where applicable, as part of the inspection schedule, specific requirements in §§ 264.174, 245.193(i), 264.195, 264.226, 264.254, 264.273, 264.303, 264.602, 264.1033, 264.1052, 264.1053, 264.1058, 264.1084, 264.1085, 264.1086, and 264.1088.

* * * * *

52. Section 270.27 is revised to read as follows:

§ 270.27 Specific Part B information requirements for air emission controls for tanks, surface impoundments, and containers.

(a) Except as otherwise provided in 40 CFR 264.1, owners and operators of tanks, surface impoundments, or containers that use air emission controls in accordance with the requirements of 40 CFR part 264, subpart CC shall provide the following additional information:

(1) Documentation for each floating roof cover installed on a tank subject to 40 CFR 264.1084(d)(1) or 40 CFR 264.1084(d)(2) that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the applicable design specifications as listed in 40 CFR 264.1084(e)(1) or 40 CFR 264.1084(f)(1).

(2) Identification of each container area subject to the requirements of 40 CFR part 264, subpart CC and certification by the owner or operator that the requirements of this subpart are met.

(3) Documentation for each enclosure used to control air pollutant emissions from tanks or containers in accordance with the requirements of 40 CFR 264.1084(d)(5) or 40 CFR 264.1086(e)(1)(ii) that includes records for the most recent set of calculations and measurements performed by the owner or operator to verify that the enclosure meets the criteria of a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B.

(4) Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of 40 CFR 264.1085(c) that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in 40 CFR 264.1085(c)(1).

(5) Documentation for each closed-vent system and control device installed in accordance with the requirements of 40 CFR 264.1087 that includes design and performance information as specified in § 270.24 (c) and (d) of this part.

(6) An emission monitoring plan for both Method 21 in 40 CFR part 60, appendix A and control device monitoring methods. This plan shall include the following information: monitoring point(s), monitoring methods for control devices, monitoring frequency, procedures for documenting exceedances, and procedures for mitigating noncompliances.

(7) When an owner or operator of a facility subject to 40 CFR part 265, subpart CC cannot comply with 40 CFR part 264, subpart CC by the date of permit issuance, the schedule of implementation required under 40 CFR 265.1082.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

53. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A—Requirements for Final Authorization

54. Section 271.1(j) is amended by revising the effective date of the following entry in Table 1 to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS WASTE AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	*	*	*
December 6, 1994	Air Emission Standards for Tanks, Surface Impoundments, and Containers.	59 FR 62896–62953	December 6, 1996.

§ 271.1 [Amended]

54. Section 271.1(j) is amended by revising the effective date of the following entry in Table 2 to read as follows:

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS WASTE AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	* * * * *	*	*
December 6, 1996	Air Emission Standards for Tanks, Surface Impoundments, and Containers.	3004(n)	December 6, 1994, 59 FR 62896–62953.

[FR Doc. 96–29456 Filed 11–22–96; 8:45 am]
BILLING CODE 6560–50–P

Hazardous Waste Treatment, Storage, and Disposal Facilities

[Federal Register: December 6, 1994]

Part IV

Environmental Protection Agency

---

40 CFR Part 9 et al.

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Final Rule ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9, 60, 260, 262, 264, 265, 270, and 271

[IL-64-2-5807; FRL-5110-8]
RIN 2060-AB94

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Under the authority of the Resource Conservation and Recovery Act (RCRA), as amended, the EPA is promulgating air standards that will further reduce organic emissions from hazardous waste management activities. The air standards apply to owners and operators of hazardous waste treatment, storage, and disposal facilities (TSDF) subject to RCRA subtitle C permitting requirements and to certain hazardous waste generators accumulating waste on-site in RCRA permitexempt tanks and containers. Under these standards, air emission controls must be used for tanks, surface impoundments, and containers in which hazardous waste is placed on or after June 5, 1995 except under certain conditions specified in the rule. Air emission control requirements are also added to the RCRA permit terms and provisions specified for TSDF miscellaneous units. In addition, this action establishes a new EPA reference test method (Method 25E) to determine the organic vapor pressure of a waste.

EFFECTIVE DATE: The final rule is effective as of June 5, 1995. The EPA has specified in the final rule a schedule that establishes the compliance dates by which different requirements of the rule must be met. These compliance dates and requirements are explained further under SUPPLEMENTARY INFORMATION.
The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of June 5, 1995.

ADDRESSES: Background information document. The background information document (BID) for the final rule may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone (919) 541-2777. Please refer to ``Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)--Background Information for Promulgated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers'', EPA document number EPA-453/R-94-076b. This document and the BID are also available on the EPA's Clean-up Information Bulletin Board (CLU-IN). To access CLU-IN with a modem of up to 28,800 baud, dial (301) 589-8366.

First-time users will be asked to input some initial registration information. Next, select ``D'' (download) from the main menu. Input the file name ``RCRAAIR1.ZIP'' to download this notice. Input the file name ``RCRAAIR2.ZIP'' to download the BID. Follow the on-line instructions to complete the download. More information about the download procedure is located in Bulletin 104; to read this type ``B 104'' from the main menu. For additional help with these instructions, telephone the CLU-IN help line at (301) 589-8368. Docket. The supporting information used for this rulemaking is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to this rulemaking are F-91-CESP-FFFFF, F-92-CESA-FFFFF, F-94-CESF-FFFFF, and F-94-CE2A-FFFFF. The RCRA docket is located at the EPA RCRA Docket Office (5305) in room 2616 of the U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT:
The RCRA Hotline, toll-free at (800) 424-9346. For further information on the specific air standards and test method promulgated by this action, contact Ms. Michele Aston, Emission Standards Division (MD-13), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-2363.

SUPPLEMENTARY INFORMATION: The information presented in this preamble is organized as follows:

I. Compliance Dates

The final rule promulgated today establishes additional air standards for TSDF owners and operators subject to 40 CFR part 264 or 40 CFR part 265. In addition, this rule amends the conditions for hazardous waste generators accumulating waste on-site in RCRA permitexempt tanks and containers pursuant to 40 CFR 262.34(a) to include air emission control requirements. All of these rule requirements are effective as of June 5, 1995. All hazardous waste placed in the affected tanks, surface impoundments, containers, and other affected units on and after this date must be managed in accordance with the requirements of the final rule. This includes implementing the required air emission controls on an affected unit or performing the required waste determinations and recordkeeping to indicate that the affected unit is exempted from these air emission control requirements. Under circumstances when the air emission control equipment required to comply with the rule cannot be operational at an existing TSDF by June 5, 1995, an implementation schedule for installation of the equipment must be developed and placed in the facility operating records no later than June 5, 1995. In such cases, the facility owner or operator must have all air emission controls required by the final rule in operation no later than December 8, 1997.
Today's action amends 40 CFR 270.4 to require that owners and operators of TSDF for which a final permit has been issued by the EPA prior to June 5, 1995 must comply with the air emission control requirements for interim-status TSDF under 40 CFR 265 subparts AA, BB, and CC until the facility's permit is reviewed or reissued by the EPA. The EPA's rationale for adopting this implementation practice for today's rulemaking is explained in section VI.E of this preamble. For tanks in which waste stabilization activities (sometimes referred to as waste fixation) are performed as of December 6, 1994, be the effective date of the final rules will December 6, 1995. As of the extended effective date for stabilization tanks, each TSDF owner or operator and each hazardous waste generator subject to the final rules must either install and operate the specified air emission control requirements on all affected tanks used for stabilization, or begin performing the specified waste determinations and recordkeeping to indicate that a stabilization tank is exempted from these requirements. Under circumstances where required air emission control equipment cannot be operational on stabilization tanks by December 6, 1995, an implementation schedule for installation of the required air emission controls must be developed and placed in the facility operating records no later than December 6, 1995.
In such cases, for stabilization tanks, the facility must have all air emission controls required by the final rules in operation no later than June 8, 1998.

II. Summary of Rule Changes Since Proposal

The EPA proposed the rule on July 22, 1991 (refer to 56 FR 33491). Based on public comments received by the EPA at proposal as well as the EPA's evaluation of additional information obtained after proposal, certain requirements of the rulemaking have been changed from those proposed. The major changes affect provisions establishing the rule applicability, the procedures for determining the average volatile organic concentration of a waste, and the air emission control requirements for containers. In addition, the EPA has made many changes to the specific regulatory text to clarify the EPA's intent in the application and implementation of the rule requirements. The substantive changes to the rulemaking since proposal are summarized below. A summary of the requirements of the rule as promulgated is presented in section VII of this preamble.

A. TSDF Tanks, Surface Impoundments, and Containers

A new subpart CC is added by today's action to both 40 CFR parts 264 and

265. Subpart CC under 40 CFR part 264 applies to owners and operators of permitted TSDF while subpart CC under 40 CFR part 265 applies to owners and operators of interim-status TSDF. All changes since proposal to subpart CC in 40 CFR part 264 and to subpart CC in 40 CFR part 265 are identical with the exception of changes to the rule reporting requirements. There are no reporting requirements under 40 CFR 265 subpart CC for owners and operators of interim-status TSDF. Hereafter for convenience in this preamble, the term ``subpart CC standards'' is used collectively to refer to both subpart CC in 40 CFR part 264 and subpart CC in 40 CFR part 265. The compliance time for the subpart CC standards has been revised since proposal to allow up to an additional 30 months after June 5, 1995 to install and begin operation of air emission control equipment required by the rule provided that the owner or operator develops and places in the facility operating records by this date an implementation schedule for installation of the equipment. Compliance dates and implementation requirements for the final rule are explained in sections I and VIII of this preamble.

1. Applicability
   The applicability of the subpart CC standards has been revised since proposal to specifically exempt from the rule certain tanks surface impoundments, and containers in which the owner or operator has stopped adding hazardous waste. The subpart CC standards do not apply to a tank, surface impoundment, or container that meets either of the following conditions:
   (1) No hazardous waste is added to the waste management unit on or after June 5, 1995 (see generally 55 FR 39409, September 27, 1990); or
   (2) Addition to hazardous waste to the waste management unit is stopped and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan. In addition, the applicability of the subpart CC standards has been changed such that the rule is not applicable to any container having a design capacity less than 0.1 m\3\ (approximately 26 gallons) regardless of the organic content of the hazardous waste handled in the container. In response to comments on the proposed rule, the EPA reviewed the types of small containers commonly used to accumulate and transfer hazardous waste. Considering the small quantity of hazardous waste handled in a sample collection vial, safety can, disposal can, and other types of small containers and the short periods of time that the waste normally remains in one of these containers, the EPA concluded that existing rules for containers having a design capacity less than 0.1 m\3\ are sufficient to protect human health and the environment.
   Finally, the EPA has decided to temporarily defer application of the subpart CC standards to tanks, surface impoundments, and containers managing hazardous wastes under certain special circumstances. For now, the EPA is deferring application of the subpart CC standards to waste management units that are used solely to treat or store hazardous wastes generated on-site from remedial activities required under RCRA corrective action or CERCLA response authorities (or similar State remediation authorities). Also, the EPA is deferring application of the subpart CC standards to waste management units that are used solely to manage radioactive mixed wastes. The EPA's rationale for these deferrals is explained in section VIII.A.1 of this preamble.
2. General Standards
   For each tank, surface impoundment, or container to which the subpart CC standards apply (referred to here as an ``affected unit''), the owner or operator is required to use the air emission controls specified in the rule except when the hazardous waste placed in an affected unit meets certain conditions. As explained in the following paragraphs, the conditions under which an affected unit is exempted from the air emission control requirements of the subpart CC standards have been revised since proposal.
   a. Waste volatile organic concentration exemption. Under the final

subpart CC standards, an affected unit is exempt from the air emission control requirements of the rule if all hazardous waste placed in the unit is determined to have an average volatile organic concentration less than 100 parts per million by weight (ppmw) based on the organic composition of the hazardous waste at the point of waste origination. This waste volatile organic concentration limit incorporates several revisions that have been made by the EPA since proposal. First, the format for the limit has been changed to be the average volatile organic concentration of the hazardous waste on a massweighted basis during normal operating conditions for the source or process generating the waste (in contrast to the proposed format of the maximum volatile organic concentration for the hazardous waste never to be exceeded). Averaging periods up to 1 year in duration are allowed for each individual waste stream under the final rule. The procedures for determining the average volatile organic concentration of a waste are explained further under ``Waste Determination Procedures'' in this section and in section VII.A.3 of this preamble. Second, determination of the volatile organic concentration of the waste under the final rule is based on the organic composition of the waste at the ``point of waste origination'' (instead of the ``point of waste generation'' as proposed). The ``point of waste origination'' is defined in the final rule with respect to the point where the TSDF owner or operator first has possession of a hazardous waste. When the TSDF owner or operator is the generator of the hazardous waste, the ``point of waste origination'' means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in 40 CFR part 261. In this case, this term is being used in a similar manner to the use of the term ``point of generation'' in waste operations air standards established under authority of the Clean Air Act in 40 CFR parts 60, 61, and 63 of this chapter. When neither the TSDF owner nor operator is the generator of the hazardous waste, the ``point of waste origination'' means the point where the owner or operator accepts delivery or takes possession of the hazardous waste.

Finally, the EPA revised the impact analysis used for this rulemaking after proposal to incorporate additional TSDF industry data. An opportunity for public comment on this analysis was provided by the EPA (refer to sections III.B and VI.B of this preamble). Based on the revised analysis results, the EPA selected a new value for the volatile organic concentration limit. Section V.C of this preamble presents the rationale for the selection of the control option used as the basis for the final rule.

b. Treated hazardous waste exemption. Under the subpart CC standards, each affected tank, surface impoundment, and container that manages hazardous waste having an average volatile organic concentration equal to or greater than 100 ppmw, as determined by the procedures specified in the rule, is required to use air emission controls in accordance with the rule requirements. The owner or operator must install and operate the specified air emission controls on every affected tank, surface impoundment, and container used in the waste management sequence from the point of waste origination (as applies to the specific hazardous waste stream) through the point where the organics in the waste are removed or destroyed by a process in accordance with the requirements of the rule. If a particular hazardous waste is not treated to meet these requirements, then all affected units at the TSDF used in the waste management sequence for this hazardous waste are required to use the air emission controls specified by the subpart CC standards.

If the hazardous waste is treated to remove or destroy the organics in the waste by a process that meets or exceeds a minimum level of performance as specified in the rule, then affected units at the TSDF operated downstream of the treatment process in the waste management sequence for this hazardous waste are not required to use the air

emission controls specified by the subpart CC standards. It is important to emphasize that tanks, surface impoundments, and containers (subject to the rule) in which the treatment process is conducted are required to use the applicable air emission controls specified by the subpart CC standards with the exception of certain tanks and surface impoundments used for active biological treatment of hazardous waste and achieving the performance requirements specified in the rule (this exception is explained further in section VII.A.4 of this preamble). The conditions under which a treated hazardous waste no longer is required to be managed in affected units using air emission controls under the subpart CC standards have been revised and expanded since proposal to include many alternatives from which an owner or operator can choose one with which to comply. The final subpart CC standards allow an owner or operator to use any type of treatment process that can continuously achieve one of the specified sets of performance conditions. These conditions have been changed to include: (1) The average volatile organic concentration of the hazardous waste exiting the process is less than 100 ppmw (except for certain site-specific situations where multiple hazardous waste streams are treated by a single process in which case a volatile organic concentration limit for the waste exiting the process is established by the rule procedures at a value lower than 100 ppmw); (2) The organic reduction efficiency for a process treating multiple hazardous waste streams is equal to or greater than 95 percent, and the average volatile organic concentration of the hazardous waste exiting the treatment process is less than 50 ppmw; or (3) The actual organic mass removal rate for the process is greater than the required mass removal rate established for the process. The alternative treatment process performance requirements specified in the final subpart CC standards are discussed further in section VII.A.2 of this preamble.

The proposed explicit exemption for hazardous wastes complying with the land disposal restriction (LDR) treatment standards is not included in the final subpart CC standards. The EPA concluded that the expanded number of alternatives for treated hazardous waste and other provisions added to the final rule provide a reasonable regulatory mechanism by which a TSDF owner or operator can determine whether a hazardous waste complying with the LDR treatment standards is exempted from being managed in accordance with the air emission control requirements of the subpart CC standards.

3. Waste Determination Procedures

As already noted, the procedures that a TSDF owner or operator may use to determine the volatile organic concentration of a hazardous waste have been revised for the final subpart CC standards. For a case when direct measurement is chosen for determining the volatile organic concentration of a hazardous waste, the proposed statistical calculation procedure using Method 25D results is not included in the final subpart CC standards. Instead, procedures are specified in the final rule to compute the mass-weighted average volatile organic concentration of a hazardous waste using Method 25D results for waste generated as part of a continuous process and for waste generated as part of a batch process. Under circumstances when the same batch process is performed repeatedly but not necessarily continuously, the final rule allows the owner or operator to determine the average volatile organic concentration of the waste from this process by averaging results for one or more representative waste batches generated by the process. In all cases, a sufficient number of waste samples for analysis (with a minimum of four samples) must be collected to be representative of the normal range of the operating conditions for the source or process generating the hazardous waste. Normal operating conditions for the source or process generating the waste include cyclic process operations such as startup and shutdown. Process malfunctions, maintenance activities, or equipment cleaning

are not considered to be normal operating conditions for the purpose of determining the average volatile organic concentration of a waste. These waste determination procedures are discussed further in section VII.A.3 of this preamble.
The proposed explicit requirements for determining the volatile organic concentration of a hazardous waste using information in a waste certification notice prepared by the waste generator are not included in the final rule. Instead, for hazardous waste that is not generated by the TSDF owner or operator (i.e., waste shipped to the TSDF from off-site sources under different ownership), the final rule allows the TSDF owner or operator to determine the waste volatile organic concentration by either testing the waste when he or she accepts delivery of the hazardous waste or using appropriate information about the waste composition that is prepared by the generator of the waste. The generator prepared information can be included in manifests, shipping papers, or waste certification notices accompanying the waste shipment, as agreed upon between the waste generator and the TSDF owner or operator.

4. Tank Standards
Several changes to the tank standards have been made since proposal. An exemption from the tank standards has been added for those affected tanks used for biological treatment of a hazardous waste in accordance with requirements specified in the rule. Changes have been made to clarify the regulatory text regarding the tank cover design and operating requirements. Also, the conditions have been clarified that must be met for a particular tank to use a fixed-roof type cover without any additional controls in accordance with the subpart CC standards. Finally, provisions have been added to the rule to address those special situations in which emergency venting of the tank or the air emission controls installed on the tank is necessary for safety.
5. Surface Impoundment Standards
Changes to the surface impoundments standards have been made to be consistent with the changes to the tank standards as applicable.
6. Container Standards
Several changes have been made to the container standards since proposal in addition to limiting the applicability of the subpart CC standards to containers having a design capacity equal to or greater than 0.1 m\3\. The air emission control requirements for affected containers have been revised to provide several air emission control alternatives from which an owner or operator may choose one with which to comply. For containers having a design capacity less than or equal to 0.46 m\3\ (approximately 119 gallons), an owner or operator may place the hazardous waste in drums that meet U.S. Department of Transportation (DOT) specifications under 49 CFR part 178 without any additional testing, inspection, or monitoring requirements. An owner or operator is also allowed under the final rule to place the hazardous waste in tank trucks and tank railcars that are annually demonstrated to be vapor tight using Method 27 in 40 CFR part 60, appendix A without any additional testing, inspection, or monitoring requirements. The requirements for waste transfer operations for containers have been revised under the final subpart CC standards. Submerged-fill of hazardous waste that is loaded into containers by pumping is required only when transferring the waste into containers having a design capacity greater than 0.46 m\3\. Submerged fill of the waste is not required when filling smaller size containers such as 55-gallon drums. The air emission control requirements for owners and operators treating hazardous waste in open containers have been revised. Whenever it is necessary for the container to be open during the treatment process, the container is required to be located in an enclosure connected to a closed-vent system with an operating organic emission control device. The final subpart CC standards include specific enclosure design and operation requirements which allow the enclosure to have permanent openings for worker access. Finally, the

container standards have been revised to be consistent with the safety venting provisions added to the tank and surface impoundment standards.

7. Closed-Vent System and Control Device Standards The design and operating requirements for closed-vent systems and control devices have been changed to be consistent with those requirements already applicable to TSDF owners and operators under subpart AA in 40 CFR parts 264 and 265. The subpart AA standards have been in effect since 1990 and establish RCRA air standards to control organic emissions from process vents on certain types of hazardous waste treatment units.
8. Inspection and Monitoring Requirements The inspection and monitoring requirements under the subpart CC standards have been revised since proposal. The requirements for inspection and monitoring of closed-vent systems and control devices have been changed to be identical to the inspection and monitoring requirements under subpart AA in 40 CFR parts 264 and 265. The required interval for the visual inspection of covers installed on tanks, surface impoundments, and certain containers has been changed to once every 6 months. After the initial cover inspection and monitoring for detectable organic emissions is completed, the owner or operator is only required to inspect and monitor those cover openings that have been opened (i.e., have not continuously remained in a closed, sealed position) since the last visual inspection and monitoring. Special inspection and monitoring provisions have been added for cover fittings that are unsafe or difficult, as defined in the rule, for facility personnel to inspect and monitor.
   The subpart CC standards have been changed to allow leak repair on tank and surface impoundment covers to be delayed beyond 15 calendar days if both of the following conditions occur: (1) Repair of the leak requires first emptying the contents of the tank or surface impoundment; and (2) temporary removal of the tank or surface impoundment from service will result in the unscheduled cessation of production from the process unit, or operation of the waste management unit, that is generating the hazardous waste managed in the tank or surface impoundment. Repair of a leak must be performed at the next time the process, system, or waste management unit that is generating the hazardous waste managed in the tank or surface impoundment stops operation for any reason.
9. Recordkeeping Requirements
   The subpart CC standards have been changed to require cover design documentation only for floating roof-type tank covers, surface impoundment covers, and enclosures used for control of air emissions from containers. Also, the recordkeeping requirements have been revised as appropriate to address the changes to the final rule described previously in this section of the preamble.
10. Reporting Requirements
    The reporting requirements in the subpart CC standards are the same as proposed with one exception. The time interval within which TSDF owners and operators subject to the subpart CC standards under 40 CFR part 264 must report to the Regional Administrator all circumstances resulting in noncompliance with the applicable conditions has been changed to within 15 calendar days of the time that an owner or operator becomes aware of the circumstances.

B. TSDF Miscellaneous Units

Today's action amends 40 CFR 264.601 by adding to the permit terms and provisions required for RCRA permitting of a miscellaneous unit the appropriate air emission control requirements in 40 CFR part 264, subparts AA, BB, and CC. This amendment is the same as proposed.

C. Generator 90-Day Tanks and Containers

The conditions with which a hazardous waste generator must comply, pursuant to 40 CFR 262.34(a), to exempt tanks and containers accumulating hazardous waste on-site for no more than 90 days from the RCRA subtitle C permitting requirements are amended by today's action to include compliance with the air emission control requirements of 40 CFR part 265, subparts AA, BB, and CC. This amendment is the same as proposed.

D. Other RCRA Regulatory Actions

The EPA proposed several amendments to existing RCRA air standards. One amendment proposed adding requirements for the management of spent carbon removed from a carbon adsorption system to the closed-vent system and control device standards under 40 CFR part 264, subparts AA and BB, and 40 CFR part 265, subparts AA and BB. The final amendment has been revised to allow the owner or operator the additional option of burning the spent carbon in a boiler or industrial furnace that is permitted under subpart H of 40 CFR part 266. A second amendment promulgated today updates the leak detection monitoring provisions under 40 CFR part 264, subparts AA and BB, and 40 CFR part 265, subparts AA and BB for closed-vent systems to be consistent with other air standards recently promulgated by the EPA. Under this amendment, annual leak detection monitoring is not required for those closed-vent system components which continuously operate in vacuum service or those closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe, a bolted and gasketed pipe flange).

E. Test Methods

As part of this rulemaking, the EPA proposed two new reference test methods (Method 25D and Method 25E) to be added to 40 CFR part 60, Appendix A. Method 25D is a test method for the determination of the volatile organic concentration of waste materials. Since proposal, the EPA decided it is also appropriate to use method 25D to implement other EPA air standards being developed under authority of the Clean Air Act. The promulgation of some of these other air standards prior to today's action required the EPA to promulgate Method 25D in a separate rulemaking (refer to 59 FR 19402, April 22, 1994). Comments and responses relevant to Method 25D for this rulemaking are in the BID for the final rule and in the dockets pertaining to this rulemaking. Method 25E is being promulgated today. Method 25E is the test method for determining the organic vapor pressure of wastes. The sampling requirements for Method 25E have been revised since proposal to provide for sampling of the waste in a tank.

III. Summary of Final Rule Impacts

The EPA estimates that implementation of the subpart CC standards will reduce nationwide organic emissions from TSDF tanks, surface impoundments, and containers by approximately 970,000 Mg/yr. In addition, the EPA estimates that nationwide organic emissions from 90- day tanks and containers will be reduced by approximately 73,000 Mg/yr. Control of organic air emissions addresses many air quality problems including ambient ozone formation, adverse human health effects from inhalation of air toxics, and, to a lesser extent, depletion of stratospheric ozone. Ambient ozone concentrations exceed the National Ambient Air Quality Standards (NAAQS) in many metropolitan areas throughout the United States. Thus, the rule promulgated today will contribute to progress in attaining the NAAQS for ozone in nonattainment areas and also in preventing significant deterioration of the air quality in those areas of the United States currently in attainment with the NAAQS for ozone.
Today's action will also significantly reduce the risk to the public of contracting cancer posed by exposure to toxic constituents contained in the organic emissions from hazardous waste management activities. The cancer

risk to the entire exposed population nationwide (i.e., annual cancer incidence) from exposure to organic emissions from TSDF is estimated by the EPA to be reduced from approximately 48 cases per year to a level of 2 cases per year. Annual cancer incidence as a result of exposure to organic emissions from 90-day tanks and containers is estimated by the EPA to be reduced from approximately four cases per year to less than one case per year. Maximum individual risk (MIR) is a measure of the added probability of a person contracting cancer if exposed continuously over a 70-year period to the highest annual average ambient concentration of the air toxics emitted from a TSDF site. There are approximately 2,300 TSDF locations in the United States. The MIR for all but approximately 20 of these facilities is estimated by the EPA to be reduced by implementation of the subpart CC standards to a level that is less than 1 x 10<difference>\4\. The target MIR levels historically used by the EPA for other promulgated RCRA standards range from 1 x 10<difference>\4\ to 1 x 10<difference>\6\. Because the MIR values for a few TSDF are estimated to remain higher than the historical RCRA target, the EPA is continuing to evaluate the waste management practices and the individual chemical compounds composing the organic emissions at these TSDF. Following this evaluation, the EPA will determine what other actions are necessary to attain the health-based goals of RCRA section 3004(n). The omnibus permitting authority in section 3005(c)(3) can be invoked to supplement or add to the requirements in today's rule, should the rule be determined to be insufficient to assure protection of human health and the environment at a particular facility.

The total nationwide capital investment cost to TSDF owners and operators to implement the subpart CC standards is estimated by the EPA to be approximately $290 million. The total nationwide annual cost for these standards is estimated to be approximately $110 million per year. The total nationwide capital costs to hazardous waste generators of installing the required air emission controls on 90-day tanks and containers is estimated by the EPA to be approximately $23 million. Total nationwide annual cost for the 90-day tank and container controls is estimated to be approximately $7 million. The EPA concludes that the rule promulgated today will not have a significant economic impact on hazardous waste generators or TSDF owners and operators. Prices for commercial hazardous waste management services are estimated by the EPA to increase by less than 1 percent on a nationwide annualized basis. The quantity of hazardous waste handled by commercial hazardous waste management companies is projected to be reduced by less than 1 percent on a nationwide annualized basis. Few, if any, facility closures are anticipated. Job losses in the hazardous waste industry are estimated to be less than 1.5 percent. Furthermore, this impact on employment does not reflect positive employment effects on industries producing the air emission control equipment that will be used to comply with the rule. No significant impacts are expected on small businesses.

IV. Background

A. Implementation of RCRA Section 3004(n)

The Hazardous and Solid Waste Amendments of 1984 added section 3004(n) to RCRA. Section 3004(n) directs the EPA to promulgate regulations for the monitoring and control of air emissions from TSDF as may be necessary to protect human health and the environment. The EPA completed the first phase of its regulatory development program to implement this Congressional directive with the promulgation of RCRA air standards that control organic emissions vented from certain hazardous waste treatment processes (i.e., distillation, fractionation, thin-film evaporation, solvent extraction, steam stripping, and air stripping) as well as from leaks in certain ancillary equipment used for hazardous waste management processes (55 FR 25454, June 21, 1990). Today's action completes the second phase of the EPA's regulatory development program with the promulgation of RCRA air standards for tanks, surface impoundments, containers, and miscellaneous

units operated at TSDF. This rulemaking also adds air emission control requirements for certain hazardous waste generators accumulating waste on-site in RCRA permit-exempt tanks and containers. As described at proposal (56 FR 33496, July 22, 1991), the EPA decided in both the first and second phases to develop standards that control organic emissions as a class (as opposed to constituent-byconstituent). Implementation of these nationwide standards will achieve significant organic emission and cancer risk reductions. However, the EPA estimates the cancer risk at a few TSDF after implementation of these nationwide standards to remain at a level that is higher than the range of target risk levels for other promulgated RCRA standards (refer to section V.C of this preamble.) The third phase of this regulatory development program is to determine what other actions are necessary to attain the health-based goals of RCRA section 3004(n). To make this determination, the EPA is evaluating hazardous waste operations at those individual TSDF estimated to have MIR values greater than the historical RCRA target MIR levels.

B. Public Participation in Rulemaking

The EPA is promulgating today's final rule after careful consideration of public comments on the proposed rule (56 FR 33491, July 22, 1991). The preamble to the proposed rule discussed the availability of the background information document (BID) pertaining to the health effects of organic emissions from hazardous waste TSDF using tanks, surface impoundments, and containers. The EPA mailed copies of the Federal Register notice and the BID for the proposed rule to industry representatives, environmental groups, and State and Federal agencies.
The EPA solicited comments from the public at the time of proposal and provided a 90-day comment period, from July 22, 1991 to October 21, 1991, for the public to prepare and submit written comments on the proposed rule. In addition, the EPA provided the opportunity for a public hearing to allow interested persons to present oral comments to the EPA concerning the proposed rule. However, no one requested that the EPA hold a public hearing on the proposed rule. The EPA did receive written comments from more than 80 companies, industrial trade associations, environmental groups, and State and Federal agencies. The BID for the final rule summarizes all of the comments on the proposed rule and presents the EPA's response to each of the comments. Section VI of this preamble presents responses to selected major comments. Following the EPA's review of public comments received on the proposed rule, the EPA revised the impact analysis used for its final determination regarding today's rulemaking. This analysis used additional TSDF industry data obtained by the EPA. The EPA provided an opportunity for public comment on the additional TSDF industry data used for the impact modeling revisions. A Federal Register Notice of Data Availability (57 FR 43171, September 18, 1992) listed these additional data. The EPA also made the data available for public inspection at the EPA RCRA Docket Office. A 30-day comment period, from September 18, 1992 to October 19, 1992, provided the public the opportunity to comment on the additional data. The EPA received comments on the additional data from one industrial trade association. Section VI.B of this preamble presents a summary of these comments.

C. Relationship to Other RCRA Standards

1. RCRA Rules for TSDF Owners and Operators Today's action establishes organic air emission control requirements for TSDF tanks, surface impoundments, and certain containers. Other types of waste management units operated at TSDF may be subject to these air emission control requirements as follows. a. Miscellaneous units. Under RCRA in 40 CFR 260.10, the EPA defines a ``miscellaneous unit'' as a hazardous waste management unit where waste is treated, stored, or disposed of that is not a container, tank, surface impoundment, wastepile, land treatment unit, landfill, incinerator, boiler, industrial furnace, underground

injection well with appropriate technical standards under 40 CFR part 146, or a unit eligible for a research, development, and demonstration permit under 40 CFR 270.65. The EPA has established provisions under 40 CFR part 264, subpart X to allow TSDF owners and operators to obtain permits to operate miscellaneous units. The EPA permits miscellaneous units on a case-by-case basis with terms and provisions as needed to protect public health and the environment through generic performance standards specified in 40 CFR 264.601.

Today's rule amends Sec. 264.601 to state that the air emission controls required by the standards under 40 CFR 264 subparts AA, BB, and CC are among the ``appropriate'' controls a permit writer may require for a miscellaneous unit ``to ensure protection of human health and the environment.'' Applicability of today's rule to miscellaneous units is discussed further in Section VII.B of this preamble. b. Land disposal restrictions. The RCRA LDR treatment standards under 40 CFR part 268 require TSDF owners and operators to treat hazardous waste to reduce the toxicity or mobility of specific constituents in the waste before the TSDF owner or operator can place the waste in a land disposal unit. Under certain conditions, the EPA may grant a TSDF owner or operator permission to land dispose a hazardous waste that does not meet the LDR treatment standards in a particular land treatment unit, landfill, wastepile, or surface impoundment. This action is referred to as the ``no migration'' variance. To obtain a ``no migration'' variance, a TSDF owner or operator must demonstrate in a petition to the EPA that, with a reasonable degree of certainty, there will be no migration of hazardous constituents from the disposal unit for as long as the waste remains hazardous.

On August 11, 1992, the EPA proposed its interpretation of the term ``no migration'', the procedures and substantive requirements for submitting to the EPA a petition to demonstrate ``no migration'' from a land disposal unit, and the EPA's criteria for evaluating the petitions (57 FR 35940). This proposal includes amending 40 CFR 268.6 to add as a condition for receiving a no migration variance that the applicant demonstrate that the subject land disposal unit complies with the applicable air emission standards the EPA has developed under 40 CFR parts 264 and 265.

c. Corrective action requirements. The EPA is temporarily deferring applicability of the subpart CC standards to any tank, surface impoundment, or container which is used solely for on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under the RCRA corrective action authorities of 3004(u), 3004(v) or 3008(h). The EPA's rationale for this temporary deferral is explained in section VII.A.1 of this preamble.

2. RCRA Rules for Hazardous Waste Generators Hazardous waste generators who accumulate waste on-site in containers or tanks for short periods of time can elect to be exempted from RCRA subtitle C permitting requirements provided that a generator complies with provisions specified in 40 CFR 262.34. The EPA allows a generator who generates 1,000 kilograms or more of hazardous waste per month to accumulate the hazardous waste on-site for up to 90 days in tanks and containers without a permit provided the generator complies with certain conditions specified in 40 CFR 262.34(a). These conditions include compliance with the requirements of 40 CFR part 265, subpart I when the waste is accumulated in a container and 40 CFR part 265, subpart J when the waste is accumulate in a tank. Tanks and containers used to accumulate hazardous waste on-site for 90 days or less pursuant to the conditions of 40 CFR 262.34(a) are hereafter referred to in this preamble as ``90-day tanks and containers.'' The rule promulgated today only amends the RCRA permit exemption requirements for generators operating 90-day tanks and containers. This action does not affect the existing RCRA permit exemption requirements for generators

operating tanks and containers for on-site accumulation of hazardous waste in accordance with the provisions of 40 CFR 262.34 (d) or (e). Applicability of today's rule to 90-day tanks and containers is discussed further in Section VI.D of this preamble.

3. RCRA Rules for Hazardous Waste Transporters Regulations in 40 CFR part 263 establish standards that apply to persons transporting hazardous waste within the United States if the transportation requires a manifest under 40 CFR part 262. Today's action does not change the RCRA rules under 40 CFR part 263. However, the air standards promulgated today may indirectly affect transporters accepting certain organic-containing hazardous wastes from TSDF owners and operators. The final subpart CC standards require that TSDF owners and operators only load these hazardous wastes into containers (including tank truck, railcars, and roll-off boxes) that use air emission controls as specified in the rule. Consequently, to continue accepting hazardous waste from a TSDF owner or operator, in some cases, transporters may need to ensure that their containers meet the subpart CC standards.

D. Relationship to CERCLA Standards

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), authorizes the EPA to undertake removal and remedial actions to clean up hazardous substance releases. Under CERCLA, on-site remedial actions are required to comply with the requirement of Federal and more stringent State environmental laws that are applicable or relevant and appropriate (ARAR) to the remedial action unless certain statutory waivers apply. In addition, the National Oil and Hazardous Substances Contingency Plan (NCP) provides that removal actions shall attain ARAR to the extent practicable considering the exigencies of the situation. [40 CFR 300.415(i)]. As explained in section VII.A.1 of this preamble, the EPA has decided to temporarily defer application of the subpart CC standards to tanks, containers and surface impoundments which are being used to treat or store hazardous wastes containing organics generated on-site from remedial activities required under RCRA corrective action or CERCLA response authorities, or similar State remediation authorities, provided that the wastes are managed in units that do not also manage other hazardous waste containing organics. However, after the temporary deferral has been lifted, today's rules may be considered an ARAR for certain types of remedial and removal actions. A requirement under a Federal or State environmental law may be either ``applicable'' or ``relevant and appropriate,'' but not both, to a remedial or removal action conducted at a CERCLA site. An ARAR is identified on a site-specific basis in a two-part analysis that considers first, whether a given requirement is applicable; then, if it is not applicable, whether it is nevertheless both relevant and appropriate. ``Applicable'' requirements as defined in the NCP are those that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstances found at a CERCLA site. [40 CFR 300.415(i)]. ``Relevant and appropriate'' requirements are those that, while not ``applicable'' at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. [40 CFR 300.415(i)]. Some waste management activities used for remedial and removal actions of hazardous organic substances require the use of tanks, surface impoundments, and containers. For example, a TSDF may treat hazardous organic liquids and surface water contaminated with hazardous organic waste on site using destruction, detoxification, or organic removal processes that occur in tanks or surface impoundments. The facility may perform on-site solvent washing of soils contaminated with hazardous organic sludges in a tank or container. At a TSDF, hazardous waste in leaking drums may be repacked in new containers for treatment and disposal at another site.

Once today's deferral is lifted, the air emission control requirements of the subpart CC standards are likely to be ``applicable'' to on-site

remedial and removal actions that use tanks, surface impoundments, and containers to manage substances exhibiting characteristics or listed under RCRA as hazardous waste and having an average volatile organic concentration equal to or greater than 100 ppmw. In other cases, the standards may be ``relevant and appropriate''; this determination must be made on a site specific basis.
On the other hand, the subpart CC standards do not specify control requirements for wastepiles, landfills, and land treatment units that manage hazardous wastes at TSDF. Therefore, the standards are not likely to be ``applicable'' to excavation, capping of wastes, land treatment, land farming, in situ treatment activities, and other activities involving wastepiles and landfills at CERCLA sites. Although in most cases the EPA does not expect the subpart CC standards to be ``relevant and appropriate'' to these types of units at CERCLA sites, remedial and removal actions performed in wastepiles may in some cases be similar in nature and scale to the waste management activities performed in surface impoundments; and waste stabilization may involve the basic process and air emission mechanism regardless of whether the mixing of the waste and binder is conducted in a tank, surface impoundment, container, wastepile, landfill, or land treatment unit. Thus, in some cases the subpart CC standards may be ``relevant and appropriate'' for such actions; this determination must be made on a site specific basis.

E. Relationship to Clean Air Act Standards

Section 112 of the Clean Air Act (CAA) regulates stationary sources of hazardous air pollutants (HAP). This section was comprehensively amended under Title III of the 1990 Amendments to the CAA. Under the amended CAA section 112(b), Congress listed 189 chemicals, compounds, or groups of chemicals as HAP. The EPA is directed by the CAA to regulate HAP emissions from stationary sources by establishing national emission standards for hazardous air pollutants (NESHAP). The 1990 Amendments to the CAA required the EPA to develop and publish a list of source categories that emit HAP for which NESHAP will be developed. The EPA published its initial list of NESHAP source categories on July 16, 1992 (refer to 57 FR 31576). Many industrial sectors that may manage hazardous wastes are listed as specific NESHAP source categories. Consequently, facilities at which hazardous wastes are managed may be subject to both NESHAP and the RCRA air standards under 40 CFR part 264 and 265. At these facilities, some waste management units would be subject to either air emission control requirements under the NESHAP or the air emission control requirements under the RCRA air standards. However, in certain situations, some waste management units would be subject to air emission control requirements under both sets of rules.
The CAA requires that the requirements of standards developed under the Act be consistent, but avoid duplication, with requirements of standards developed under RCRA. Consequently, the EPA is taking into account the air standards promulgated under RCRA section 3004(n) in determining the requirements for NESHAP affecting air emission sources at which hazardous waste could be managed.

F. Relationship to Nuclear Regulatory Commission Standards

Radioactive mixed wastes are wastes that contain radioactive materials as well as materials listed or identified as hazardous under RCRA. Radioactive mixed wastes must be managed in accordance with RCRA regulations, in addition, these wastes also are subject to standards administered by the Nuclear Regulatory Commission (NRC) under the Atomic Energy Act and Nuclear Waste Policy Act of 1982 that address the safe handling and disposal of radioactive waste. The EPA has previously stated its general position that the management of radioactive mixed waste at TSDF is subject to regulation under subtitle C of RCRA (51 FR 24504, July 3, 1986; 53 FR 37045, September 23, 1988). In developing the RCRA standards applicable to radioactive mixed

wastes, the EPA considers the management practices required for these wastes to avoid inconsistencies between the EPA's hazardous waste management requirements and the NRC's radioactive waste management requirements. Furthermore, RCRA section 1006(a) precludes any solid or hazardous waste regulation by the EPA or a State that is ``inconsistent'' with the requirements of the Atomic Energy Act. Thus, in a case where the regulatory requirements for radioactive mixed waste are conflicting, the NRC requirement takes precedence over the RCRA requirement. Because of the potential that air emission control equipment required by the subpart CC standards promulgated today may conflict with certain radioactive waste management requirements under NRC standards, the EPA has decided to temporarily defer application of the subpart CC standards to tanks, containers, and surface impoundments which are being used solely to manage radioactive mixed wastes. This deferral is discussed further in section VII.A.1 of this preamble.

V. Basis for Final Rule

A. New Control Options

The EPA developed a national impacts model specific to the air emission sources affected by this rulemaking to compare the human health and environmental protection provided by the different air emission control options. Following proposal of the rule, the EPA revised this model to incorporate new information obtained by the EPA and to address public comments on the impact analysis methodology received at proposal. Section VI.B of this preamble presents a further discussion of the impact analysis revisions. At proposal, the EPA gave notice that consideration of new results from revisions to the national impacts analysis could lead to selection of any one of the control options considered at proposal or possibly a new control option (56 FR 33516). Upon reviewing preliminary results for the revised national impacts model, the EPA decided to expand the number of control options considered for the final rule. The EPA first performed a screening evaluation by using the revised national impacts model to estimate the nationwide organic emission and cancer incidence reductions for the original five control option configurations described at proposal (56 FR 33512), plus nine new control option configurations. The EPA included a summary of the impacts model results for these 14 control options in the information listed in the Notice of Data Availability (57 FR 43171) and made available for public inspection at the EPA RCRA Docket Office (refer to RCRA docket entry number F-92-CESA-00018). The EPA used the screening evaluation results to select a final group of control options selected for further analysis. The EPA eliminated a control option from further consideration if another one of the control options was estimated to provide the same level of nationwide organic emission or cancer incidence reduction but at a lower cost. This is the same control option selection approach the EPA used at proposal.
Based on the screening evaluation results, the EPA selected four control options for further analysis. In addition to the control option used as the basis for the proposed rule, the EPA also analyzed ``baseline'' impacts. These ``baseline'' impacts represent the estimated nationwide organic emissions and other impacts that would occur in the absence of implementing any of the control options. The final group of five control options (designated Options A through E) differ by the value used for the volatile organic concentration limit and the type of air emission controls used for surface impoundments. Option A requires air emission controls on all TSDF tanks, surface impoundments, and containers managing hazardous waste with any detectable volatile organic concentration as determined at the point where the waste is generated (i.e., a volatile organic concentration action level of 0 ppmw). Under Option A, tanks use a cover vented to a control device except for tanks handling certain hazardous wastes. Tanks in which the organic vapor pressure of the hazardous waste in the tank is less than 10.4 kPa (approximately 1.5 psi) may use a cover without additional

controls. All surface impoundments use a cover vented to a control device. Containers use cover and submerged fill for loading hazardous wastes into the containers. Option B requires air emission controls only on those TSDF tanks, surface impoundments, and containers used to manage hazardous wastes having a volatile organic concentration at the point where the waste is generated equal to or greater than 100 ppmw. The control requirements are the same as described for Option A with one exception; surface impoundments used for storage of hazardous waste and surface impoundments used for treatment of hazardous waste by a process not requiring aeration or agitation of the waste require covers only. Option C requires air emission controls only on those TSDF tanks, surface impoundments, and containers used to manage hazardous wastes having a volatile organic concentration at the point where the waste is generated greater than 500 ppmw. The air emission control requirements are the same as described for Option B. Option C is the same control option selected as the basis for the proposed rule. Option D requires air emission controls only on those TSDF tanks, surface impoundments, and containers used to manage hazardous wastes having a volatile organic concentration at the point where the waste is generated greater than 1,500 ppmw. The air emission control requirements are the same as described for Options B and C. Option E requires air emission controls only on those TSDF tanks, surface impoundments, and containers used to manage hazardous wastes having a volatile organic concentration at the point where the waste is generated greater than 3,000 ppmw. The air emission control requirements are the same as described for Options B, C, and D.

B. Control Option Impacts

The EPA estimated nationwide organic emission and cancer risk reductions that would be achieved if air standards were implemented for each of the five control options. The ``baseline'' nationwide organic emissions from TSDF are estimated to be approximately 1 million Mg/yr. The estimated nationwide TSDF organic emissions assuming implementation of the individual control options are 30,000 Mg/yr for Option A, 41,000 Mg/yr for Option B, 48,000 Mg/yr for Option C, 51,000 Mg/yr for Option D, and 90,000 Mg/yr for Option E.

To assess the risk of contracting cancer posed by exposure to organic emissions from TSDF, the EPA used two measures of health risk: Annual cancer incidence and maximum individual risk (MIR). The annual cancer incidence parameter represents an estimate of population risk and, as such, measures the aggregate risk to all people in the United States estimated to be living within the vicinity of TSDF. The MIR parameter represents the potential of air emissions from a particular source to cause cancer in the most exposed hypothetical individual under the assumptions used in the risk and exposure assessments. Estimation of these health risk parameters requires the EPA to make several critical assumptions regarding the TSDF plant configurations and operating practices, the composition of wastes managed at these TSDF, the cancer potency of the organics contained in these wastes, the emission of these organics to the atmosphere from TSDF sources, and the exposure of people living near TSDF to these air toxic emissions. The complex interrelationship of the various assumptions prevents the EPA from definitively characterizing the estimated health risk parameter values as being overestimates or underestimates. The EPA estimated annual cancer incidence for baseline and the five control options using the EPA's Human Exposure Model (HEM), the sitespecific cancer risk factors, and TSDF industry profile data bases. This risk value is based on the estimated number of excess cancers occurring in the nationwide population after a lifetime exposure (defined to be 70 years). For statistical convenience, the EPA divided the aggregate risk by 70 and expressed the risk as cancer incidence per year. The information provided in RCRA docket entry numbers F-92-CESAS 00014 and S00015 describes the estimation methodology in more detail. The EPA estimates baseline nationwide annual cancer incidence from exposure to TSDF organic emissions

to be 48 cases per year. The estimated nationwide TSDF cancer incidences, assuming implementation of the individual control options, are two cases per year for Option A, two cases per year for Option B, four cases per year for Option C, five cases per year for Option D, and nine cases per year for Option E. The EPA uses the MIR parameter for relative comparisons of pollutants, emission sources, and control alternatives. For the impact analysis, the EPA estimated the MIR parameter assuming that exposure of the individual to the ambient air toxic concentrations occurs for 24 hours per day for a lifetime of 70 years. The EPA realizes that this is a conservative assumption since most people do not spend their entire lives at one location. However, it is completely possible for an individual to live in the same place for his or her entire life. Furthermore, other uncertainties in the analysis could lead to underestimating the risk. For example, the actual exposed subpopulations (such as children or asthmatics) may be more sensitive to the emitted air toxics than the reference adult male for which the unit risk factor extrapolations are based. In addition, the analysis does not address potential indirect exposure pathways to humans, or potential harm to environmental receptors. The MIR parameter reflects the added probability that a person would contract cancer if exposed continuously over a 70-year period to the highest annual average ambient concentration of the air toxics emitted from a TSDF. Baseline MIR from exposure to TSDF organic emissions is estimated to be 3 x 10\2\. The estimated MIR's, assuming implementation of the individual control options, are: 4 x 10<SUP>-3 for Option A, 4 x 10<SUP>-3 for Option B, 2 x 10<SUP>-2 for Option C, 3 x 10<SUP>-2 for Option D, and 3 x 10<SUP>-2 for Option E. These MIR values apply only to the very few TSDF, of the approximately 2,300 TSDF operating in the United States, that are estimated to have the potential to cause the highest risk. The values do not represent actuarially measured risks nor do they apply to all TSDF in the United States. The EPA is not attempting to estimate any specific individual's potential of developing cancer. Finally, the EPA is not interpreting any of these estimates as indicators of the absolute risks of contracting cancer. Rather, the purpose of this cancer risk assessment, both for incidence and MIR, is to compare relative differences among the individual control options (i.e., ``degree'' of human health protection).

In addition to estimating organic emissions and cancer risk parameters, the national impacts model provides an estimate of the total nationwide capital costs and annual costs to the TSDF owners and operators to install and operate the air emission controls specified by each control option. For these nationwide cost estimates, the EPA assumed that, at every TSDF location, treatment of all hazardous wastes to remove or destroy the organics in the waste occurs as the last step prior to disposal of the waste. In actuality, the EPA expects that, at many TSDF, the owner or operator (after becoming aware of the air standards) will elect to treat waste at an earlier step in the waste management sequence. By treating organics in compliance with one of the waste treatment alternatives provided in final rule, the owner or operator could avoid the costs of installing and operating control equipment on the downstream tanks, surface impoundments, and containers.

Capital investment cost represents the cost to TSDF owners and operators to purchase and install the air emission control equipment. The estimated nationwide capital costs in 1986 dollars to implement the control options are: $520 million for Option A, $290 million for Option B, $240 million for Option C, $200 million for Option D, and $140 million for Option E. Annual cost represents the total cost to TSDF owners and operators each year to pay for operating and maintaining the air emission controls as well as to repay the capital investment for the air emission controls. The capital recovery was estimated using an interest rate of 10 percent applied over a period ranging from 10 to 20 years depending on the expected service life for each type of air emission control equipment. The estimated nationwide annual costs to implement the control options are: $190 million/yr for Option A, $110 million/yr for Option B, $90 million/yr for Option C, $80 million/yr for Option D, and $60 million/yr for Option E.

C. Selection Rationale

From Options A through E, the EPA selected one control option to serve as the basis for today's final rule. The EPA applied the same decision rationale used at proposal for this rulemaking (56 FR 33515- 33516, July 22, 1991) as well as for RCRA air standards promulgated under subparts AA and BB to 40 CFR parts 264 and 265 (refer to 55 FR 25470, June 21, 1990). This decision rationale requires the EPA to select, whenever possible, the level of control that provides an acceptable degree of protection of human health and the environment. If no control option is available to achieve acceptable levels of protection, the EPA's approach historically has considered cost under RCRA only for equally protective control options. All five of the control options considered for the final rule are estimated to achieve similar levels of substantial reductions in nationwide organic emissions from TSDF. The nationwide organic emission reductions for the control options are estimated to be approximately 970,000 Mg/yr for Option A, 960,000 Mg/yr for Option B, 950,000 Mg/yr for Option C, 950,000 Mg/yr for Option D, and 910,000 Mg/yr for Option E.

Both Options A and B are estimated to achieve the lowest cancer MIR and greatest reduction in annual cancer incidence of the five options. However, none of the control options reduces MIR to the target cancer risk levels used for other promulgated RCRA standards, which have been in the range of 1 x 10<SUP>-4 to 1 x 10<SUP>-6. The estimated MIR is an order-of-magnitude higher for Options C, D, and E (2 x 10<SUP>-2 for Option C, 3 x 10<SUP>-2 for Options C and D) compared to Options A and B (4 x 10<SUP>-3). Annual cancer incidence reductions estimated for Option C (44 cases per year), Option D (43 cases per year), and Option E (39 cases per year) are lower than the annual cancer incidence reductions estimated for Options A and B (46 cases per year). On the basis of the estimated annual cancer incidence and MIR, the EPA concluded that Options A and B are more protective of human health than Options C, D, or E. Therefore, the EPA eliminated Options C, D, and E from further consideration as the basis for the final rule.

Both Options A and B are estimated to achieve the same level of cancer risk reduction (MIR to 4 x 10<difference><SUP>3 and annual cancer incidence to two cases per year). Therefore, the EPA concluded that Options A and B are equally protective of human health and the environment (to the extent ascertainable by this modelling methodology). Historically under RCRA, the EPA has considered control option costs only to select between options estimated to achieve equivalent levels of protection. Therefore, to select between Options A and B, the EPA compared the estimated costs to implement each of the control options. Option B requires the use of air emission controls only on those TSDF tanks, surface impoundments, and containers used to manage hazardous wastes with a volatile organic concentration at the point where the waste is generated equal to or greater than 100 ppmw. Because TSDF owners and operators would need to install and operate air emission controls on fewer TSDF tanks, surface impoundments, and containers, Option B would be less expensive for the TSDF industry to implement than Option A. Therefore, the EPA selected Option B as the basis for the final rule.

While Option B does not achieve the target MIR levels historically used for other promulgated RCRA rules, Option B does achieve substantial reductions in cancer risk. The annual cancer incidence is estimated to be reduced by greater than 95 percent from the baseline value. Furthermore, the MIR for most of the 2,300 TSDF nationwide are estimated to achieve the target MIR levels. To address the remaining cancer risk at TSDF after implementation of the air standards promulgated today, the EPA is further evaluating the waste management practices and the specific chemical compounds composing the organic emissions from those individual TSDF for which the MIR values are estimated to be greater than the historical RCRA target MIR levels. Following this evaluation, the EPA will determine what other actions, such as the use of section 3005(c)(3) omnibus permitting authority or additional rulemaking, are necessary to attain the health-based goals of RCRA section

3004(n).

VI. Summary of Responses to Comments on Proposed Rule

All of the comments on the proposed rule and the EPA's response to each of these comments is presented in ``Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)--Background Information for Promulgated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers'', EPA document number EPA-453/R-94-076b (to obtain a copy of this document refer to the ADDRESSES section of this preamble). The EPA's responses to topics addressed by many of the commenters are summarized below.

A. Development of Air Standards Under RCRA

Comment: Many comments were received regarding the extent to which the congressional directive of RCRA section 3004(n) should be implemented using air standards established by the EPA under Clean Air Act (CAA) authority. Commenters stated the position that protection of human health and the environment from TSDF air emissions is most appropriately, effectively, and efficiently addressed by developing air standards under the CAA authority. Therefore, commenters believe that the EPA should make the determination that the requirements of RCRA section 3004(n) are best fulfilled by deferring to air standards established under CAA authority. Commenters stated that the air standards proposed by the EPA under authority of RCRA section 3004(n) are:
(1) Not needed because existing CAA programs adequately address the control of TSDF organic emissions;
(2) Duplicative or contradictory of new programs now being implemented by the EPA to control hazardous air pollutants as directed by section 112 of the CAA;
(3) Not in compliance with RCRA section 1006(b) regarding duplication or contradiction of CAA requirements; (4) Inconsistent with CAA programs that establish ozone precursor control requirements depending on the national ambient air quality standards attainment status of the region in which a source is located; (5) Inconsistent with the EPA's pollution prevention policy; (6) Contrary to the EPA's ``cluster concept'' of examining and coordinating regulations addressing the same emission source to minimize duplicative or contradictory requirements; and (7) Difficult to administer and enforce because, traditionally, one State regulatory agency administers rules regulating air emissions while another administers rules regulating hazardous waste management. Response: The Hazardous and Solid Waste Amendments to RCRA added section 3004(n), which directs the EPA to ``* * * promulgate regulations for the monitoring and control of air emissions from hazardous waste treatment, storage, and disposal facilities, including but not limited to open tanks, surface impoundments, and landfills, as may be necessary to protect human health and the environment.'' The EPA considers the most appropriate, effective, and efficient way to fulfill this congressional mandate is to develop air standards for TSDF that are implemented under the existing RCRA subtitle C permitting program already in place for these facilities. However, the EPA disagrees with one commenter's assertion that, in establishing these RCRA air standards, the EPA cannot consider the impact of air standards promulgated or currently being developed under other statutory authorities such as the CAA. On the contrary, RCRA section 1006(b) requires the EPA to coordinate its regulations under RCRA statutes and to avoid duplication, to the maximum extent practicable, with appropriate provisions of the CAA.
The EPA disagrees that the requirements of RCRA section 3004(n) are best fulfilled by deferring to air standards established under CAA authority. There is no indication that Congress intended for air standards to be issued only within the authority granted to the EPA by the CAA. If this was the case, then Congress would not have amended RCRA section 3004(n) under HSWA after Congress had already authorized the EPA to control air emissions under the CAA. Refer to S. Rep. No. 284, 98th Cong. 1st sess. 63. Thus,

both RCRA and the CAA authorize the EPA to control air emissions from TSDF. Although historically many standards promulgated by the EPA under authority of RCRA have addressed the prevention of soil and water contamination from improper management of hazardous waste, the EPA is not limited by RCRA to promulgating standards only for certain media (e.g., surface waters, groundwater, and soils). Indeed, RCRA section 3004(n) specifically directs the EPA to issue regulations controlling air emissions from TSDF as necessary to protect human health and the environment.

The selection of TSDF air emission sources for control by establishing air standards under RCRA section 3004(n) is based on controlling those TSDF air emission sources determined by the EPA to have significant toxic and ozone precursor emission potential but for which emission control is not adequately addressed by other standards promulgated by the EPA such as NESHAP and NSPS established under the CAA. At proposal, the EPA concluded that additional air emission control requirements for TSDF tanks, surface impoundments, and containers are needed. This decision was based on the EPA's determination that existing and future Federal standards under the CAA and State air standards do not adequately address the control of TSDF organic air emissions.

As previous described in section III.E of this preamble, CAA section 112 has been amended by Congress since RCRA section 3004(n) was enacted. Section 112 of the CAA as amended requires the EPA to identify major sources and area sources of HAP emissions and to develop NESHAP for these sources. To date for this air standards development program, the EPA has either promulgated or proposed several NESHAP that may apply to some hazardous waste management activities at TSDF. However, in general, these NESHAP added requirements to address HAP emissions from certain waste and material recovery operations that are not subject to or exempted from regulation under the RCRA air standards in 40 CFR parts 264 and 265. Thus, the NESHAP and other air standards being developed under CAA are not intended to duplicate the RCRA air standards, but instead to integrate with the RCRA air standards to create a comprehensive air program for addressing organic air emissions from all waste and related material recovery operations. For example, on-site wastewater treatment operations at synthetic organic chemicals manufacturing industry (SOCMI) facilities are regulated under the hazardous organic NESHAP (``the HON'') promulgated on April 22, 1994 (see 59 FR 19402). At many of these facilities, the hazardous wastewaters generated by process units and resulting wastewater treatment sludges are managed in tank systems that are exempted from RCRA permitting requirements under provisions in 40 CFR 264.1(g)(6) or 40 CFR 265.1(c)(10). Thus, the air emission control requirements under the HON, in most cases, affect wastewater treatment tanks not subject to the RCRA air standards. A second example is the recently proposed NESHAP for off-site waste and recovery operations (59 FR 51913, October 13, 1994). This NESHAP would apply to owners and operators of facilities, with certain exceptions, that manage wastes or recoverable materials which have been generated off-site at another facility and contain specific organic HAP. The rule would apply to operations managing solid wastes as defined under RCRA (hazardous and nonhazardous wastes) as well as operations handling recovered materials excluded from the RCRA definition of solid waste (e.g., recycled materials containing organic HAP, used oil reprocessed for sale as a fuel). As a result, certain off-site waste and recovery operations with organic HAP emissions, but exempted from regulation under the RCRA air standards, would be required to use air emission controls under this NESHAP. In contrast to the NESHAP now being developed under CAA section 112, the EPA has already achieved progress toward full implementation of RCRA section 3004(n), which requires a ``cradle to grave'' approach to hazardous waste management that addresses protection of air, water, and groundwater. Air standards have been promulgated for TSDF treatment process vents (subpart AA in 40 CFR parts 264 and 265) and for TSDF process equipment leaks (subpart BB in 40 CFR parts 264 and 265) in addition to the development of these air standards for TSDF tanks, surface impoundments, and containers. There is no benefit to delaying implementation of air

standards for TSDF tanks, containers, and surface impoundments to a future rulemaking under amended CAA section 112 when the EPA can proceed now with the promulgation of effective air standards under RCRA section 3004(n) for these air emission sources. The RCRA air standards adopted today do comply with RCRA section 1006(b). This section requires that the air standards be consistent with and not duplicative of CAA standards. Although RCRA section 1006(b) requires some accommodation with existing regulatory standards, it ``does not permit the substantive standards of RCRA to be compromised.'' Chemical Waste Management v. EPA, 976 F.2d at 23 (D.C. Cir. 1992). It is obviously reasonable for the EPA to view the RCRA section 3004(n) mandate as a standard which cannot (or at least need not) be compromised.
Similarly, the CAA Amendments of 1990 require that air standards developed under the CAA be consistent with RCRA rules. To conform with the dual RCRA and CAA requirements that standards be consistent, the air standards developed under RCRA section 3004(n) do not duplicate or contradict existing NESHAP or NSPS. The EPA is fully aware that at many facilities where hazardous wastes are managed, the RCRA air standards under 40 CFR part 264 and 265 as well as NESHAP and NSPS for specific source categories may be applicable to a particular TSDF. Certain testing, monitoring, inspection, recordkeeping, and other requirements under the RCRA air standards may be similar to or duplicative of requirements under the applicable NESHAP or NSPS. In many cases at a TSDF, individual waste operations will be subject to either the air emission control requirements under the RCRA air standards or the air emission control requirements under the applicable NESHAP or NSPS. Thus, it is necessary to include testing, monitoring, inspection, recordkeeping, and other implementation requirements in each rule to assure compliance with and enforcement of the rule. However, in certain situations, some individual waste operations at a TSDF could be subject to air emission control requirements under both the RCRA air standards as well as a NESHAP or NSPS. In such cases, the EPA believes it is unnecessary for owners and operators of these waste management units to conduct duplicative waste testing, keep duplicate sets of records, or perform other duplicative actions to demonstrate compliance with both sets of rules. Therefore, to be consistent with RCRA section 1006(b) to the maximum extent practicable, the EPA is coordinating the testing, recordkeeping, reporting, and other implementation activities required under the RCRA air standards and related rules developed under the CAA. The EPA has requested public comment in a related proposed NESHAP rulemkaing (the off-site waste and recovery operations NESHAP, see 59 FR 51919, October 13, 1994) on how the applicable requirements included in the RCRA air standards should be incorporated into CAA rules being developed by the EPA for waste and recovery operations that will allow owners and operators subject to both sets of rules to demonstrate compliance with all applicable rules without having to repeat the duplicative requirements. Nevertheless, RCRA section 1006(b) cannot be used to ignore key elements of RCRA; see Chemical Waste Management v. EPA, 976 F.2d at 23. In this case, Congress has indicated that TSDF air emissions need to be controlled on the RCRA timetable, not that of the CAA. Deferring totally to the CAA would vitiate this key RCRA requirement. [See also RCRA section 3004(q) and CAA section 112(n)(7) in which Congress indicated that pendency of CAA air standards for RCRA units does not vitiate RCRA requirements.]
The EPA's approach to developing air standards for TSDF under RCRA is consistent with CAA programs to achieve attainment and to maintain national ambient air quality standards (NAAQS). The NAAQS specify limits to pollutant concentrations in the ambient air to protect public health and welfare. A NAAQS has been established for ozone. Ambient ozone concentrations in many metropolitan regions of the United States exceed the NAAQS. Organic emissions from TSDF as well as other sources react photochemically with other chemical compounds in the atmosphere to form ozone. The CAA requires that States develop and the EPA approve air emission control plans called ``State implementation plans'' (SIP's). For those regions within a State that are in nonattainment with the NAAQS for ozone, the SIP specifies the standards and other control measures to be

implemented by the State to attain the NAAQS. However, the CAA requires the EPA not only to implement programs to attain the NAAQS in nonattainment areas but also to maintain, and prevent significant deterioration of, the air quality in those areas of the Nation currently in attainment with the NAAQS. Consequently, in addition to the CAA control programs to address specific regional NAAQS attainment problems, the EPA also develops under the CAA authority minimum national emission standards applicable to stationary sources independent of whether the source is located in a NAAQS attainment or nonattainment area. The EPA considers the subpart CC standards to be reasonable national standards needed to control emissions of air toxics as well as to attain and maintain NAAQS for ozone. The subpart CC standards are consistent with the EPA's pollution prevention policy. Pollution prevention involves reducing the quantity of pollution produced for a given quantity of product prior to recycling, treatment, or control of emissions. Activities defined as source reduction measures in the Pollution Prevention Act include technology modifications, process and procedure modifications, reformulation or redesign of products, and substitution of raw materials. A decrease in production alone does not qualify as pollution prevention. Under the subpart CC standards, a TSDF owner or operator is not required to manage a hazardous waste in a tank, surface impoundment, or container using the specified air emission controls in cases when the owner or operator determines that the organic content of all hazardous waste placed in the unit meets certain conditions specified in the rule. Thus, the subpart CC standards encourage pollution prevention by providing an incentive to generators to initiate source reduction measures that will reduce the concentration of organics in a hazardous waste.

The development of TSDF air standards under RCRA is not contrary to the EPA's ``cluster'' approach of examining and coordinating regulations addressing the same emission source to minimize duplicative or contradictory requirements. The different EPA Offices responsible for implementing RCRA and CAA requirements are coordinating the development of this rulemaking to ensure that subpart CC standards are compatible with other rules and programs applicable to TSDF owners and operators.

The air emission control requirements for tanks under the subpart CC standards incorporate provisions of NSPS that were promulgated under the authority of the CAA and apply to storage tanks constructed or modified after July 23, 1984, that contain volatile organic liquids (40 CFR part 60, subpart Kb). Therefore, air emission controls already in use on a TSDF tank in compliance with 40 CFR part 60, subpart Kb will comply with air emission control requirements of the subpart CC standards. Also, the subpart CC standards for closed-vent systems and control devices cross reference the requirements for closed-vent systems and control devices promulgated under subpart AA in 40 CFR parts 264 and 265. The subpart AA requirements are consistent with the requirements for closed-vent systems and control devices under several CAA air standards.

The implementation of air standards under RCRA does not create difficulties in administration and enforcement of the rules by State regulatory agencies. Although many existing RCRA standards focus on preventing the contamination of soil and water, other existing RCRA regulations regulate air emissions from some TSDF sources (e.g., combustion of hazardous waste is regulated under 40 CFR part 264, subpart O for hazardous waste incinerators and under 40 CFR part 266 subpart H for boilers and industrial furnaces). Air emissions are also sometimes addressed through the EPA's omnibus permitting authority under RCRA section 3005(c)(3). States authorized by the EPA administer and enforce the requirements of RCRA rules in lieu of the EPA administering the rules in that State. The EPA is aware that, in many States, one State agency administers air standards while another State agency administers rules regulating the management of hazardous waste in the State. Similarly, it is common for yet another State agency to administer water quality rules. The experience of authorized States administrating existing RCRA rules shows that responsibility for administrating these rules can be delegated to a separate State agency

without impeding the administration and enforcement of non-RCRA air and water rules by other State agencies.

B. Revised Impacts Analysis

Comment: The commenter on the Notice of Data Availability (NDA) (57 FR 43171, September 18, 1992) supports the EPA's use of the updated waste data base for the national impacts analysis and the EPA's changes to the emission models for biological treatment processes. In addition, the commenter agrees with the EPA's conclusion that many surface impoundments reported in the waste data base to be managing waste at TSDF have been or are being replaced with tanks to comply with the RCRA land disposal restriction and other regulations. However, the commenter believes that the EPA's assumption that 75 percent of the total waste quantity reported in the waste data base to be managed in surface impoundments is now managed in tanks is too low. The commenter agrees with the EPA's revised approach in the impact analysis of using sitespecific cancer risk factors to estimate cancer risk due to exposure to TSDF emissions. However, the commenter states that some of the specific assumptions made by the EPA for the risk analysis are implausible (e.g., assuming exposure of the individual for 70 years) and the analysis should be conducted in accordance with the EPA's own Exposure Assessment Guidelines. Finally, the commenter does not believe that any MIR estimate is necessary to assess the need for and effectiveness of the rule.

Response: For the national impacts analysis, the EPA believes that 75 percent is a reasonable assumption for the amount of waste that is converted from surface impoundment to tank management. As discussed further in the BID for the final rule, the EPA selected the 75 percent value based on information obtained by the EPA from a telephone survey of owners and operators of large TSDF and from TSDF site visits as well as information provided to the EPA by several TSDF owners and operators in comments on the proposed rule. The EPA did not find nor receive any additional information from the commenter that justifies increasing the percentage of waste converted from surface impoundment to tank management.

The cancer risk impact analysis for this rulemaking was conducted in accordance with the EPA's Exposure Assessment Guidelines. With regard to the 70 year lifetime assumption used in the impact analysis, the EPA believes 70 years to be conservative, but plausible. The EPA did however conduct a second risk assessment assuming a 33 year exposure scenario (95 percentile). Using this assumption reduced risk estimates by one-half, but did not change the decision to control these facilities, nor the choice of control options. Furthermore, the risk assessment conducted here was for the purpose of determining relative differences in risk estimates between the control options. For this application, the exposure scenario would not matter; the results, i.e., the relative differences in risk estimates, would not change. The EPA holds that the assumptions used to determine the MIR are, as with the 70 year exposure scenario, conservative, but plausible, and result in a reasonable overall estimate of risk. In addition, while the EPA acknowledges the uncertainties associated with the MIR, such uncertainties cancel out when the risk assessment is used to discern relative risk, as in this case. Thus the EPA believes that the use of the MIR is an appropriate tool to apply in the impact analysis for this rulemaking to both estimate risk and to discern differences between risk estimates associated with the various control options.

C. Container Air Standards

Comment: Many commenters disagree with the EPA's decision to require air emission controls for containers under the subpart CC standards. One group of commenters argues that the organic emission potential from TSDF containers does not warrant the application of additional controls beyond those already required by existing RCRA standards. A second group of commenters contends that TSDF containers should not be subject to this

rulemaking because the EPA analysis does not show organic emissions from TSDF containers to be a significant emission source warranting controls.
Response: The EPA maintains that the management of organiccontaining wastes in containers at TSDF is a potentially significant source of organic emissions that is not adequately regulated by existing regulations. Control requirements for containers under the subpart CC standards are needed to: (1) Ensure that containers used for storage of organic-containing waste use covers effective for organic emission control; (2) Control organic emissions from treatment of organic-containing wastes in containers by waste stabilization and other processes; and (3) Prevent circumvention of the containment and control strategy that serves as a key component of the integrated approach to implementing RCRA section 3004(n).
The EPA disagrees with the commenters' conclusion that existing regulations are sufficient to control organic emissions from containers used to manage hazardous waste at TSDF. Existing RCRA regulations under 40 CFR 264.173 require containers used to store hazardous waste at TSDF to be closed except when necessary to add or remove waste. This requirement for closed containers during storage does not specify organic air emission controls for these covers. Furthermore, no RCRA requirements exist that address organic emissions associated with other container operations such as hazardous waste transfer or treatment in open containers.
The EPA also disagrees with the commenters' conclusion that managing hazardous wastes in containers is not a significant potential source of organic air emissions. The baseline analysis to estimate nationwide TSDF organic emissions by waste management category is not the only factor that the EPA considered in assessing the organic emission potential of containers. The revised nationwide baseline emissions from storage of hazardous waste in TSDF containers is estimated to be approximately 5,000 Mg/yr. However, this emission estimate for containers does not include organic emissions from hazardous waste treatment in containers. As described in the BID for the final rule, the EPA estimates the total organic emissions from waste fixation operations performed in containers to be approximately 11,000 Mg/yr. Information obtained by the EPA representatives during site visits to TSDF conducting waste fixation operations indicates that use of containers for waste fixation continues to be a common industry practice. Thus, treatment of hazardous waste in containers is a large potential source of organic emissions that is not regulated by the existing RCRA regulations.
The air emission control requirements for the subpart CC standards are based on applying a containment and control strategy to TSDF tanks, surface impoundments, and containers from generation of the waste through treatment of the waste to remove or destroy the organics in the waste. Requiring control of only TSDF tanks and surface impoundments but not containers creates a significant potential organic emission source if large quantities of hazardous waste currently stored or treated in tanks required to use air emission controls under subpart CC standards are transferred to containers not using air emission controls. This would allow organics in the hazardous waste managed in uncontrolled containers to escape to the atmosphere prior to treatment and, thus, reduce the effectiveness of the containment and control approach.

D. Generator 90-Day Tanks and Containers

Comment: Many commenters disagree with the EPA's decision to apply the proposed air standards to 90-day tanks and containers for the following reasons:
(1) The EPA is not authorized under RCRA section 3004(n), or under other provision, to extend the air standards to 90-day tanks and containers; (2) The proposed rule failed to cite authority to extend the requirements to 90-day tanks and containers, in violation of section 553(b)(2) of the Administrative Procedures Act; (3) If the EPA imposes air emission controls on generators, this must be accomplished pursuant to the pre-HSWA authorization process and thus should not become effective in authorized

States until enacted and implemented as State law; and
(4) Application of air emission control requirements to 90-day tanks and containers impermissibly interferes with manufacturing processes.
Response: The EPA disagrees with each of these comments. The provisions of 40 CFR 262.34 (promulgated under the authority of RCRA section 2002, 3001-3005, and 3007) allow generators to accumulate hazardous waste in tanks and containers for specified time periods without obtaining RCRA permits, provided the generator meets certain conditions. Amending these conditions is a valid exercise of the EPA's authority under RCRA section 3004(n).
The intent of including the provisions of 40 CFR 262.34 in the RCRA requirements for hazardous waste generators is to obtain a reasonable balance between the Congress's desire not to interfere with the generator's manufacturing or production processes with the need to provide adequate protection of human health and the environment (45 FR 12730, February 26, 1980). Thus, 40 CFR 262.34 does not provide a hazardous waste generator with a complete exemption from all RCRA requirements. On the contrary, it incorporates most of the relevant tank and container requirements under 40 CFR part 265 and requires compliance with these standards as a condition for maintaining RCRA permit-exempt status [refer to 40 CFR 262.34(a)(1)]. The intent of these provisions is not to exclude 90-day tanks and containers from future technical TSDF requirements. Therefore, it is wholly appropriate for the EPA to update the technical requirements for tanks and containers that serve as the basis for the RCRA permit exemption. The EPA has already done so, for example, when tank standards were amended in 1986. Although 90-day tanks and containers are not required to be permitted under RCRA subtitle C, the EPA rejects the commenters' narrow reading of RCRA section 3004(n) as limiting the EPA's authority to extend the requirements to these units. Section 3004(n) of RCRA requires the EPA to promulgate standards for the control of air emissions from ``hazardous waste treatment, storage, and disposal facilities.'' The EPA does not agree that RCRA section 3004(n) reflects a congressional intend that the EPA regulate air emissions only from permitted and interim-status TSDF and not from 90-day tanks and containers. These tanks and containers are physically identical (i.e., the same types of tanks and containers are used by generators to accumulate and by TSDF owners and operators to store and treat waste). There is no environmental basis for not considering them subject to the section 3004(n) mandate. Such units are, in fact, storing or treating hazardous waste and are subject to numerous standards promulgated under the authority of both RCRA sections 3002 and 3004. The exemption of 90- day tanks and containers from the permitting requirements of RCRA subtitle C is regulatory, not statutory; there is no directive in the RCRA legislation that precludes the EPA from imposing any or all of the TSDF requirements on them. The use of the term ``facility'' in RCRA section 3004(n) can certainly be read to encompass 90-day tanks and containers, given the EPA's flexibility to construe that term (see United Technologies v. EPA, 821 F.2d at 814 (D.C. Cir. 1988) and the fact that 90-day tanks and containers are already subject to the substantive standards for tanks and containers and pose precisely the same potential environmental risks as other tanks and containers holding hazardous waste. In addition, the EPA sees to reason that Congress intended 90-day tanks and containers to be subject to air emission controls at a different time than other tanks and containers (which would be the case if the 90-day units are not regulated pursuant to a HSWA provision).
Therefore, it is proper for the EPA to use its authority under RCRA section 3004(n) to amend 40 CFR 262.34(a) by adding air emission control requirements to the conditions required for a 90-day tank or container to be exempted from the RCRA permitting requirements. For these reasons, the EPA rejects the commenters' arguments that the Agency is not authorized or failed to cite authority to use this rulemaking to amend the exemption requirements for 90-day tanks and containers. In addition, the EPA rejects the argument that the exemption requirements are under the EPA's pre-HSWA authority and, therefore, are not applicable in authorized States until the

individual States are authorized to implement the rule (See 51 FR 25464, July 14, 1986, where the EPA indicated that the modifications to 40 CFR 262.34, to reflect amended tank standards, were HSWA rules). As a variation of the argument that 90-day tanks and containers should not be regulated, one commenter asserts that RCRA section 3004(n) reflects a congressional intent that the EPA regulate air emissions only from permitted and interim-status TSDF and not from 90- day tanks and containers. The commenter apparently argues that the explicit inclusion of such authority under RCRA section 3004(n) and not under RCRA section 3002 implies a congressional finding that waste accumulation does not significantly contribute to air pollution. The EPA finds no indication, in the legislative history of RCRA, or elsewhere, that Congress ever made such a finding, and the EPA's conclusion, as discussed later in this section, is that on-site accumulation of hazardous waste in 90-day units is a significant source of organic air emissions. Again, the EPA finds no indication that Congress intended to preclude the EPA from regulating air emissions from nonpermitted hazardous waste storage and treatment under RCRA section 3004(n).

In addition to RCRA section 3004(n), the EPA has authority under RCRA section 3002 to amend 40 FR 262.34(a). One commenter states that, although RCRA section 3002(a)(3) authorizes the EPA to require the use of appropriate containers, RCRA section 3002 provides no authority to regulate air emissions. The EPA disagrees with this statement. The RCRA section 3002(a)(3) authority, as well as the general authority under RCRA section 3002 to promulgate such rules regulating generators ``as may be necessary to protect human health and the environment,'' is broad enough to encompass the regulation of air emissions from units storing or treating hazardous waste at generator facilities. Finally, the EPA cited both RCRA sections 3002 and 3004 as the statutory authority for the proposed rule. Therefore, this rulemaking is in full conformance with section 553(b)(2) of the Administrative Procedures Act.

The EPA also rejects the argument that the application of air emission controls to 90-day tanks and containers impermissibly interferes with manufacturing processes. The EPA concluded in 1980, as cited above, that the appropriate balance between protection of the environment and noninterference with manufacturing processes was achieved by requiring 90-day tanks and containers to comply with certain technical requirements as a condition of being exempt from the requirement to have a RCRA permit. The EPA estimates that nationwide baseline organic emissions from 90-day tanks and containers are approximately 76,000 Mg/yr. Given the significant organic emissions from 90-day tanks and containers, the same rationale has led the EPA to require that these units comply with the appropriate air emission control requirements of the subparts AA, BB, and CC standards to maintain an exemption from RCRA permitting. In contrast, the EPA decided not to extend under this rulemaking the requirements of these air standards to containers used for satellite accumulation because of the widespread use of these containers by manufacturing process operators to collect small quantities of hazardous waste as generated, and the integrated use of these containers with the manufacturing operations (discussed further in section 7.2 of the BID for today's rule). The EPA believes that this regulatory framework maintains the appropriate balance between environmental protection and noninterference with manufacturing processes.

E. Implementation of RCRA Air Standards

Comment: A total of 24 commenters addressed the EPA's proposed action of modifying the ``permit-as-a-shield'' practice to require that owners and operators of TSDF that have been issued final permits prior to the effective date of this rulemaking comply with the air standards under 40 CFR 265 subparts AA, BB, and CC until the facility's permit is reviewed or reissued by the EPA. Four of the commenters support the EPA's proposed modification. The other 20 commenters oppose the proposed modification and maintain that ``permit-as-a-shield'' practice should remain unchanged

because any action by the EPA to remove this practice:
(1) Is without the legal authority and that to do so would be contrary to congressional intent;
(2) Violates the due process rights of permittees, which are normally protected through the permit process; (3) Negates the purpose and importance of the RCRA permit because the ``permit-as-a-shield'' practice serves to unify all the regulatory requirements in the permit for a TSDF;
(4) Is contrary to previously stated policy whereby the EPA binds itself to the principle of using ``permit-as-a-shield'' (45 FR 33290, May 19, 1980); and
(5) Is disruptive to TSDF owner and operator planning, burdensome to comply with, and has an adverse effect on the availability and cost of control equipment.
Response: The practice known as ``permit-as-a-shield'' is derived from an exercise of the EPA's regulatory authority and was first codified in the 1980 implementing regulations of the RCRA permit program (45 FR 33290, May 19, 1980). It is not a provision of RCRA and is therefore no part of the statutory mandate by Congress to manage the Nation's hazardous wastes. Shell Oil v. EPA, 950 F.2d at 741, 762 (D.C. Cir. 1991). Because it is a regulatory and not a statutory provision, the EPA can modify the ``permit-as-a-shield'' practice in any situation where the Agency determines that the practice does not serve the EPA's mandate to protect human health and the environment. For the final subpart CC standards, the EPA estimates that baseline nationwide excess cancer incidence resulting from exposure to TSDF organic emissions is 48 cases per year. In addition, total nationwide organic emissions from TSDF are estimated to be approximately 1 million Mg/yr and, thus, contribute significantly to the formation of atmospheric ozone. These health and environmental impacts are very high relative to the impacts of emissions from other sources regulated under RCRA and the CAA. Accordingly, the EPA has determined that the health and environmental impacts resulting from organic air emissions from TSDF are of a magnitude to warrant narrowly rescinding the ``permit-as-a-shield'' practice for this limited case.
The ``permit-as-a-shield'' practice is not a consequence of Constitutional or statutory obligations of the EPA to any individual and its removal does not violate any substantive or procedural due process rights of individuals. The ``permit-as-a-shield'' practice was established by regulations promulgated by the EPA and therefore can be modified when the EPA determines it is necessary to do so for the protection of human health and the environment. Numerous government regulations have a direct effect on regulated entities, and the EPA's ``permit-as-a-shield'' practice does not vest the regulated community with a right to a variance from all new RCRA regulations. Furthermore, the proposal put the public on notice that the EPA was planning to modify the ``permit-as-a-shield'' practice in this rule, and the public has therefore had an opportunity for meaningful comment on the issue. The EPA continues to believe that the permit process and requirements are fundamental components of the RCRA program and that, by and large, compliance with the permits should constitute compliance with the RCRA program. For the other rulemakings for which the EPA rescinded the ``permit-as-a-shield'' practice, the EPA determined that the risk to human health and the environment was too high to allow the practice to continue (for remaining permit periods), and required that all TSDF comply with the new requirements regardless of their permit status. The EPA has determined that allowing owners and operators of permitted TSDF to be shielded from compliance with the regulatory requirements of subparts AA, BB, and CC standards will allow excessively high risks. Today's action by the EPA does not negate the value of the RCRA permit program or the ``permit-as-a-shield'' practice. Instead, the EPA is making a distinction between a provision that is sufficiently protective in most cases and one that, under specific situations, is not sufficiently protective. The EPA disagrees with the commenters' claims that the permit modification process can adequately accommodate the timely implementation of the subpart CC standards. For the EPA to apply the subpart CC standards into permits by

way of modifications would require a significant and unreasonable resource commitment. Furthermore, the fact that existing permits can be modified to incorporate new regulatory requirements [per 40 CFR 270.41(a)(3), which implements RCRA section 3005(c)(3)] shows that ``permit-as-a-shield'' is hardly an inviolate principle. The ruelmaking simply accomplishes nationally what a modification would accomplish individually. Accordingly, the EPA developed the subpart AA, BB, and CC standards to be ``selfimplementing'' so that State and Regional permit writers will not be required to reopen and rewrite permits to incorporate the provisions. Permitted facilities will be able to comply directly with the regulatory standards in the same way that interim-status facilities must comply. Modifying ``permit-as-a shield'' for these rules eliminates any confusion or ambiguity as to which TSDF is subject to the requirements.

As noted by the commenters, the EPA stated a policy for ``permitas -a-shield'' in the so-called consolidated permit regulations issued in 1980 (45 FR 33290). However, this does not mean that the policy for ``permit-as-a-shield'' can never be amended. The EPA has never agreed to ``bind'' itself to any particular policy or provision. Instead, the EPA may adhere to a general practice or policy with the understanding that, if the circumstances warrant and the EPA provides a rational explanation, it can modify or rescind a particular provision. It should be noted, for example, that Congress has since amended RCRA to require that air emissions from TSDF be controlled, and in the same amendments provide that the EPA may reopen permits to add conditions reflecting new control practices and to redress potential risks posed by the facility (RCRA section 3005(c)(3) and S. Rep. No. 284, 98th Cong. 1st Sess. at 31). Here, the EPA is determining that there are excessively high risks from these facilities, and therefore that these more protective provisions should become effective immediately. It should also be noted that the EPA does not intend to rescind ``permit-as-a-shield'' on a regular or frequent basis for other rulemakings. As stated earlier, the EPA generally does view ``permitas -a-shield'' as a beneficial and legitimate part of the RCRA program and that, in most cases, it will apply. The EPA believes that the commenters claiming that removing ``permit-as-a-shield'' will be disruptive to TSDF implementation planning are greatly overstating the adverse or disruptive effects that an accelerated implementation will have on TSDF owner and operator planning and operations because the control technologies for the different kinds of management units are varied and widely available. The EPA specifically considered the costs and economic impacts of the various control options in the regulatory impact analysis for the proposed rule (RCRA docket entry number F-91-CESP-S00494). Based on this analysis, the EPA found that the costs of installing and operating air emission control equipment required by the control options are projected to be less than 1 percent of the total cost of hazardous waste management at TSDF. Any air emission control equipment supply availability constraints resulting from these rules should be short term, if at all. Furthermore, TSDF owners and operators required to install air emission control equipment to comply with the subpart CC standards are allowed up to an additional 30 months after the rule's effective date to complete the equipment design and installation if they can document that the air emission controls cannot be installed and operating by the effective date, for reasons such as the unavailability of control equipment.

Also, the EPA expects that many TSDF owners and operators will choose to treat their hazardous waste earlier in the management sequence that they now do to reduce the organic content of the waste in accordance with one of the treatment requirements allowed for in the final subpart CC standards, and thus avoid the cost of installing and operating the control equipment on the downstream tanks, surface impoundments, and containers. The EPA also encourages the use of pollution prevention techniques as a means of reducing the quantity of waste generated, the organic concentration of the waste, or the toxicity of constituents in the waste.

F. Waste Stabilization in Tanks

Just prior to the long-scheduled and publicly-known promulgation date, representatives from the hazardous waste treatment industry notified the EPA of their opinion that the draft requirements for waste stabilization operations performed in tanks are economically and technically infeasible. These draft requirements are included in a May 19, 1994 interim review draft of the final rule, made publicly available in June 1994. (See RCRA docket entry number F-94-CESPS 00509.) Moreover, the industry indicated that volatilization of organic constituents during stabilization operations are negligible. No data were submitted to the EPA in support of these assertions. Industry representatives nevertheless feel strongly that for the majority of waste streams treated by stabilization, the organic constituents in the waste are not volatilized during the stabilization process. Additionally, they allege that for these same stabilization operations: (1) It is technically infeasible to comply with the air emission control requirements for tanks in the subpart CC standards; and (2) It is not feasible to treat organic waste prior to stabilization such that the volatile organic concentration of the waste entering the stabilization process would be below 100 ppmw, and the downstream units managing the waste (including the stabilization tanks) would thereby be exempt from subpart CC tank control requirements. (See RCRA docket number F-94-CESF-FFFFF.)

These statements contradict the conclusions drawn by the EPA based on site visits to observe hazardous waste stabilization processes, and experiments and studies conducted by the EPA to characterize waste stabilization processes and estimate associated organic emissions. The most recent EPA studies were mentioned in the Notice of Data Availability (see 57 FR 43171, September 18, 1992) and were made available for public review and comment in the docket for this rulemaking (see RCRA docket number F-92-CESA-FFFFF). No comments were received concerning the validity of these stabilization study conclusions.

At the same time, however, and despite the inappropriate timing of industry's comments on this issue (compounded by the industry's failure to comment on the information presented by the Notice of Data Availability), the EPA has determined that it may be worthwhile to review pertinent data for current waste stabilization activities at hazardous waste TSDF. Industry has pledged to provide detailed data from an emissions test conducted to measure organic emissions from a full-scale stabilization operation treating hazardous waste streams. The test will be conducted using the EPA approved sampling and analytical methods, and the volatile organic concentration of the waste streams will be measured using Method 25D, with gas chromatography and with mass spectrometry (see RCRA docket number F-94-CESF-FFFFF). The EPA will accept until September 6, 1995 all pertinent information and comments on the following limited issues: (1) Volatilization of organics during waste stabilization activities, (2) feasibility of treating organic wastes to destroy or remove organics prior to stabilization to immobilize toxic metals, and (3) alternative organic emission controls applicable to stabilization tanks. Persons interested in submitting comments or data pertaining to these issues should notify the EPA of their intent by contacting Ms. Michele Aston at the address listed in the FOR FURTHER INFORMATION CONTACT section at the beginning of this preamble. Written information and comments regarding the above issues should be mailed to the RCRA Docket Office (5305), U.S. Environmental Protection Agency, room 2616, 401 M Street SW., Washington, DC 20460. Please send an original and two copies of all information, and refer to RCRA docket number F-94-CESA-FFFFF. The EPA will assess all submitted information, and will make a rapid determination whether to amend the requirements under the subpart CC standards being promulgated today for tanks in which waste stabilization operations are performed. The EPA emphasizes that the current record does not support any amendment to these standards. However, if the EPA were to amend the requirements for stabilization tanks, the amendment could include any of the provisions described below, a modification of today's promulgated requirements, or

possibly other options.
The EPA may choose to amend the final subpart CC tank standards such that stabilization tanks could comply with alternative air emission controls to those included in today's promulgation. The EPA will determine the appropriateness of such an amendment based on the evaluation of:
(1) Information that is submitted relating to industry's comments that it is not feasible to comply with the technical requirements of today's final rule or to pretreat waste prior to stabilization; (2) Information related to alternative emission controls that could be applied to stabilization tanks for effective organic emission reduction;
(3) Data related to the specific characteristics of hazardous waste that is stabilized at TSDF;
(4) Detailed information regarding the stabilization processes performed in TSDF tanks; and
(5) Other related information.
For a given stabilization tank to qualify for certain compliance options, the EPA could require the facility owner or operator to demonstrate (through specified testing, monitoring, sampling, or other means) that organic constituents are not volatilized during the hazardous waste stabilization operations performed in that tank. A similar requirement for biological treatment performed in tanks and surface impoundments is included in the final subpart CC standards (for example see 40 CFR 264.1085(a)(2)) as well as other air standards developed by the EPA under the Clean Air Act (e.g., the Hazardous Organic NESHAP (59 FR 19402, April 22, 1994) and the proposed Off-Site Waste and Recovery Operations NESHAP (59 FR 51919, October 13, 1994)). For biological treatment processes, which are generally acknowledged by the EPA as appropriate treatment for organic constituents in waste with respect to controlling organic emissions, the EPA considers such a demonstration to be a reasonable requirement for certain compliance options. Therefore, the EPA also could consider it reasonable to require that stabilization operations, which the EPA does not consider appropriate treatment for organic constituents in waste with respect to controlling organic emissions, perform at least an equivalent demonstration for certain compliance options. If the EPA were to amend today's promulgated subpart CC tank standards to include such a demonstration, the required procedure could include any of the following, or possibly other procedures: whole waste analyses, fullscale analyses, specified emissions monitoring, material balance calculations, temperature monitoring, and water content information. In light of this supplemental comment opportunity, the EPA considers it appropriate to extend the effective date of the final rules for tanks that could be affected if the EPA chooses to modify the standards. Therefore, a separate compliance schedule is applicable to tanks in which waste stabilization activities are performed as of December 6, 1994. It is important to note that all applicable requirements with respect to other units at a facility subject to the subpart CC standards will be effective June 5, 1995. For these stabilization tanks, the effective date of the final rules will be December 6, 1995. As of the extended effective date for stabilization tanks, each TSDF owner or operator and each hazardous waste generator subject to the final rules must either install and operate the specified air emission control requirements on all affected tanks used for stabilization, or begin performing the specified waste determinations and recordkeeping to indicate that a stabilization tank is exempted from these requirements. Under circumstances where required air emission control equipment cannot be operational by December 6, 1995, an implementation schedule for installation of the required air emission controls must be developed and placed in the facility operating records no later than December 6, 1995. In such cases, the facility must have all air emission controls required by the final rules in operation no later than June 8, 1998.

VII. Requirements of Final Rule

A. TSDF Tank, Surface Impoundment, and Container Requirements

Today's action by the EPA promulgates air emission standards for TSDF tanks, surface impoundments, and containers as a new subpart CC in both 40 CFR parts 264 and 265. Subpart CC under 40 CFR part 265 establishes standards for owners and operators of interim-status TSDF. As discussed in section VIII.A of this preamble, owners and operators of permitted TSDF that have been issued final permits prior to June 5, 1995, are required to comply with subpart CC under 40 CFR part 265 until the facility's permit is reviewed or reissued by the EPA. The air emission control requirements of the final subpart CC standards in 40 CFR part 264 and 40 CFR part 265 are identical with the exception of the reporting requirements. There are no reporting requirements in subpart CC under 40 CFR part 265.

1. Applicability
   a. General applicability. In general, the subpart CC standards apply to RCRA-permitted tanks, surface impoundments, and containers subject to 40 CFR part 264, subparts J, K, or I, respectively, as well as to interim-status TSDF tanks, surface impoundments, and containers subject to 40 CFR part 265, subparts J, K, or I, respectively. However, certain specific types of TSDF tanks, surface impoundments, and containers are not subject to the subpart CC standards under applicability provisions in other RCRA regulations as well as provisions included specifically in the subpart CC standards. The subpart CC standards do not apply to those TSDF tanks, surface impoundments, or containers excluded from regulation under 40 CFR 264.1. For example, TSDF owners and operators are not required to obtain a RCRA permit for tanks or tank systems that manage hazardous wastewaters or wastewater treatment sludges and are subject to regulation under either section 402 or 307(b) of the Clean Water Act [refer to 40 CFR 264.1(g)(6) and 40 CFR 265.1(c)(10)]. Because these tanks are exempted from RCRA permitting requirements, they are not subject to the requirements of 40 CFR parts 264 and 265. Thus, the subpart CC standards do not apply to a TSDF tank that is considered to be a part of a ``wastewater treatment unit'' as defined in 40 CFR 260.10. Similarly, the subpart CC standards do not apply to TSDF tanks, surface impoundments, or containers when these units are used for emergency or spill management activities in accordance with 40 CFR 264.1(g)(8)(i) or 40 CFR 265.1(c)(11)(i). b. Exemptions. The subpart CC standards are only applicable to containers with a design capacity greater than or equal to 0.1 m\3\ (approximately 26 gallons). This means that any container that has a design capacity less than 0.1 m\3\ is not subject to the subpart CC standards regardless of the volatile organic concentration of the hazardous waste placed in the container. The subpart CC standards apply only to TSDF tanks, surface impoundments, and containers in which an owner or operator places hazardous waste on or after June 5, 1995. With respect to surface impoundments, the EPA has already explained that RCRA regulations do not apply to impoundments at which there is no active management of hazardous waste after the rule's effective date (see 55 FR 39410, September 27, 1990). This would include impoundments that cease operation before the rule's effective date, and impoundments that convert to non-hazardous waste impoundments before the effective date. This latter class of impoundments includes those impoundments that contain hazardous wastes deposited before the rule's effective date for which the impoundment is the final disposal site for hazardous waste already in the unit (i.e., the impoundment is a disposal unit) and hazardous wastes are not actively managed in the impoundment. Id. The principle in today's rule is consistent with this existing interpretation.
   The rationale for not applying the subpart CC standards to tanks and containers that do not receive hazardous waste after the effective date is somewhat different. Under the subpart CC standards, the need to apply air emission controls to a particular tank or container is

determined by the organic content of the hazardous waste at a point prior to being placed in the tank or container (this is discussed in the following section under ``General Standards''). In many situations where existing tanks and containers at a TSDF already hold hazardous waste but no longer receive new wastes, a TSDF owner or operator will be unable to perform a waste determination as specified in the rule because waste samples cannot be collected at the required locations and the owner or operator has insufficient knowledge about the waste. Furthermore, even if a waste determination can be performed for these tanks or containers but the units presently are uncovered or have other openings, most if not all of the volatile organics in the waste have most likely already been emitted to the atmosphere. Thus, the EPA decided that air emission control requirements should only apply to those tanks and containers in which hazardous waste is placed on or after the effective date of the rule.

The EPA decided not to apply the subpart CC standards to a tank once an owner or operator stops adding hazardous waste to the unit and begins closure pursuant to an approved closure plan because in many cases, use of the required air emission controls would hinder or prevent closure activities from being performed. c. Remediation wastes. The EPA has further decided to temporarily defer application of the subpart CC standards to tanks, containers, and surface impoundments which are being used on-site to treat or store hazardous wastes containing organics generated from remedial activities required under RCRA corrective action or CERCLA response authorities, or similar State remediation authorities, provided that the wastes are managed in units that do not also manage other hazardous wastes. This deferral applies only to on-site management of such wastes. For remediation waste transported off-site, the point of waste origination will be the point at which the wastes are physically moved outside the facility boundary (or for CERCLA response actions, outside the site boundary).

As the D.C. Circuit recently explained, a temporary deferral such as today's is permissible if the Agency legitimately needs further time to ascertain the best means of integrating concurrent statutory and regulatory schemes to avoid potential interference with the objectives of both schemes, and where Congress has not expressly forbidden a temporary deferral. Edison Electric Inst. v. EPA, 2 F. 3d 438, 451-53 (D.C. Cir. 1993). See also RCRA section 1006, requiring the EPA to integrate all provisions of RCRA for purposes of administration and enforcement, and to avoid duplication to the maximum extent practicable in doing so.

This situation is presented here. Control of air emissions from units at remediation sites implicates the overlapping and potentially competing concerns of RCRA section 3004(n) and the complex statutory provisions under RCRA, CERCLA, and State laws relating to remediation. The EPA's primary goal in this rulemaking has been to develop air emission standards for tanks, containers, and surface impoundments holding as-generated hazardous wastes containing organics. At proposal, the EPA thus did not fully consider the issue of whether different standards should appropriately apply to wastes that are generated and managed as the result of remedial activities, or how the proposed rule for air emissions could best be integrated with the remediation authorities of RCRA and other Federal or State laws. 56 FR at 33497-98 (July 22, 1991).

Commenters on the proposed subpart CC regulations pointed out that these were important issues deserving careful attention. The EPA agrees. It is possible that certain provisions of the air emission requirements promulgated today may be inappropriate or unnecessarily restrictive if applied to remediation activities (see 58 FR 8660, February 16, 1993).

The EPA notes that some measure of control of air emissions from remediation tanks, containers, and impoundments will be assured during

the deferral period. Remediation authorities of RCRA and CERCLA and similar State authorities allow overseeing officials to impose, on a site-specific basis, appropriate air emission controls on these types of units, as well as on other waste management units and handling operations. In addition, hazardous wastes containing organics that are managed off-site (i.e., outside a RCRA facility's boundary, or outside a CERCLA site) would be subject to the subpart CC management standards. Finally, the EPA emphasizes that the deferral is indeed temporary. The issue of appropriate air emission controls for remediation units is likely to be addressed in the context of the Hazardous Waste Identification Rules which are currently being developed by the EPA. The issue is also potentially part of the third phase of the RCRA section 3004(n) implementation. In addition, waste remediation sites are on the initial list of source categories under CAA section 112, and the EPA currently is scheduled to issue technology-based standards to control emissions of hazardous air pollutants from this source (see 57 FR 31576, July 16, 1992). Consequently, the EPA will be addressing this issue in the reasonably near future.

d. Radioactive mixed wastes. As explained in section IV.F of this preamble, the management of radioactive mixed waste at TSDF is subject to regulation under subtitle C of RCRA. The EPA reviewed the special nature of radioactive mixed wastes with respect to the air emission control requirements under the final subpart CC standards. In certain cases, the air emission controls used as the basis for the subpart CC standards are not compatible with the NRC requirements for safe handling of radioactive mixed wastes. For example, drums used to store radioactive mixed waste cannot be sealed with vapor leak-tight covers because of unacceptable pressure buildup of hydrogen gas to levels that can potentially cause rupture of the drum or create a potentially serious explosion hazard. This generation of hydrogen gas results from the radiolytic decomposition of organic materials (e.g., plastics) or aqueous solutions stored in the drums. Consequently, a drum used for storage of radioactive mixed wastes must be continuously vented through special filters in accordance with technical guidance issued by the NRC to prevent the hydrogen concentration in the drum from reaching dangerous levels. The EPA is planning to further investigate methods for effective control of organic emissions from waste management units handling radioactive mixed waste that are consistent with the NRC waste management practices.

2. General Standards

The final subpart CC standards require that TSDF owners and operators install and operate air emission controls on each tank, surface impoundment, and container subject to the rules except when all of the hazardous waste placed in the unit is determined to meet certain conditions. These conditions are based on properties of the hazardous waste determined at either one of two locations: (1) The point where a hazardous waste is generated or the point where the waste is received by an off-site facility; or (2) The point following treatment of a hazardous waste to remove or destroy the organics in the waste.

a. Point of waste origination. Under the final subpart CC standards, a TSDF owner or operator is exempted from managing a hazardous waste in a tank, surface impoundment, or container in accordance with the air emission control requirements of the rule when the owner or operator determines that all hazardous waste placed in the unit has an average volatile organic concentration at the point of waste origination less than 100 ppmw. The point of waste origination is defined in the rule with respect to the point where the TSDF owner or operator first has possession of a hazardous waste. When the TSDF owner or operator is the generator of the hazardous waste, the point of waste origination means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in 40 CFR part 261. As previously stated, the term ``point of waste

origination'' applied to this situation is being used in a similar manner to the use of the term ``point of generation'' in waste operations air standards established under authority of the Clean Air Act in 40 CFR parts 60, 61, and 63 of this chapter. When neither the TSDF owner nor operator is the generator of the hazardous waste, point of waste origination means the point where the owner or operator accepts delivery or takes possession of the hazardous waste. b. Treated Hazardous Waste. If a hazardous waste has an average volatile organic concentration equal to or greater than 100 ppmw based on the hazardous waste composition at the point of waste origination, then this waste is required under the subpart CC standards to be managed in accordance with the air emission control requirements of the rule. Under these requirements, specific air emission controls must be installed and operated on every tank, surface impoundment, and container subject to the rule used in the waste management sequence from the point of waste origination through the point where the organics in the waste are removed or destroyed by a process that meets or exceeds a minimum level of performance specified in the rule. In other words, once a hazardous waste is treated to remove or destroy the organics in the waste in accordance with the rule requirements, the subsequent downstream tanks, surface impoundments, and containers used to manage this particular hazardous waste are not required to meet the air emission control requirements of the subpart CC standards. The final subpart CC standards provide TSDF owners and operators with several alternative provisions for determining when a treated hazardous waste is no longer required to be managed in tanks, surface impoundments, and containers meeting the air emission control requirements of the rule. Treated hazardous waste provisions are specified in the subpart CC standards for the following processes: (1) An organic destruction, biological degradation, or organic removal process that reduces the organic content of the hazardous waste and is designed and operated in accordance with certain conditions specified in the rule;
(2) A hazardous waste incinerator that is designed and operated in accordance with the requirements of 40 CFR 264 subpart O or 40 CFR 265 subpart O; or
(3) A boiler or industrial furnace that is subject to the requirements of 40 CFR part 266 subpart H. A process that simply mixes, blends, combines, or aggregates a hazardous waste stream with other materials does not destroy the organics in the waste stream or remove the organics from the waste stream. While diluting a hazardous waste stream having a volatile organic concentration greater than 100 ppmw with sufficient quantities of other hazardous waste streams having a volatile organic concentration less than 100 ppmw (or water or other low organic content materials) would reduce the volatile organic concentration of the resulting hazardous waste mixture to a level below 100 ppmw, the total mass quantity of organics in the waste does not change since no organics were removed or destroyed from the waste. The potential for organic emissions from handling the waste mixture is essentially the same as for the individual hazardous waste streams prior to being mixed. Therefore, the EPA does not allow dilution of a hazardous waste as a means for complying with the requirements specified in the subpart CC standards for placing treated hazardous waste in affected tanks, surface impoundments, or containers not using the required air emission controls. Consequently, when a hazardous waste is treated by an organic destruction or removal process and the hazardous waste has been mixed or aggregated together with other hazardous wastes or materials with a volatile organic concentration less than 100 ppmw prior to the point of waste treatment, the subpart CC standards require that TSDF owners and operators meet special requirements to ensure that organics in the hazardous waste have actually been removed or destroyed. An owner or operator can choose from several alternative provisions to comply with these requirements.

One provision requires that mixed hazardous wastes be treated by an organic destruction or removal process that reduces the volatile organic concentration of the hazardous waste to meet a site-specific treatment process exit concentration limit. This limit is determined by the TSDF owner or operator on a case-by-case basis using an equation specified in the rule that accounts for the portion of the reduction in the volatile organic concentration in the resulting treated hazardous waste stream due to dilution. To use this equation, the owner or operator must first determine the volatile organic concentration at the point of waste origination for each individual hazardous waste stream that is mixed together prior to entering the treatment process. As an alternative to calculating the exit concentration limit for a treatment process, the subpart CC standards allow the owner or operator to treat the mixed hazardous wastes to a volatile organic concentration level that is less than or equal to the lowest waste volatile organic concentration at the point of waste origination for all of the individual hazardous waste streams mixed together prior to entering the treatment process.

Another alternative in the subpart CC standards available to owners and operators allows mixed hazardous wastes to be treated using a single process that achieves an organic reduction efficiency of 95 percent or greater on a mass basis, and reduces the average volatile organic concentration of the resulting hazardous waste stream exiting the process to a level less than 50 ppmw. This alternative does not require the owner or operator to perform any volatile organic concentration waste determinations for the hazardous wastes prior to mixing, yet still accommodates the mixing of wastes that have different volatile organic concentrations. For a waste stream having a volatile organic concentration greater than 2,000 ppmw, requiring only a minimum 95 percent reduction of the organic content in the waste stream would not lower the volatile organic concentration of the treated waste stream to the 100 ppmw level of the rule. However, if such a waste stream had been mixed together prior to treatment with other waste streams having lower volatile organic concentrations, then the volatile organic concentration of the treated waste exiting the process could be less than 100 ppmw. The EPA does not consider such situations to be unlikely, and has therefore chosen for this alternative to require an exit concentration for the treated waste lower than 100 ppmw. The EPA considers an exit concentration of 50 ppmw, combined with a 95 percent treatment efficiency, to be an appropriate demonstration that the reduction in volatile organic concentration for a mixture of hazardous waste streams has been achieved through destruction or removal of organic constituents in the waste, rather than by dilution. The final subpart CC standards also provide another alternative that does not require the owner or operator to perform any volatile organic concentration waste determinations for the hazardous wastes prior to mixing when the waste is treated by a biological process that destroys or degrades the organics contained in the hazardous waste to meet certain performance requirements specified in the rule. These conditions are either of the following: (1) Achieve an organic reduction efficiency for the biological treatment process equal to or greater than 95 percent, and achieve an organic biodegradation efficiency for the process equal to or greater than 95 percent; or

(2) Achieve a total actual organic mass biodegradation rate for all hazardous waste treated by the process equal to or greater than the required organic mass removal rate for the process. Compliance with these parameters is determined using the procedures specified in rule. The EPA may at any time measure or request that the owner or operator measure using Method 25D the volatile organic concentration of a hazardous waste that is placed in a tank, surface impoundment, or container not using air emission controls in accordance with the requirements of the subpart CC standards. Measurement results showing

that the volatile organic concentration of the hazardous waste is equal to or greater than 100 ppmw constitutes noncompliance with the subpart CC standards. However, in a case where the owner or operator has used an averaging period greater than 1 hour for determining the volatile organic concentration of a hazardous waste, the Regional Administrator may consider information that was used by the owner or operator to determine the average volatile organic concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) together with the results of the waste determination in determining whether the owner or operator is in compliance with the subpart CC standards.

3. Waste Determination Procedures

A determination of the volatile organic concentration of a hazardous waste is required by the subpart CC standards only when a hazardous waste is to be placed in a tank, surface impoundment, or container subject to the rule that does not use air emission controls in accordance with the requirements of the rule. A TSDF owner or operator is not required to determine the volatile organic concentration of the waste if it is placed in a tank, surface impoundment, or container using the required air emission controls. When the hazardous waste is generated as part of a continuous process, the owner or operator is required to perform an initial waste determination of the average volatile organic concentration of the waste stream before the first time any portion of the material in the waste stream is placed in a waste management unit subject to the rule, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination. When the hazardous waste is generated as part of a batch process that is performed repeatedly but not necessarily continuously, the owner or operator is required to perform an initial waste determination of the average volatile organic concentration for one or more representative waste batches generated by the process before the first time any portion of the material in the these waste batches is placed in a waste management unit subject to the rule, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination. For either case, the owner or operator is required to perform a new waste determination whenever changes to the process generating the hazardous waste are reasonably likely to cause the average volatile organic concentration to increase to a level at or above 100 ppmw. If an average volatile organic concentration is used, an initial waste determination must be performed for each averaging period. Waste determinations should be performed for any waste that is generated as a part of an unplanned event or is generated as a part of an event that is not included in the normal operating conditions for the source or process generating the hazardous waste. Examples of an unplanned event include malfunctions that affect the operation of the process or that alter the composition of the waste or product. Examples of events that are not normal operating conditions include maintenance activities and equipment cleaning. Normal operating conditions for the source or process generating the waste include cyclic process operations such as start-up and shutdown. For processes that have variations in normal operating conditions such that the waste volatile organic concentration may exceed 100 ppmw, but for which the average waste volatile organic concentration for the averaging period is below 100 ppmw, documentation must be retained in the facility operating record that specifies the following information: (1) The maximum and minimum waste volatile organic concentration values that will occur for that averaging period; (2) the circumstances under which a waste volatile organic concentration above 100 ppmw would occur, and; (3) the calculations and waste determination procedures used as the basis for the determination of the average volatile organic concentration. For a given averaging period, if there are no deviations from the

operating circumstances or from the maximum or minimum waste volatile organic concentrations specified in the operating plan, then no additional waste determinations would be required after the initial waste determination for that averaging period. The subpart CC standards include provisions that allow a TSDF owner or operator to use either direct measurement or knowledge of the waste to determine the volatile organic concentration of a hazardous waste. The following paragraphs describe these two options available to the owner or operator for performing a waste determination. a. Direct measurement. When the hazardous waste is generated on a continuous basis, the averaging period to be used for determining the volatile organic concentration on a mass-weighted average basis must be designated and recorded. This averaging period can represent any time interval that the hazardous waste flows until such time that a new waste determination must be performed pursuant to the requirements of the rule. However, this averaging period cannot exceed 1 year. A sufficient number of samples, but no less than four, must be collected to represent the complete range of organic compositions and organic quantities that occur in the hazardous waste stream during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste. When the hazardous waste is generated as part of a batch process that is performed repeatedly but not necessarily continuously, samples are collected from one or more representative waste batches generated by the process. The volatile organic concentration for the waste is calculated as a mass-weighted average based on the analysis results for all of the waste samples collected for these waste batches. A sufficient number of samples, but no less than four, must be collected to represent the organic composition for each representative batch. Each sample of the hazardous waste is to be collected in accordance with the requirements specified in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW-846, third edition, November 1986, as amended by Update I, November 15, 1992. Sufficient information must be recorded to document the waste quantity and the operating conditions for the source, process, or waste management unit generating the hazardous waste represented by each sample collected.

Each of the collected waste samples is to be prepared and analyzed in accordance with the requirements of Method 25D in 40 CFR part 60, appendix A. The volatile organic concentration for a hazardous waste on a mass-weighted average basis is then calculated by entering the analysis results for all of the collected waste samples into an equation specified in the rule.

b. Knowledge of the waste. The final subpart CC standards allow TSDF owners or operators to use their knowledge of the waste for waste determinations (see Hazardous Waste Treatment Council v. EPA, 886 F.2d 355, 370-71 (D.C. Cir. 1989) upholding the use of generator knowledge to determine if treatment standards are met). Information may be used that is prepared by either the facility owner or operator or by the generator of the hazardous waste. Examples of information that could constitute acceptable knowledge include: (1) Organic material balances for the source, process, or waste management unit generating the waste;

(2) Documentation that lists the raw materials or intermediate products fed to a process showing that no organics are used in the process generating the waste;

(3) Information that shows the waste is generated by a process that is substantially similar to a process at the same or another facility that generates a waste that has previously been determined by direct measurement to have a volatile organic content less than the action level;

(4) Test data that provide speciation analysis results for the waste that are still applicable to the current waste management practices

and from which the total concentration of organics in the waste can be computed; or
(5) Other knowledge based on manifests, shipping papers, or waste certification notices.
When test data are used as the basis for knowledge of the waste, the owner or operator must provide documentation describing the testing protocol and the means by which sampling variability and analytical variability are accounted for in the determination of the volatile organic concentration of the hazardous waste. For example, an owner or operator may use individual organic constituent concentration test data that are validated in accordance with Method 301 in appendix A to 40 CFR part 63 as the basis for knowledge of the waste.

4. Tank Standards

The tank standards establish the requirements for tanks using air emission controls to comply with the general standards of the rule. No air emission controls are required under the subpart CC standards for a tank in which all hazardous waste placed in the unit has been treated to remove or destroy organics in accordance with the requirements specified in the general standards.
Also, the tank standards do not apply to a tank in which biological degradation of the organics in the hazardous waste treated in the unit is demonstrated to achieve specific performance levels. Either of the following sets of conditions must be demonstrated to qualify for this exemption: (1) The organic reduction efficiency for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency for the process is equal to or greater than 95 percent; or (2) the total actual organic mass biodegradation rate for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate. The organic biodegradation efficiency or the organic mass biodegradation rate for a biological treatment unit is determined by procedures specified in the rule. The tank standards specify that the owner or operator install and operate on each affected tank one of the following air emission control systems: (1) A cover that is connected through a closed-vent system to a control device; (2) a fixed-roof type cover with an internal floating roof that is designed and operated in accordance with the requirements equivalent to the new source performance standard (NSPS) for volatile organic liquid (VOL) storage; (3) an external floating roof that is designed and operated in accordance with the requirements equivalent to the VOL storage NSPS; or (4) a pressure tank that is designed to operate as a closed system. Under the subpart CC standards, an owner or operator is allowed to use a fixed-roof type cover (without any additional controls) for affected tanks under certain conditions. Four conditions must be met for a particular tank before use of a fixed-roof type cover (without any additional controls) is allowed under the subpart CC standards. First, the hazardous waste cannot be mixed, stirred, agitated, or circulated within the tank by a process that results in splashing, frothing, or visible turbulent flow on the waste surface except during limited circumstances. Second, the hazardous waste in the tank cannot be heated by the owner or operator except when necessary to prevent the waste from freezing or to maintain adequate waste flow conditions for continuous normal process operations. Third, the hazardous waste cannot be treated using a waste stabilization process or a process that produces an exothermic reaction. Finally, the maximum organic vapor pressure of the hazardous waste in the tank must be less than the limit established in the rule by tank design capacity. For a tank having a design capacity equal to or greater than 151 m\3\ (approximately 40,000 gallons), then the maximum organic vapor pressure of the hazardous waste in the tank must be less than 5.2 kPA. For a tank having a design capacity equal to or greater than 75 m\3\ (approximately 20,000 gallons) but less than 151 m\3\, then the maximum organic vapor pressure of the waste in the tank must be less

than 27.6 kPa. For a smaller tank (design capacity less than 75 m\3\), the maximum organic vapor pressure must be less than 76.6 kPa.
The subpart CC standards require each cover opening not vented to a control device to be maintained in a closed, sealed position except at those times when a specific opening must be used to add, remove, inspect, or sample the waste in the tank or when it is necessary to use the opening to inspect, maintain, or repair equipment located inside the tank. Also, safety devices that vent directly to the atmosphere may be used on the tank, cover, closed-vent system, or control device provided that the safety device is not used for planned or routine venting of organic vapors. These safety devices are to remain in a closed position except when an unplanned event requires that the device be open for the purpose of preventing physical damage or permanent deformation of the tank, cover, closed-vent system, or control device in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. An example of an unplanned event is a sudden power outage.

5. Surface Impoundment Standards
The surface impoundment standards establish the requirements for surface impoundments using air emission controls to comply with the general standards of the rule. No air emission controls are required under the subpart CC standards for a surface impoundment in which all hazardous waste placed in the unit has been treated to remove or destroy organics in accordance with the requirements specified in the general standards. Also, air emission controls are not required for a surface impoundment in which biological treatment of a hazardous waste is performed under the same conditions specified in the rule for tanks. The surface impoundment standards specify that the owner or operator install and operate on each affected surface impoundment a cover (e.g., air-supported structure) that is connected through a closed-vent system to a control device. Under the subpart CC standards, an owner or operator is allowed to use a floating membrane cover (without any additional controls) for affected surface impoundments under certain conditions specified in the rule. The requirements under the subpart CC standards for surface impoundment air emission control equipment are consistent with the requirements for tanks.

6. Container Standards
The container standards establish the requirements for affected containers (containers with a design capacity greater than or equal to 0.1 m\3\) using air emission controls to comply with the general standards of the rule. No air emission controls are required by the subpart CC standards for any container with a design capacity less than 0.1 m\3\ regardless of the volatile organic concentration of the hazardous waste placed in the container. For affected containers used for storage, treatment, or handling of hazardous waste, the owner or operator is required to use either: (1) A container that is equipped with a vapor leak-tight cover; (2) a container having a design capacity less than or equal to 0.46 m\3\ (approximately 119 gallons) that is equipped with a cover and complies with all applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous waste for transport under 49 CFR part 178; or (3) a container that is attached to or forms a part of any truck, trailer, or railcar and that has been demonstrated within the preceding 12 months to be organic vapor tight in accordance with the procedure specified in Method 27. For a container in which treatment of hazardous waste is performed, the owner or operator is required to place the container inside an enclosure that is connected through a closed-vent system to a control device at all times that the container is completely or partially uncovered during the treatment operation. Transfer of hazardous waste by pumping into a container having a design capacity greater than 0.46 m\3\ is required to be performed using submerged fill loading.

The requirement for use of leak-tight covers on containers is established by testing the cover for no detectable organic emissions as determined using Method 21 in 40 CFR part 60, appendix A. The test is performed when all openings in the cover (e.g., lids, bungs, hatches, and sampling ports) are secured in a closed, sealed position. Under certain circumstances, the EPA has determined that a cover other than a rigid, gasketed cover can be used on a container that will meet the requirement for no detectable organic emissions. For example, the EPA has concluded that use of a tarpaulin with a vapor-suppressing foam is an acceptable cover for roll-off boxes used for short-term storage (e.g., less than 30 days) of bulk solid materials (refer to RCRA docket entry number F-94-CESP-S00507 for specific conditions under which this type of cover is acceptable).

As an alternative to using covers tested for no detectable organic emissions on drums and other containers with a design capacity less than or equal to 0.46 m\3\, the subpart CC standards allow an owner or operator to place the hazardous waste in drums meeting the DOT specifications and testing requirements under 49 CFR part 178. When a container meeting these DOT regulations is used, no leak detection monitoring nor recordkeeping for the container is required by the subpart CC standards. It is important to note that none of the exceptions to the 49 CFR part 178 regulations other than the exception for lab packs used for combination packagings as specified in 49 CFR 173.12(b) apply to a container for the purpose of complying with the subpart CC standards.

The subpart CC container standards allow use of a tank truck or tank railcar that has been tested for organic vapor tightness within the preceding 12 months in accordance with the requirements of Method

7. This method is a pressure test procedure originally developed by the EPA for determining the vapor-leak tightness of a tank truck into which gasoline is placed. The EPA considers Method 27 also appropriate for determining vapor-leak tightness of tank trucks and railcars into which hazardous wastes containing volatile organics are placed. No Method 21 leak monitoring or recordkeeping is required for tank trucks or tank railcars complying with this provision of the rule. When it is necessary for a container to be open during certain treatment processes, the subpart CC standards require the container to be located in an enclosure connected to a closed-vent system with control device. The enclosure must be designed to operate with sufficient airflow into the structure to capture all organic vapors vented from the container and route the vapors through the closed-vent system to the control device. The enclosure may have permanent or temporary openings to allow worker access, passage of containers through the enclosure by conveyor or other mechanical means, entry of permanent mechanical or electrical equipment, or to direct airflow into the enclosure. Whenever an open container is placed inside the enclosure, the pressure drop across each opening in the enclosure is to be maintained at a pressure below atmospheric pressure such that no organic vapors released from the container can exit the enclosure through the opening.

   Finally, the container standards include the same unit and control equipment safety venting provisions allowed under the subpart CC standards for tanks and surface impoundments.

8. Closed-Vent System and Control Device Requirements The design and operating requirements under the final subpart CC standards for a closed-vent system with control device are the same as those already applicable to TSDF owners and operators under subpart AA in 40 CFR parts 264 and 265 with one exception. The subpart CC standards require that each control device achieve at least a 95 percent reduction in the total organic content of the vapor stream vented to the device or, in the case of an enclosed combustion device, a reduction of the total organic content of the vapor stream to a level less than or equal to 20 ppmw on a dry basis corrected to 3 percent oxygen.

The standards do not require the use of any specific type of equipment or add-on control device. The standards allow the owner or operator the flexibility of choosing the control device best suited for a control application based on the characteristics of the particular organic vapor stream. Furthermore, the subpart CC standards do not require that each tank, surface impoundment, and container be vented to a separate control device dedicated to that particular unit. Vent streams from several units can be combined and discharged to a single control device that achieves the required level of performance.

9. Inspection and Monitoring

The subpart CC standards provide exemptions from inspection and monitoring for specific circumstances defined in the rule. In the case of an underground tank, only those portions of the tank cover and those connections to the tank cover or tank body (e.g., fill ports, access hatches, gauge wells, etc.) that extend to or above the ground surface and can be opened to the atmosphere must be inspected and monitored. Leak monitoring using Method 21 in 40 CFR part 60, appendix A, is not required for the following: (1) Drums that meet applicable DOT regulations specified in the rule; (2) tank trucks and tank railcars that are annually demonstrated to be vapor-tight by Method 27 in 40 CFR part 60, appendix A; and (3) closed-vent systems and control devices operated in vacuum service (i.e., equipment that is operated at an internal pressure that is at least 5 kPa below ambient pressure) or closed-vent system connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed pipe flange). Also, semiannual leak monitoring is not required for a cover opening that has continuously remained in the closed, sealed position for the entire period since the cover opening was last monitored.

To ensure that emission control equipment is properly operated and maintained, the subpart CC standards require the TSDF owner or operator to visually inspect certain emission control equipment items semiannually. For example, emission control equipment covers on tanks are to be checked semiannually by facility employees to ensure that equipment is being used properly (e.g., covers are closed and latched except when an opening must be used to add, remove, inspect, or sample the waste in the tank or to inspect, maintain, replace, or repair equipment located inside the tank or to vent gases or vapors from the tank) and the equipment is being maintained in good condition (e.g., no visible holes, gaps, tears, or splits have developed in covers).

Continuous monitoring of control device operation is required under the subpart CC standards. This involves the use of automated instrumentation to measure critical operating parameters that indicate whether the control device is operating correctly or is malfunctioning. Semiannual leak detection monitoring using Method 21 under 40 CFR part 60, appendix A, is required for certain cover components to ensure gaskets and seals are in good condition and for closed-vent systems to ensure all fittings remain leak-tight. In addition, with the previously noted exception of permanently or semi-permanently sealed connections, each closed-vent system must be monitored for leaks using Method 21 at least once per year.

Special inspection and monitoring provisions are included in the final subpart CC standards for cover fittings that are unsafe or difficult for facility personnel to inspect and monitor. A TSDF owner or operator may designate a cover fitting as ``unsafe to inspect and monitor'' if a worker would be exposed to dangerous, hazardous, or other unsafe conditions when performing the inspection or monitoring. A cover fitting that is designated as unsafe must be inspected and monitored as frequently as practicable during those times when it is safe to inspect and monitor the fitting. Similarly, a cover may be designated as ``difficult to inspect and monitor'' if in so doing a worker would be elevated to a height more than 2 meters above a support surface and the cover was installed before June 5, 1995. A

cover fitting that is designated as difficult must be monitored and inspected at least once per calendar year.
The subpart CC standards require that the TSDF owner or operator repair a cover fitting found to be leaking within 15 days of detection. Repair of control equipment on a tank or surface impoundment may be delayed beyond 15 calendar days under certain circumstances. To delay repair, the owner or operator must document that the repair cannot be completed without emptying the contents of the unit and also that removing the unit from service would result in the unscheduled cessation of production from the process unit or operation of the waste management unit that is generating the hazardous waste. Repair of this control equipment must be completed the next time the process unit or waste management unit that is generating the hazardous waste managed in the tank or surface impoundment is shut down.

10. Recordkeeping Requirements

The final subpart CC standards require the TSDF owner or operator to record certain information in the on-site facility operating logs or files. This information is to be readily available for review by authorized representatives of the EPA. Consistent with 40 CFR 264.73 and 40 CFR 265.73, the rule requires that air emission control equipment design records and certain other records be maintained in the facility operating record until facility closure. Records and results of waste determinations, inspections, and monitoring are required to be kept for at least 3 years from the date of entry. The information to be collected and recorded includes: the results of all waste determinations such as of volatile organic concentration at the point of waste origination and organic vapor pressure; design specifications for closed-vent systems and control devices and certain control equipment; emission control equipment inspection and monitoring results; Methods 27 test results; control device exceedances and actions taken to remedy them; leak repairs; management of carbon removed from carbon adsorption systems; identification of incinerators, boilers, or industrial furnaces used to treat hazardous waste in accordance with the general requirements of the rule; documentation for biological wastewater treatment units using air emission controls in accordance with the rule requirements; and identification of equipment fittings designated as unsafe or difficult to monitor or inspect. At a facility where air emission control equipment required by the final rule cannot be in operation by June 5, 1995, the owner or operator is required to prepare an implementation schedule for the air emission control equipment specifying dates by which progress will be completed by the facility owner or operator to ensure the required air emission controls are in operation no later than December 8, 1997. Alternatively, the owner or operator may come into compliance by modifying facility processes to eliminate waste streams with average volatile organic concentration greater than or equal to 100 ppmw at the point of waste origination. At a minimum, specific calendar dates shall be established for award of contracts or issuance of purchase orders for the air emission control equipment; initiation of on-site installation of the equipment; completion of the equipment installation; and performance of any testing to demonstrate that the installed air emission control equipment meets the standards. The EPA recognizes that, in some cases, owners or operators may be unable to meet the implementation date for reasons beyond their control. For example, several commenters pointed out that permit modifications may be required to implement necessary changes, and that modification processes can be lengthy. The EPA developed this rule to be self-implementing and to eliminate the need for permit modifications to the extent possible; furthermore, in the final rule the implementation period has been extended from 2 to 3 years. Therefore, the EPA expects that most if not all facilities will be able to comply. However, the EPA acknowledges that in some cases State

permits may have to be modified (e.g., when surface impoundments are replaced with tanks). If the permit process is lengthy, or undergoes extensive appeal, the facility's ability to comply with the implementation date may be jeopardized. To address this and similar situations, the EPA has included a provision that will allow the Regional Administrator to extend the implementation date in situations beyond the owner or operator's control, where he or she made all reasonable and prudent efforts to meet the date. The EPA emphasizes that this extension would be available only where meeting the date was truly beyond the facility's control, and the EPA expects its application would be limited to situations such as delays in State permit processing. The extension would not be available where the facility's planning was at fault, a permit application was submitted unreasonably late, or permit processing was delayed because the permit application was inadequate. In some cases, the owner or operator of a facility in interim status at the time this rule becomes effective may not be able to implement the requirements of the rule before EPA (or an authorized state) issues the facility its RCRA permit. In this case, the EPA will generally incorporate the facility's implementation schedule into the permit, in accordance with the requirements of 40 CFR 270.33, which allows schedules of compliance in RCRA permits. Consistent with this approach, 40 CFR 270.27(a)(7) requires permit applicants to submit their schedules of implementation with their permit applications, if the owner or operator cannot implement the requirements of this rule before permit issuance.

As the EPA develops new hazardous waste listings or characteristics in the future, new containers, tanks, and surface impoundments will become subject to subpart CC standards. For these units, the effective date of the standards will be the effective date of the new listing or characteristic. Owners or operators of these units must institute controls by that date. In cases when owners or operators cannot comply with the applicable requirements of the subpart CC standards by this date, they must install and operate required air emission control equipment no later than 30 months after the effective date provided that they prepare a implementation schedule (as described above) for this control equipment by the effective date.

11. Reporting Requirements

The final subpart CC standards in 40 CFR part 264 require a TSDF owner or operator to submit reports to the EPA only when circumstances occur at the facility resulting in noncompliance with certain provisions of the rule. There are no reporting requirements under 40 CFR 265 subpart CC for owners and operators of interim-status TSDF. Each report required under the final subpart CC standards in 40 CFR part 264 is to be submitted to the EPA Regional office having jurisdiction for a particular TSDF location. The report is required to be signed and dated by an authorized representative of the facility owner or operator.

A TSDF owner or operator subject to the requirements of 40 CFR 264 subpart CC must report to the EPA all circumstances resulting in placement of a hazardous waste in a tank, surface impoundment, or container subject to the rule and not using air emission controls required by the rule when either of the following conditions occur: (1) The hazardous waste has a volatile organic concentration equal to or greater than 100 ppmw as determined on a mass-weighted average basis at the point of waste origination, or (2) the process used to treat the hazardous waste fails to meet the applicable conditions specified in the rule. The owner or operator must submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the circumstances.

A TSDF owner or operator subject to the requirements of 40 CFR part 264, subpart CC and using a control device in accordance with the requirements of the rule is required to submit a semiannual written report to the EPA. This report is to describe each occurrence during

the previous 6-month period when a control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in 40 CFR 264.1035(c)(4) or when a flare is operated with visible emissions as defined in 40 CFR 264.1033(d). A TSDF owner or operator is not required to submit this report for a 6-month period during which all control devices at a facility subject to the subpart CC standards are operated by the owner or operator so that during no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in the rule.

B. TSDF Miscellaneous Unit Requirements

The EPA permits miscellaneous units at TSDF on a case-by-case basis with terms and provisions as needed to protect public health and the environment through generic performance standards specified in 40 CFR 264.601. Today's rule amends Sec. 264.601 to include the air emission controls required by the standards under 40 CFR part 264, subparts AA, BB, and CC among the ``appropriate'' controls a permit writer may require for a miscellaneous unit.

Application of the air standards under 40 CFR part 264, subparts AA, BB, and CC to subpart X miscellaneous units will require determining which one of the waste management unit categories (e.g., tank, surface impoundment, container), if any, is most similar to the miscellaneous unit. As an example, hazardous waste is sometimes stored or treated in a miscellaneous unit consisting of a flexible, synthetic liner supported by an above ground metal frame (instead of a depression formed of earthen materials as is the case for a surface impoundment). Placing hazardous waste containing organics in this type of miscellaneous unit could result in significant organic emissions from the exposed waste surface comparable to those resulting from placing the waste in a similar size surface impoundment. Using the types of air emission controls applicable to surface impoundments (e.g., floating membrane cover) would reduce organic emissions from this type of miscellaneous unit. Therefore, in the case where the miscellaneous unit is determined to resemble a surface impoundment, a subpart X permit may be issued that includes air emission control requirements for surface impoundments under the subpart CC standards. The same application of the rule would be true for a miscellaneous unit used to manage organiccontaining hazardous waste and determined to be similar to a tank or a container.

C. 90-Day Tanks and Containers Requirements

Today's final rulemaking amends subparts I and J of 40 CFR part 265 to add a requirement that 90-day tanks and containers covered by these subparts also have to comply with air emission control requirements in subparts AA, BB, and CC. The rule adds these provisions as conditions with which generators must comply to not be required to obtain a permit for on-site tanks and containers used to accumulate hazardous waste.

D. Amendments to Subparts AA and BB Standards

Today's action adds new requirements for TSDF owners and operators using activated carbon adsorption systems to comply with the control device requirements of subparts AA and BB under 40 CFR parts 264 and 265. These requirements specify the procedures for managing the spent carbon removed from the control devices, and are consistent with the requirements promulgated today in subpart CC under 40 CFR parts 264 and 265.

VIII. Implementation of Final Rule

A. Existing Sources

Today's action by the EPA modifies the ``permit-as-a-shield'' practice for implementation of RCRA rules by owners and operators of existing TSDF for which final RCRA permits have been issued by the EPA. The EPA is amending 40 CFR 270.4 to require that owners and operators of TSDF that have been issued final permits prior to June 5, 1995, comply with the air standards under 40 CFR part 265, subparts AA, BB, and CC until the facility's permit is reviewed or reissued by the EPA. This amendment eliminates application of the ``permit-as-a-shield'' practice for these air standards but does not require that the EPA or the TSDF owner or operator initiate a permit modification to add the requirements of 40 CFR part 264, subparts AA, BB, or CC. The EPA believes that this will minimize the administrative burden on the TSDF owner or operator as well as limit the additional burden on the permitting resources of the EPA. However, when a permit is reopened or subject to renewal, or when a TSDF owner or operator submits a Class 3 modification request pertaining to an existing unit or addition of a new unit subject to these standards (e.g., a modification regarding a tank, surface impoundment, or container), then the applicable requirements of 40 CFR part 264, subparts AA, BB, and CC shall be incorporated into the permit conditions. The subpart CC standards promulgated today are implemented on the following schedule by owners and operators of existing TSDF (except for tanks in which waste stabilization activities are performed as of December 6, 1994, as explained in section VI.F of this preamble): (1) All owners and operators of existing TSDF become subject to the requirements of 40 CFR part 265, subparts AA, BB, and CC effective June 5, 1995.
(2) Beginning June 5, 1995, each TSDF owner or operator is required to be in compliance with 40 CFR part 265, subparts AA, BB, and CC. Implementation of the leak detection and repair program required by the subpart BB standards is required by this date. At a facility where the air emission controls required by the subpart AA, BB, and CC standards are not in place, the owner or operator must have one of the following in the facility's operating record: An implementation schedule for the air emission controls in accordance with the recordkeeping requirements of the rule or the facility's waste determination that indicates that air emission controls are not required. (3) No later than December 8, 1997, the air emission controls required by 40 CFR part 265, subparts AA, BB, and CC must be installed and in operation.
All final permits, or Class 3 permit modifications, issued by the EPA after June 5, 1995, must incorporate the requirements of 40 CFR part 264, subparts AA, BB, and CC. The owner and operator of an interim status TSDF who have submitted Part B applications to the EPA but have not received a draft permit as of June 5, 1995, are required to modify the Part B application to incorporate the requirements of 40 CFR part 264, subparts AA, BB, and CC prior to a draft permit being issued by the EPA. However, if the owner and operator have received a draft permit as of June 5, 1995, then the requirements of 40 CFR part 264, subparts AA, BB, and CC must be incorporated into the permit conditions prior to final permit determination. The Regional Administrator may establish, on a case-by-case basis, a reasonable date for submittal of the revised Part B application.
An existing solid waste management unit (or facility) may become a hazardous waste management unit (or facility) requiring a RCRA permit when a waste becomes newly listed or identified as hazardous. Owners and operators of TSDF not previously requiring a RCRA permit who have existing units handling newly listed or identified hazardous waste can submit a Part A application and gain interim status. The air standards being promulgated today are implemented at these facilities on the following schedule:
(1) 180 days following the date the waste is listed or identified as hazardous waste, the standards become effective; all facilities become subject to the standards.
(2) Beginning June 5, 1995, each TSDF owner or operator is required to be in compliance with the subpart AA, BB, and CC standards. At a facility where the air emission controls required by the subpart AA, BB, and CC standards are not in place, the owner or operator must have one of the following in the facility's operating record: an implementation schedule

for the air emission controls in accordance with the recordkeeping requirements of the rule, or the facility's waste determination that indicates that air emission controls are not required.
(3) No later than December 8, 1997, the controls required by the standards must be installed at all facilities.

B. New Sources

All air emission controls required by 40 CFR part 264, subparts AA, BB, and CC must be in place and operating upon startup of a new TSDF. Under 40 CFR 270.10, owners and operators of new TSDF are required to submit Part A and Part B permit applications and to receive a final permit from the EPA prior to construction of the facility. The Part B application for a new facility must incorporate the requirements of 40 CFR part 264. Owners and operators who have submitted a Part B application for a new TSDF but have not been issued a final permit as of June 5, 1995, are required to modify their Part B applications to incorporate the requirements of 40 CFR part 264, subpart CC.

C. State Authority

1. Applicability of Rule in Authorized States Under RCRA section 3006, the EPA may authorize a qualified State to administer and enforce the RCRA program within the State (refer to 40 CFR part 271 for the standards and requirements for authorization). Although an authorized State has primary responsibility for enforcement of RCRA, the EPA retains enforcement authority under RCRA sections 3008, 7003, and 3013, as well as inspection authority under RCRA section 3007.
   Prior to the enactment of the HSWA, a State with final authority administered its hazardous waste program entirely in lieu of the EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and the EPA could not issue permits for facilities in that State. When new, more stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent requirements within specified time frames. The new Federal requirements did not take effect as Federal law in an authorized State until the State adopted the requirements as State law and was granted authority by the EPA to administer the requirements.
   In contrast, new Federal requirements promulgated under authority of the HSWA, become effective in authorized States at the same time they are effective in nonauthorized States. Under RCRA section 3006(g)(1), the EPA is directed to administer the new Federal requirements in authorized States, including the issuance of permits, until the State is granted authority to do so. While authorized States must still adopt all new RCRA provisions as State law to retain final authorization, requirements promulgated under RCRA provisions added by the HSWA are administered by the EPA as Federal law in authorized States in the interim.
   Today's rules are promulgated under authority of RCRA section 3004(n), a provision added to RCRA by the HSWA. Therefore, the EPA is adding the requirements of the rules to Table 1 in 40 CFR 271.1(j). This table identifies the Federal program requirements that are promulgated pursuant to the HSWA and that take effect in all States, regardless of their authorization status.
2. Effect on State Authorizations
   The EPA will implement the air standards promulgated today in an authorized State until such a time when the State either: (1) Modifies its RCRA program to adopt the rule and receives final authorization from the EPA for the modification; or (2) receives interim authorization from the EPA as described below. Because these air standards are promulgated under authority of the HSWA, a State submitting a program modification may apply to receive either interim

or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to the EPA's. The procedures and schedule for State program modifications for either interim or final authorization are described in 40 CFR 271.21. The availability of HSWA interim authorization was recently extended by the EPA until January 1, 2003 (see 57 60129, December 18, 1992).

In accordance with the requirements of 40 CFR 271.21(e)(2), States with final authorization must modify their programs to reflect Federal program changes and subsequently must submit the modifications to the EPA for approval. The deadline by which a State must modify its RCRA program to adopt today's rulemaking is determined by the date of promulgation of the final rule, in accordance with 40 CFR 271.21(e)(2). This deadline can be extended in certain cases [40 CFR 271.21(e)(3)]. Once the EPA approves the modification, the State requirements become subtitle C RCRA requirements.

A State that submits its Base program application less than 12 months after the effective date of these standards is not required to include standards equivalent to these standards in its application. However, the State must modify its program by the deadlines set forth in 40 CFR 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these standards must include standards equivalent to these standards in their applications. The 40 CFR 271.3 sets forth the requirements a State must meet when submitting its final authorization application. States with authorized RCRA programs may already have requirements similar to those in today's rule. Such State regulations have not been assessed against the Federal regulations being finalized today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements as RCRA requirements until the State program modification is assessed against Federal requirements and approved. Of course, States with existing standards may continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, the EPA will work with States under cooperative agreements to minimize duplication of efforts. In many cases, the EPA will be able to defer to the States in their efforts to implement their programs, rather than take separate actions under Federal authority.

IX. Test Methods

A. Method 25D

Method 25D in 40 CFR part 60, appendix A is the applicable test method for the determination of the volatile organic concentration of wastes. Method 25D was originally proposed as a part of this rulemaking but was subsequently promulgated in a separate rulemaking (see 56 FR 19402, April 22, 1994). Responses to comments received on the proposed Method 25D as part of this rulemaking are presented in the BID for today's final rule. Additional comments and responses relevant to the proposed Method 25D that were received as part of other EPA rulemakings are available in Air Docket Number A-90-23 located at the EPA's Air and Radiation Docket Information Center, Waterside Mall, room 1500, 1st Floor, 401 M Street, SW., Washington, DC 20460. The sampling requirements in Method 25D have been changed since proposal. The promulgated version of Method 25D requires that samples of waste be collected from a source following specific procedures for sampling a single-phase or well-mixed waste, a multiple-phase waste, and solid materials. Each sample is suspended in an organic/aqueous matrix, then heated and purged with nitrogen for 30 minutes to separate certain organic compounds. A portion of the sample is analyzed for carbon concentration, as methane, with a flame ionization detector. The other portion of the sample is analyzed for chlorine concentration, as chloride, with an electrolytic conductivity detector. The volatile organic

concentration of the waste is then computed as the sum of the measured carbon and chlorine contents.

B. Method 25E

Method 25E is the applicable test method for determining the organic vapor pressure of waste managed in tanks. The version of Method 25E promulgated today in 40 CFR part 60, appendix A, is the same as the proposed version with one addition to the sampling requirements to provide for sampling waste in a tank. Method 25E requires collection of a waste sample in a headspace sample vial and transfer of the vial to a balanced pressure headspace sampler. The headspace vapor of the sample is analyzed for carbon content by a headspace analyzer, which uses a flame ionization detector.

X. Administrative Requirements

A. Paperwork Reduction Act

The information collection requirements in these rules have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq., and have been assigned control number 1593.02. To aid the EPA with enforcement of the rule being promulgated today, TSDF owners and operators and hazardous waste generators subject to today's action are required to record certain information in the onsite facility operating logs or files. The recordkeeping requirements for each respondent (i.e., person subject to the rule) will vary depending on a variety of site-specific factors. These factors include: the number of tanks, surface impoundments, and containers subject to the rule in operation at the respondent's facility; the number of hazardous waste streams managed at the facility; the type of waste determination methods selected by the respondent; and the type of air emission control equipment selected by the respondent to comply with the requirements of the rule.
This collection of information has an estimated reporting burden averaging 1.4 hours per response and an estimated annual recordkeeping burden averaging 62.5 hours per respondent. These estimates include time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.
In general, a respondent is not required to submit any reports to the EPA unless certain events occur at the respondent's facility in which a hazardous waste is improperly managed in a unit not using the required air emission controls or a control device malfunction cannot be corrected by the respondent within 24 hours of being detected. Thus, the EPA expects that many respondents complying with this rule will have no reporting burden. On a nationwide average basis, the public reporting burden resulting from today's action is estimated by the EPA to be approximately 2 hours per year per respondent. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Chief, Information Policy Branch; EPA; 401 M St., S.W. (Mail Code 2136); Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked ``Attention Desk Officer for EPA.''

B. Executive Order 12866 Review

Under Executive Order 12866, (58 FR 51735, October 4, 1993) the Agency must determine whether the regulatory action is ``significant'' and therefore subject to OMB review and the requirements of the Executive Order. The Order defines ``significant regulatory action'' as one that is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''
Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a ``significant regulatory action'' based on the estimated annual cost of the rulemaking to the economy (i.e., the EPA's estimate of nationwide annual costs for the subpart CC standards exceeds $100 million). As such, the EPA has submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

C. Regulatory Flexibility Act

Under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.), whenever a Federal agency publishes any proposed or final rule in the Federal Register, it must prepare a Regulatory Flexibility Analysis (RFA) that describes the impact of the rule on small entities (i.e., small businesses, organizations, and governmental jurisdictions). This analysis is not necessary, however, if the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.
The EPA has established guidelines for determining whether an RFA is required for the EPA rulemaking. These guidelines state that, if a preliminary analysis indicates that a proposed regulation would affect 20 percent or more of ``small entities'', then an RFA is to be prepared. In addition, these guidelines are used to evaluate if a regulation will have a ``significant impact'' on small entities. A regulation is considered by the EPA to have a ``significant impact'' if any one of the following four criteria is met: (1) Annual compliance costs increase the relevant production costs for small entities by more than 5 percent; (2) The ratio of compliance costs to sales will be 10 percent higher for small entities than for large entities; (3) Capital costs of compliance will represent a significant portion of the capital available to small entities, taking into account internal cash flow plus external financing capabilities; (4) Costs of the regulation will likely result in closures of small entities.
The EPA used the economic impact model developed for the RIA to estimate the effects of today's rulemaking on small entities (refer to Chapter VI of the RIA for additional details). The results of this analysis indicate that the effects of the air standards on small entities are minimal. The number of affected small entities is insubstantial, and the impacts are insignificant. Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that these final rules promulgated today will not have a significant impact on a substantial number of small entities. Therefore, an RFA is not required for this rulemaking.

D. Docket

Three RCRA dockets contain information pertaining to today's rulemaking:
(1) RCRA docket number F-91-CESP-FFFFF, which contains copies of all BID references and other information related to the development of the rule up through proposal;
(2) RCRA docket number F-92-CESA-FFFFF, which contains copies of the supplemental data made available for public comment prior to promulgation; and
(3) RCRA docket number F-94-CESF-FFFFF, which contains copies of all BID references and other information related to development of the final rule following proposal.

The public may review all materials in these dockets at the EPA RCRA Docket Office.

The EPA RCRA Docket Office is located in room 2427 of the U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460. The Docket Office is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays. The public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (202) 260-9327. An individual may copy a maximum of 100 pages of material from any one regulatory docket free of charge. Additional pages of material from the docket may be copied at a charge of $0.15 per page.

XI. Legal Authority

These regulations are promulgated under the authority of sections 2002, 3001-3007, 3010, and 7004 of the Solid Waste Disposal Act of 1970, as amended by RCRA, as amended (42 U.S.C. 6921-6927, 6930, and 6974).

List of Subjects

40 CFR Part 9

Environmental protection, Reporting and recordkeeping requirements.

40 CFR Part 60

Air pollution control, Test method, Vapor-phase organic concentration, Volatile organic concentration, Waste, Waste testing.

40 CFR Part 260

Air pollution control, Incorporation by reference.

40 CFR Part 262

Accumulation time, Air pollution control, Container, Tank.

40 CFR Parts 264 and 265

Air pollution control, Container, Control device, Hazardous waste, Incorporation by reference, Inspection, Miscellaneous unit, Monitoring, Reporting and recordkeeping requirements, Standards, Surface impoundment, Tank, Waste determination.

40 CFR Part 270

Administrative practice and procedure, Air pollution control, Confidential business information, Hazardous waste, Permit, Permit modification, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Air pollution control, Confidential business information, Hazardous waste, Reporting and recordkeeping requirements.

Dated: November 15, 1994.
Carol M. Browner,
The Administrator.
For the reasons set out in the preamble, title 40, chapter I, parts 9, 60, 260, 262, 264, 265, 270, and 271 of the Code of Federal Regulations are amended as follows:

PART 9--OMB APPROVALS UNDER THE PAPERWORK REDUCTION ACT

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 et seq., 136-136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601-2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 et seq., 1311, 1313d, 1314, 1321, 1326, 1330, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971-1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g-1, 300g-2, 300g-3, 300g-4, 300g-5, 300g-6, 300j-1, 300j-2, 300j-3, 300j-4, 300j-9, 1857 et seq., 6901-6992k, 7401-7671q, 7542, 9601-9657, 11023, 11048.

2. Section 9.1 is amended by adding new entities in numerical order to the table under the indicated headings to read as follows:

Sec. 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control No.
*****	
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities	
*****	
264.1089	2060-0318
264.1090	2060-0318
*****	
Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities	
*****	
265.1090	2060-0318
*****	

PART 60--STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

3. The authority citation for part 60 continues to read as follows:

Authority: Sections 111, 301(a) of the Clean Air Act as amended (42 U.S.C. 7411, 7601(a)) unless otherwise noted.

4. Appendix A is amended by adding Method 25E:

Appendix A--Test Methods

* * * * *

Method 25E--Determination of Vapor Phase Organic

Concentration in Waste Samples

Introduction

Performance of this method should not be attempted by persons unfamiliar with the operation of a flame ionization detector (FID) nor by those who are unfamiliar with source sampling because knowledge beyond the scope of this presentation is required.

1. Applicability and Principle

1.1 Applicability. This method is applicable for determining the vapor pressure of waste samples which represent waste which is or will be managed in tanks.
1.2 Principle. The headspace vapor of the sample is analyzed for carbon content by a headspace analyzer, which uses an FID.

2. Interferences

2.1 The analyst shall select the operating parameters best suited to the requirements for a particular analysis. The analyst shall produce confirming data through an adequate supplemental analytical technique and have the data available for review by the Administrator.

3. Apparatus

3.1 Sampling. The following equipment is required: 3.1.1 Sample Containers. Vials, glass, with butyl rubber septa, Perkin-Elmer Corporation Numbers 0105-0129 (glass vials), B001-0728 (gray butyl rubber septum, plug style), 0105-0131 (butyl rubber septa), or equivalent. The seal must be made from butyl rubber. Silicone rubber seals are not acceptable. 3.1.2 Vial Sealer. Perkin-Elmer Number 105-0106, or equivalent. 3.1.3 Gas-Tight Syringe. Perkin-Elmer Number 00230117, or equivalent.
3.1.4 The following equipment is required for sampling. 3.1.4.1 Tap.
3.1.4.2 Tubing. Telfon, 0.25-in. ID. Note: Mention of trade names or specific products does not constitute endorsement by the Environmental Protection Agency.
3.1.4.3 Cooling Coil. Stainless steel (304), 0.25 in.-ID, equipped with a thermocouple at the coil outlet. 3.2 Analysis. The following equipment is required: 3.2.1 Balanced Pressure Headspace Sampler. Perkin-Elmer HS-6, HS-100, or equivalent, equipped with a glass bead column instead of a chromatographic column.
3.2.2 FID. An FID meeting the following specifications is required:
3.2.2.1 Linearity. A linear response (<plus-minus>5 percent) over the operating range as demonstrated by the procedures established in Section 6.1.2.
3.2.2.2 Range. A full scale range of 1 to 10,000 ppm CH<INF>4. Signal attenuators shall be available to produce a minimum signal response of 10 percent of full scale.
3.2.3 Data Recording System. Analog strip chart recorder or digital integration system compatible with the FID for permanently recording the output of the detector.
3.2.4 Thermometer. Capable of reading temperatures in the range of 30 deg. to 60 deg.C with an accuracy of <plus-minus>0.1 deg.C.

4. Reagents

4.1 Analysis. The following items are required for analysis: 4.1.1 Hydrogen (H<INF>2). Zero grade. 4.1.2 Carrier Gas. Zero grade nitrogen, containing less than 1 ppm carbon (C) and less than 1 ppm carbon dioxide. 4.1.3

Combustion Gas. Zero grade air or oxygen as required by the FID.
4.2 Calibration and Linearity Check. 4.2.1 Stock Cylinder Gas Standard. 100 percent propane. The manufacturer shall:
(a) Certify the gas composition to be accurate to <plus-minus>3 percent or better (see Section 4.2.1.1); (b) Recommend a maximum shelf life over which the gas concentration does not change by greater than <plus-minus>5 percent from the certified value; and
(c) Affix the date of gas cylinder preparation, certified propane concentration, and recommended maximum shelf life to the cylinder before shipment to the buyer.
4.2.1.1 Cylinder Standards Certification. The manufacturer shall certify the concentration of the calibration gas in the cylinder by (a) directly analyzing the cylinder and (b) calibrating his analytical procedure on the day of cylinder analysis. To calibrate his analytical procedure, the manufacturer shall use, as a minimum, a three-point calibration curve.
4.2.1.2 Verification of Manufacturer's Calibration Standards. Before using, the manufacturer shall verify each calibration standard by (a) comparing it to gas mixtures prepared in accordance with the procedure described in Section 7.1 of Method 106 of part 61, appendix B, or by (b) calibrating it against Standard Reference Materials (SRM's) prepared by the National Bureau of Standards, if such SRM's are available. The agreement between the initially determined concentration value and the verification concentration value shall be within <plus-minus>5 percent. The manufacturer must reverify all calibration standards on a time interval consistent with the shelf life of the cylinder standards sold.

5. Procedure

5.1 Sampling.
5.1.1 Install a sampling tap to obtain the sample at a point which is most representative of the unexposed waste (where the waste has had minimum opportunity to volatilize to the atmosphere). Assemble the sampling apparatus as shown in Figure 25E-1. BILLING CODE 6560-50-P

<GRAPHIC><TIFF>TR06DE94.000

BILLING CODE 6560-50-C
5.1.2 Begin sampling by purging the sample lines and cooling coil with at least four volumes of waste. Collect the purged material in a separate container and dispose of it properly. 5.1.3 After purging, stop the sample flow and transfer the Teflon sampling tube to a sample container. Sample at a flow rate such that the temperature of the waste is <10 deg.C (<50 deg.F). Fill the sample container halfway (<plus-minus>5 percent) and cap it within 5 seconds. Store immediately in a cooler and cover with ice.
5.1.4 Alternative sampling techniques may be used upon the approval of the Administrator.
5.2 Analysis.
5.2.1 Allow one hour for the headspace vials to equilibrate at the temperature specified in the regulation. Allow the FID to warm up until a stable baseline is achieved on the detector. 5.2.2 Check the calibration of the FID daily using the procedures in Section 6.1.2.
5.2.3 Follow the manufacturer's recommended procedures for the normal operation of the headspace sampler and FID. 5.2.4 Use the procedures in Sections 7.4 and 7.5 to calculate the vapor phase organic vapor pressure in the samples. 5.2.5 Monitor the output of the detector to make certain that the results are being properly recorded.

6. Operational Checks and Calibration

Maintain a record of performance of each item. 6.1 Use the procedures in Section 6.1.1 to calibrate the headspace analyzer and FID and check for linearity before the system is first placed in operation, after any shutdown longer than 6 months, and after any modification of the system.

6.1.1 Calibration and Linearity. Use the procedures in Section 6.2.1 of Method 18 of Part 60, Appendix A, to prepare the standards and calibrate the flowmeters, using propane as the standard gas. Fill the calibration standard vials halfway (<plus-minus>5 percent) with deionized water. Purge and fill the airspace with calibration standard. Prepare a minimum of three calibration standards in triplicate at concentrations that will bracket the applicable cutoff. For a cutoff of 5.2 kPa, prepare nominal concentrations of 30,000, 50,000, and 70,000 ppm as propane. For a cutoff of 27.6 kPa, prepare nominal concentrations of 200,000, 300,000, and 400,000 ppm as propane.
6.1.1.1 Use the procedures in Section 5.2.3 to measure the FID response of each standard. Use a linear regression analysis to calculate the values for the slope (k) and the y-intercept (b). Use the procedures in Sections 7.2 and 7.3 to test the calibration and the linearity.
6.1.2 Daily FID Calibration Check. Check the calibration at the beginning and at the end of the daily runs by using the following procedures. Prepare two calibration standards at the nominal cutoff concentration using the procedures in Section 6.1.1. Place one at the beginning and one at the end of the daily run. Measure the FID response of the daily calibration standard and use the values for k and b from the most recent calibration to calculate the concentration of the daily standard. Use an equation similar to 25E- 2 to calculate the percent difference between the daily standard and C<INF>s. If the difference is within 5 percent, then the previous values for k and b may be used. Otherwise, use the procedures in Section 6.1.1 to recalibrate the FID.

7. Calculations

7.1 Nomenclature.

A = Measurement of the area under the response curve, counts. b = y-intercept of the linear regression line. C<INF>a = Measured vapor phase organic concentration of sample, ppm as propane.
C<INF>ma = Average measured vapor phase organic concentration of standard, ppm as propane.
C<INF>m = Measured vapor phase organic concentration of standard, ppm as propane.
C<INF>s = Calculated standard concentration, ppm as propane. k = Slope of the linear regression line. P<INF>bar = Atmospheric pressure at analysis conditions, mm Hg (in. Hg).
P* = Organic vapor pressure in the sample, kPa (psi). <greek-b> = 1.333 X 10<SUP>-7 kPa/[(mm Hg)(ppm)], (4.91 X 10<SUP>-7 psi/[(in. Hg)(ppm)])

7.2 Linearity. Use the following equation to calculate the measured standard concentration for each standard vial.

C<INF>m = k A + b Eq. 25E-1

7.2.1 Calculate the average measured standard concentration (C<INF>ma) for each set of triplicate standards and use the following equation to calculate the percent difference (PD) between C<INF>ma and C<INF>s.

<GRAPHIC><TIF1>TR06DE94.001

The instrument linearity is acceptable if the percent difference is within five for each standard.
7.3 Relative Standard Deviation (RSD). Use the following equation to calculate the RSD for each triplicate set of standards.

<GRAPHIC><TIF2>TR06DE94.002

The calibration is acceptable if the RSD is within five for each standard concentration.

7.4 Concentration of organics in the headspace. Use the following equation to calculate the concentration of vapor phase organics in each sample.

C<INF>a = k A + b Eq. 25E-4

7.5 Vapor Pressure of Organics in the Headspace Sample. Use the following equation to calculate the vapor pressure of organics in the sample.

P* = <greek-b> P<INF>bar C<INF>a Eq. 25E-5

* * * * *

PART 260--HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL

5. The authority citation for part 260 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921-6927, 6930, 6934, 6935, 6937, 6938, 6939, and 6974.

6. Section 260.11 is amended by adding the following references to the end of paragraph (a) and by revising the first sentence of paragraph (b) to read as follows:

Sec. 260.11 References.

(a) * * *
API Publication 2517, Third Edition, February 1989, ``Evaporative Loss from External Floating-Roof Tanks,'' available from the American Petroleum Institute, 1220 L Street, Northwest, Washington, D.C. 20005. ``ASTM Standard Test Method for Vapor Pressure--Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope,'' ASTM Standard D 2879-92, available from American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, Pennsylvania 19103;

* * * * *

(b) The references listed in paragraph (a) of this section are also available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. * * *

PART 262--STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

8. The authority citation for part 262 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912(a), 6922, 6923, 6924, 6925, 6937 and 6938, unless otherwise noted.

8a. Section 262.34 is amended by revising paragraphs (a)(1)(i), (a)(1)(ii) and (d)(2) as follows:

Sec. 262.34 Accumulation time.

(a) * * *
(1) * * *
(i) In containers and the generator complies with subparts I AA, BB and CC of 40 CFR part 265; and/or
(ii) In tanks and the generator complies with subparts J, AA, BB and CC of 40 CFR part 265, except Secs. 265.197(c) and 265.200; and/or

* * * * *

(d) * * *
(2) The generator complies with the requirements of subpart I of part 265 of this chapter, except for Secs. 265.176 and 265.178;

* * * * *

PART 264--STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

9. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart B--General Facility Standards

Sec. 264.13 [Amended]

10. In Sec. 264.13, paragraph (b)(6) is amended by adding ``264.1083,'' after the phrase ``as specified in Secs. 264.17, 264.314, 264.341, 264.1034(d), 264.1063(d),''.
11. In Sec. 264.13, paragraph (b)(8) is added to read as follows:

Sec. 264.13 General waste analysis.

* * * * *

(b) * * *

(8) For owners and operators seeking an exemption to the air emission standards of subpart CC in accordance with Sec. 264.1082-- (i) The procedures and schedules for waste sampling and analysis, and the analysis of test data to verify the exemption. (ii) Each generator's notice and certification of the volatile organic concentration in the waste if the waste is received from off site.

* * * * *

Sec. 264.15 [Amended]

12. In Sec. 264.15, paragraph (b)(4) is amended by removing the word ``and'' after the phrase ``frequencies called for in Secs. 264.174, 264.193, 264.195, 264.226, 264.254, 264.278, 264.303, 264.347, 264.602, 264.1033, 264.1052, 264.1053,'' and adding ``264.1088, and 264.1091(b),'' after ``264.1058,''.

Subpart E--Manifest System, Recordkeeping, and Reporting

13. Section 264.73 is amended by revising paragraphs (b)(3) and (b)(6) to read as follows:

Sec. 264.73 Operating record.

* * * * *

(b) * * *

(3) Records and results of waste analyses and waste determinations performed as specified in Secs. 264.13, 264.17, 264.314, 264.341, 264.1034, 264.1063, 264.1083, 268.4(a), and 268.7 of this chapter.

* * * * *

(6) Monitoring, testing or analytical data, and corrective action where required by subpart F of this part and Secs. 264.19, 264.191, 264.193, 264.195, 264.222, 264.223, 264.226, 264.252 through 264.254, 264.276, 264.278, 264.280, 264.302 through 264.304, 264.309, 264.347, 264.602, 264.1034(c) through 264.304(f), 264.1035, 264.1063(d) through 264.1063(i), 264.1064, 264.1088, 264.1089, and 264.1091.

* * * * *

* Section 264.77 is amended by revising paragraph (c) to read as follows:

Sec. 264.77 Additional reports.

* * * * *

(c) As otherwise required by subparts F, K through N, AA, BB, and CC of this part.

Subpart I--Use and Management of Containers

15. Section 264.179 is added to read as follows:

Sec. 264.179 Air Emission Standards.

The owner or operator shall manage all hazardous waste placed in a container in accordance with the requirements of subpart CC of this part.

Subpart J--Tank Systems

16. Section 264.200 is added to read as follows:

Sec. 264.200 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the requirements of subpart CC of this part.

Subpart K--Surface Impoundments

17. Section 264.232 is added to read as follows:

Sec. 264.232 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the requirements of subpart CC of this part.

Subpart X--Miscellaneous Unit

Sec. 264.601 [Amended]

18. The introductory text of Sec. 264.601 is amended by adding the words ``and subparts AA through CC'' after ``subparts I through O''.

Subpart AA--Air Emission Standards for Process Vents

19. Section 264.1033 is amended by revising paragraph (k)(2) and adding paragraph (m) to read as follows:

Sec. 264.1033 Standards: Closed-vent systems and control devices.

* * * * *

(k) * * *

(2) Closed-vent systems shall be monitored to determine compliance with this section during the initial leak detection monitoring, which shall be conducted by the date that the facility becomes subject to the provisions of this section, annually, and at other times as requested by the Regional Administrator. For the annual leak detection monitoring after the initial leak detection monitoring, the owner or operator is not required to monitor those closed-vent system components which operate in vacuum service or those closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed pipe flange).

* * * * *

(m) The owner or operator using a carbon adsorption system shall document that all carbon removed from a carbon adsorption system to comply with Sec. 264.1033(g) and Sec. 264.1033(h) is managed in one of the following manners:

(1) Regenerated or reactivated in a thermal treatment unit that is

permitted under subpart X of this part; (2) Incinerated by a process that is permitted under subpart O of this part; or
(3) Burned in a boiler or industrial furnace that is permitted under subpart H of part 266 of this chapter.

* In part 264, subpart CC is added to read as follows: Subpart CC--Air Emission Standards for Tanks, Surface Impoundments, and Containers

Sec.

Subpart CC--Air Emission Standards for Tanks, Surface Impoundments, and Containers

Sec. 264.1080 Applicability.

(a) The requirements of this subpart apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either subparts I, J, or K of this part except as Sec. 264.1 and paragraph (b) of this section provide otherwise.
(b) The requirements of this subpart do not apply to the following waste management units at the facility: (1) A waste management unit that holds hazardous waste placed in the unit before June 5, 1995, and in which no hazardous waste is added to the unit on or after June 5, 1995.
(2) A container that has a design capacity less than or equal to 0.1 m<SUP>3.
(3) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan. (4) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
(5) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v) or 3008(h), CERCLA authorities, or similar Federal or State authorities. (6) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.
(c) For the owner and operator of a facility subject to this subpart and who received a final permit under RCRA section 3005 prior to June 5, 1995, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 40 CFR 124.15 or reviewed in accordance with the requirements of 40 CFR 270.50(d). Until such date when the owner and operator receives a final permit incorporating the requirements of this subpart, the owner and operator is subject to the requirements of 40 CFR part 265, subpart CC.

Sec. 264.1081 Definitions.

As used in this subpart, all terms shall have the meaning given to them in 40 CFR 265.1081, the Act, and parts 260 through 266 of this chapter.

Sec. 264.1082 Standards: General.

(a) This section applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this subpart. (b) The owner or operator shall control air emissions from each waste management unit in accordance with standards specified in Secs. 264.1084 through 264.1087 of this subpart, as applicable to the waste management unit, except as provided for in paragraph (c) of this section.
(c) A waste management unit is exempted from standards specified in Secs. 264.1084 through 264.1087 of this subpart provided that all hazardous waste placed in the waste management unit is determined by the owner or operator to meet either of the following conditions: (1) The average VO concentration of the hazardous waste at the point of waste origination is less than 100 parts per million by weight (ppmw). The average VO concentration shall be determined by the procedures specified in Sec. 264.1083(a) of this subpart. (2) The organic content of the hazardous waste has been reduced by an organic destruction or removal process that achieves any one of the following conditions:
(i) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C<INF>t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in Sec. 264.1083(b) of this subpart.
(ii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 50 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in Sec. 264.1083(b) of this subpart. (iii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in Sec. 264.1083(b) of this subpart.
(iv) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:
(A) The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R<INF>bio) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined in accordance with the procedures specified in Sec. 264.1083(b) of this subpart.
(B) The total actual organic mass biodegradation rate (MR<INF>bio) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in Sec. 264.1083(b) of this subpart.
(v) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions: (A) All of the materials entering the process are hazardous wastes. (B) From the point of waste origination through the point where the hazardous waste enters the process, the hazardous waste is continuously managed in waste management units which use air emission controls in accordance with the standards specified in Secs. 264.1084 through 264.1087 of this subpart, as applicable to the waste management unit. (C) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest

average VO concentration at the point of waste origination determined for each of the individual hazardous waste streams entering the process or 100 ppmw, whichever value is lower. The average VO concentration of each individual hazardous waste stream at the point of waste origination shall be determined using the procedure specified in Sec. 264.1083(a) of this subpart. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedure specified in Sec. 264.1083(b) of this subpart. (vi) A hazardous waste incinerator for which the owner or operator has either:
(A) Been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of subpart O of this part; or
(B) Has certified compliance with the interim status requirements of 40 CFR part 265, subpart O.
(vii) A boiler or industrial furnace for which the owner or operator has either:
(A) Been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of 40 CFR part 266, subpart H, or
(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.
(d) When a process is used for the purpose of treating a hazardous waste to meet one of the sets of conditions specified in paragraphs (c)(2)(i) through (c)(2)(v) of this section, each material removed from or exiting the process that is not a hazardous waste but has an average VO concentration equal to or greater than 100 ppmw shall be managed in a waste management unit in accordance with the requirements of paragraph (b) of this section.
(e) The Regional Administrator may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this section as follows:
(1) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of Sec. 264.1083(a) of this subpart. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of Sec. 264.1083(b) of this subpart.
(2) In a case when the owner or operator is requested to perform the waste determination, the Regional Administrator may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.
(3) In a case when the results of the waste determination performed or requested by the Regional Administrator do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of paragraph (e)(1) of this section shall be used to establish compliance with the requirements of this subpart.
(4) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Regional Administrator may elect to establish compliance with this subpart by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:
(i) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of Sec. 264.1083(a) of this subpart. (ii) Results of the waste determination performed or requested by the Regional Administrator showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 100 ppmw shall constitute noncompliance with this subpart except in a case as provided for in paragraph (e)(4)(iii) of this section.

(iii) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 100 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 100 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of Sec. 264.1083(a) and Sec. 264.1089 of this subpart shall be considered by the Regional Administrator together with the results of the waste determination performed or requested by the Regional Administrator in establishing compliance with this subpart.

Sec. 264.1083 Waste determination procedures.

(a) Waste determination procedure for average volatile organic (VO) concentration of a hazardous waste at the point of waste origination. (1) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in waste management units exempted under the provisions of Sec. 264.1082(c)(1) of this subpart from using air emission controls in accordance with standards specified in Sec. 264.1084 through Sec. 264.1087 of this subpart, as applicable to the waste management unit.
(2) The VO concentration at the point of waste origination for a hazardous waste shall be determined in accordance with the procedures specified in 40 CFR 265.1084(a)(2) through (a)(6) of this chapter. (b) Waste determination procedures for treated hazardous waste. (1) An owner or operator shall perform the applicable waste determinations for each treated hazardous waste placed in waste management units exempted under the provisions of Sec. 264.1082(c)(2) of this subpart from using air emission controls in accordance with standards specified in Sec. 264.1084 through Sec. 264.1087 of this subpart, as applicable to the waste management unit. (2) The waste determination for a treated hazardous waste shall be performed in accordance with the procedures specified in 40 CFR 265.1084(b)(2) through (b)(10), as applicable to the treated hazardous waste.
(c) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.
(1) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in tanks using air emission controls in accordance with standards specified in Sec. 264.1084(c) of this subpart.
(2) The maximum organic vapor pressure of the hazardous waste shall be determined in accordance with the procedures specified in 40 CFR 265.1084(c)(2) through (c)(4).

Sec. 264.1084 Standards: Tanks.

(a) This section applies to owners and operators of tanks subject to this subpart into which any hazardous waste is placed except for the following tanks:
(1) A tank in which all hazardous waste entering the tank meets the conditions specified in Sec. 264.1082(c) of this subpart; or (2) A tank used for biological treatment of hazardous waste in accordance with the requirements of Sec. 264.1082(c)(2)(iv) of this subpart.
(b) The owner or operator shall place the hazardous waste into one of the following tanks:
(1) A tank equipped with a cover (e.g., a fixed roof) that is vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (d) of this section; (2) A tank equipped with a fixed roof and internal floating roof in accordance with the requirements of Sec. 264.1091 of this subpart; (3) A tank equipped with an external floating roof in accordance with the requirements of Sec. 264.1091 of this subpart; or (4) A pressure tank that is designed to

operate as a closed system such that the tank operates with no detectable organic emissions at all times that hazardous waste is in the tank except as provided for in paragraph (g) of this section.
(c) As an alternative to complying with paragraph (b) of this section, an owner or operator may place hazardous waste in a tank equipped with a cover (e.g., a fixed roof) meeting the requirements specified in paragraph (d)(1) of this section when the hazardous waste is determined to meet all of the following conditions: (1) The hazardous waste is neither mixed, stirred, agitated, nor circulated within the tank by the owner or operator using a process that results in splashing, frothing, or visible turbulent flow on the waste surface during normal process operations; (2) The hazardous waste in the tank is not heated by the owner or operator except during conditions requiring that the waste be heated to prevent the waste from freezing or to maintain adequate waste flow conditions for continuing normal process operations; (3) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process or a process that produces an exothermic reaction; and
(4) The maximum organic vapor pressure of the hazardous waste in the tank as determined using the procedure specified in Sec. 264.1083(c) of this subpart is less than the following applicable value:
(i) If the tank design capacity is equal to or greater than 151 m<SUP>3, then the maximum organic vapor pressure shall be less than 5.2 kPa;
(ii) If the tank design capacity is equal to or greater than 75 m<SUP>3 but less than 151 m<SUP>3, then the maximum organic vapor pressure shall be less than 27.6 kPa; or (iii) If the tank design capacity is less than 75 m<SUP>3, then the maximum organic vapor pressure shall be less than 76.6 kPa. (d) To comply with paragraph (b)(1) of this section, the owner or operator shall design, install, operate, and maintain a cover that vents the organic vapors emitted from hazardous waste in the tank through a closed-vent system connected to a control device. (1) The cover shall be designed and operated to meet the following requirements:
(i) The cover and all cover openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable organic emissions when all cover openings are secured in a closed, sealed position.
(ii) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) at all times that hazardous waste is in the tank except as provided for in paragraph (f) of this section.
(2) The closed-vent system and control device shall be designed and operated in accordance with the requirements of Sec. 264.1087 of this subpart.
(e) The owner and operator shall install, operate, and maintain enclosed pipes or other closed-systems, EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a ``closed systems'', to: (1) Transfer all hazardous waste to the tank from another tank, surface impoundment, or container subject to this subpart except for those hazardous wastes that meet the conditions specified in Sec. 264.1082(c) of this subpart; and
(2) Transfer all hazardous waste from the tank to another tank, surface impoundment, or container subject to this subpart except for those hazardous wastes that meet the conditions specified in Sec. 264.1082(c) of this subpart.
(f) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid) at all times that hazardous waste is in the tank except when it is necessary to use the cover opening to:
(1) Add, remove, inspect, or sample the material in the tank; (2) Inspect, maintain, repair, or replace equipment located inside the tank; or
(3) Vent gases or vapors from the tank to a closed-vent system connected to a control device that is designed and operated in accordance with the requirements of Sec. 264.1087 of this subpart. (g) One or more safety devices which vent directly to the atmosphere may be used on the tank, cover, closed-vent system, or control device provided each safety device meets all of the following conditions:
(1) The safety device is not used for planned or routine venting of organic

vapors from the tank or closed-vent system connected to a control device; and
(2) The safety device remains in a closed, sealed position at all times except when an unplanned event requires that the device open for the purpose of preventing physical damage or permanent deformation of the tank, cover, closed-vent system, or control device in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. An example of an unplanned event is a sudden power outage.

Sec. 264.1085 Standards: Surface impoundments.

(a) This section applies to owners and operators of surface impoundments subject to this subpart into which any hazardous waste is placed except for the following surface impoundments: (1) A surface impoundment in which all hazardous waste entering the surface impoundment meets the conditions specified in Sec. 264.1082(c) of this subpart; or
(2) A surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of Sec. 264.1082(c)(2)(iv) of this subpart. (b) The owner or operator shall place the hazardous waste into a surface impoundment equipped with a cover (e.g., an air-supported structure or a rigid cover) that is vented through a closed-vent system to a control device meeting the requirements specified in paragraph (d) of this section.
(c) As an alternative to complying with paragraph (b) of this section, an owner or operator may place hazardous waste in a surface impoundment equipped with a floating membrane cover meeting the requirements specified in paragraph (e) of this section when the hazardous waste is determined to meet all of the following conditions: (1) The hazardous waste is neither mixed, stirred, agitated, nor circulated within the surface impoundment by the owner or operator using a process that results in splashing, frothing, or visible turbulent flow on the waste surface during normal process operations; (2) The hazardous waste in the surface impoundment is not heated by the owner or operator; and
(3) The hazardous waste is not treated by the owner or operator using a waste stabilization process or a process that produces an exothermic reaction.
(d) To comply with paragraph (b)(1) of this section, the owner or operator shall design, install, operate, and maintain a cover that vents the organic vapors emitted from hazardous waste in the surface impoundment through a closed- vent system connected to a control device.
(1) The cover shall be designed and operated to meet the following requirements:
(i) The cover and all cover openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable organic emissions when all cover openings are secured in a closed, sealed position.
(ii) Each cover opening shall be secured in the closed, sealed position (e.g., covered by a gasketed lid or cap) at all times that hazardous waste is in the surface impoundment except as provided for in paragraph (g) of this section.
(iii) The closed-vent system and control device shall be designed and operated in accordance with Sec. 264.1087 of this subpart. (e) To comply with paragraph (c) of this section, the owner or operator shall design, install, operate, and maintain a floating membrane cover that meets all of the requirements specified in 40 CFR 265.1086(e)(1) through (e)(4).
(f) The owner or operator shall install, operate, and maintain enclosed pipes or other closed-systems, EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a ``closed system'', to: (1) Transfer all hazardous waste to the surface impoundment from another tank, surface impoundment, or container subject to this subpart except for those hazardous wastes that meet the conditions specified in Sec. 264.1082(c) of this subpart; and
(2) Transfer all hazardous waste from the surface impoundment to another tank, surface impoundment, or container subject to this subpart except for

those hazardous wastes that meet the conditions specified in Sec. 264.1082(c) of this subpart.
(g) Each cover opening shall be secured in the closed, sealed position (e.g., a cover by a gasketed lid or cap) at all times that hazardous waste is in the surface impoundment except when it is necessary to use the cover opening to:
(1) Add, remove, inspect, or sample the material in the surface impoundment;
(2) Inspect, maintain, repair, or replace equipment located underneath the cover;
(3) Remove treatment residues from the surface impoundment in accordance with the requirements of 40 CFR 268.4; or (4) Vent gases or vapors from the surface impoundment to a closedvent system connected to a control device that is designed and operated in accordance with the requirements of Sec. 264.1087 of this subpart. (h) One or more safety devices that vent directly to the atmosphere may be installed on the cover, closed-vent system, or control device provided each device meets all of the following conditions:
(1) The safety device is not used for planned or routine venting of organic vapors from the surface impoundment or the closed-vent system connected to a control device; and
(2) The safety device remains in a closed, sealed position at all times except when an unplanned event requires that the device open for the purpose of preventing physical damage or permanent deformation of the cover, closed-vent system, or control device in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. An example of an unplanned event is a sudden power outage.

Sec. 264.1086 Standards: Containers.

(a) This section applies to the owners and operators of containers having design capacities greater than 0.1 m<SUP>3 subject to this subpart into which any hazardous waste is placed except for a container in which all hazardous waste entering the container meets the conditions specified in Sec. 264.1082(c) of this subpart. (b) An owner or operator shall manage hazardous waste in containers using the following procedures:
(1) The owner or operator shall place the hazardous waste into one of the following containers except when a container is used for hazardous waste treatment as required by paragraph (b)(2) of this section:
(i) A container that is equipped with a cover which operates with no detectable organic emissions when all container openings (e.g., lids, bungs, hatches, and sampling ports) are secured in a closed, sealed position. The owner or operator shall determine that a container operates with no detectable emissions by testing each opening on the container for leaks in accordance with Method 21 in 40 CFR part 60, appendix A the first time any portion of the hazardous waste is placed into the container. If a leak is detected and cannot be repaired immediately, the hazardous waste shall be removed from the container and the container not used to meet the requirements of this paragraph until the leak is repaired and the container is retested. (ii) A container having a design capacity less than or equal to 0.46 m<SUP>3 that is equipped with a cover and complies with all applicable Department of Transportation regulations on packaging hazardous waste for transport under 49 CFR part 178. (A) A container that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart is not subject to any exceptions to the 49 CFR part 178 regulations, except as noted in paragraph (b)(1)(ii)(B) of this section. (B) A lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).
(iii) A container that is attached to or forms a part of any truck, trailer, or railcar; and that has been demonstrated within the preceding 12 months to be organic vapor tight when all container openings are in a

closed, sealed position (e.g., the container hatches or lids are gasketed and latched). For the purpose of meeting the requirements of this paragraph, a container is organic vapor tight if the container sustains a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals. This condition is to be demonstrated using the pressure test specified in Method 27 of 40 CFR part 60, appendix A, and a pressure measurement device which has a precision of <plus-minus>2.5 mm water and which is capable of measuring above the pressure at which the container is to be tested for vapor tightness.
(2) An owner or operator treating hazardous waste in a container by either a waste stabilization process, any process that requires the addition of heat to the waste, or any process that produces an exothermic reaction shall meet the following requirements: (i) Whenever it is necessary for the container to be open during the treatment process, the container shall be located inside an enclosure that is vented through a closed-vent system to a control device.
(ii) The enclosure shall be a structure that is designed and operated in accordance with the following requirements: (A) The enclosure shall be a structure that is designed and operated with sufficient airflow into the structure to capture the organic vapors emitted from the hazardous waste in the container and vent the vapors through the closed-vent system to the control device. (B) The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The pressure drop across each opening in the enclosure shall be maintained at a pressure below atmospheric pressure such that whenever an open container is placed inside the enclosure no organic vapors released from the container exit the enclosure through the opening. The owner or operator shall determine that an enclosure achieves this condition by measuring the pressure drop across each opening in the enclosure. If the pressure within the enclosure is equal to or greater than atmospheric pressure then the enclosure does not meet the requirements of this section. (iii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of Sec. 264.1087 of this subpart.
(3) An owner or operator transferring hazardous waste into a container having a design capacity greater than 0.46 m\3\ shall meet the following requirements:
(i) Hazardous waste transfer by pumping shall be performed using a conveyance system that uses a tube (e.g., pipe, hose) to add the waste into the container. During transfer of the waste into the container, the cover shall remain in place and all container openings shall be maintained in a closed, sealed position except for those openings through which the tube enters the container and as provided for in paragraph (c) of this section. The tube shall be positioned in a manner such that either the:
(A) Tube outlet continuously remains submerged below the waste surface at all times waste is flowing through the tube; (B) Lower bottom edge of the tube outlet is located at a distance no greater than two inside diameters of the tube or 15.25 cm, whichever distance is greater, from the bottom of the container at all times waste is flowing through the tube; or
(C) Tube is connected to a permanent port mounted on the bottom of the container so that the lower edge of the port opening inside the container is located at a distance equal to or less than 15.25 cm from the container bottom.
(ii) Hazardous waste transferred by a means other than pumping shall be performed such that during transfer of the waste into the container, the cover remains in place and all container openings are maintained in a closed, sealed position except for those openings through which the hazardous waste is added and as provided for in paragraph (d) of this section.
(c) Each container opening shall be maintained in a closed, sealed position (e.g., covered by a gasketed lid) at all times that hazardous waste is in the container except when it is necessary to use the opening to:

(1) Add, remove, inspect, or sample the material in the container; (2) Inspect, maintain, repair, or replace equipment located inside the container; or
(3) Vent gases or vapors from a cover located over or enclosing an open container to a closed-vent system connected to a control device that is designed and operated in accordance with the requirements of Sec. 264.1087 of this subpart.
(d) One or more safety devices that vent directly to the atmosphere may be used on the container, cover, enclosure, closed-vent system, or control device provided each device meets all of the following conditions:
(1) The safety device is not used for planned or routine venting of organic vapors from the container, cover, enclosure, or closed-vent system connected to a control device; and (2) The safety device remains in a closed, sealed position at all times except when an unplanned event requires that the device open for the purpose of preventing physical damage or permanent deformation of the container, cover, enclosure, closed-vent system, or control device in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. An example of an unplanned event is a sudden power outage.

Sec. 264.1087 Standards: Closed-vent systems and control devices.

(a) This section applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of this subpart. (b) The closed-vent system shall meet the following requirements: (1) The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in paragraph (c) of this section.
(2) The closed-vent system shall be designed and operated in accordance with the requirements specified in Sec. 264.1033(k) of this part.
(3) If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, the owner or operator shall meet the following requirements:
(i) For each bypass device except as provided for in paragraph (b)(3)(ii) of this section, the owner or operator shall either: (A) Install, calibrate, maintain, and operate a flow indicator at the inlet to the bypass device that indicates at least once every 15 minutes whether gas, vapor, or fume flow is present in the bypass device; or
(B) Secure a valve installed at the inlet to the bypass device in the closed position using a car-seal or a lock-and-key type configuration. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the closed position.
(ii) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements of paragraph (b)(3)(i) of this section. (c) The control device shall meet the following requirements: (1) The control device shall be one of the following devices: (i) A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight;
(ii) An enclosed combustion device designed and operated in accordance with the requirements of Sec. 264.1033(c) of this part; or (iii) A flare designed and operated in accordance with the requirements of Sec. 264.1033(d) of this part. (2) The control device shall be operating at all times when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device. (3) The owner or operator using a carbon adsorption system to comply with paragraph (c)(1) of this section shall operate and maintain the control device in accordance with the following requirements: (i) Following the initial startup of the control device, all activated carbon in the control device shall be

replaced with fresh carbon on a regular basis in accordance with the requirements of Sec. 264.1033(g) or Sec. 264.1033(h) of this part. (ii) All carbon removed from the control device shall be managed in accordance with the requirements of Sec. 264.1033(m) of this part. (4) An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with paragraph (c)(1) of this section shall operate and maintain the control device in accordance with the requirements of Sec. 264.1033(j) of this part. (5) The owner or operator shall demonstrate that a control device achieves the performance requirements of paragraph (c)(1) of this section as follows:
(i) An owner or operator shall demonstrate using either a performance test as specified in paragraph (c)(5)(iii) of this section or a design analysis as specified in paragraph (c)(5)(iv) of this section the performance of each control device except for the following:
(A) A flare;
(B) A boiler or process heater with a design heat input capacity of 44 megawatts or greater;
(C) A boiler or process heater into which the vent stream is introduced with the primary fuel;
(D) A boiler or process heater burning hazardous waste for which the owner or operator has been issued a final permit under 40 CFR part 270 and designs and operates the unit in accordance with the requirements of 40 CFR part 266, subpart H; or (E) A boiler or process heater burning hazardous waste for which the owner or operator has certified compliance with the interim status requirements of 40 CFR part 266, subpart H. (ii) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in Sec. 264.1033(e).
(iii) For a performance test conducted to meet the requirements of paragraph (c)(5)(i) of this section, the owner or operator shall use the test methods and procedures specified in Sec. 264.1034(c)(1) through (c)(4).
(iv) For a design analysis conducted to meet the requirements of paragraph (c)(5)(i) of this section, the design analysis shall meet the requirements specified in Sec. 264.1035(b)(4)(iii). (v) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of paragraph (c)(1) of this section based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.
(6) If the owner or operator and the Regional Administrator do not agree on a demonstration of control device performance using a design analysis then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of paragraph (c)(5)(iii) of this section. The Regional Administrator may choose to have an authorized representative observe the performance test.

Sec. 264.1088 Inspection and monitoring requirements.

(a) This section applies to an owner or operator using air emission controls in accordance with the requirements of Sec. 264.1084 through Sec. 264.1087 of this subpart.
(b) Each cover used in accordance with requirements of Sec. 264.1084 through Sec. 264.1086 of this subpart shall be visually inspected and monitored for detectable organic emissions by the owner or operator using the procedure specified in 40 CFR 265.1089(f)(1) through (f)(7) except as follows:
(1) An owner or operator is exempted from performing the cover inspection and monitoring requirements specified in 40 CFR 265.1089(f)(1) through (f)(7) for the following tank covers: (i) A tank internal floating roof that is inspected and monitored in accordance with the requirements of Sec. 264.1091 of this subpart; or
(ii) A tank external floating roof that is inspected and monitored in

accordance with the requirements of Sec. 264.1091 of this subpart. (2) If a tank is buried partially or entirely underground, an owner or operator is required to perform the cover inspection and monitoring requirements specified in 40 CFR 265.1089(f)(1) through (f)(7) only for those portions of the tank cover and those connections to the tank cover or tank body (e.g. fill ports, access hatches, gauge wells, etc.) that extend to or above the ground surface and can be opened to the atmosphere.
(3) An owner or operator is exempted from performing the cover inspection and monitoring requirements specified in 40 CFR 265.1089(f)(1) through (f)(7) for a container that meets all requirements specified in either Sec. 264.1086(b)(1)(ii) or Sec. 264.1086(b)(1)(iii) of this subpart. (4) An owner or operator is exempted from performing the cover inspection and monitoring requirements specified in 40 CFR 265.1089(f)(1) through (f)(7) for an enclosure used to control air emissions from containers in accordance with the requirements of Sec. 264.1086(b)(2) of this subpart.
(c) Each closed-vent system used in accordance with the requirements of Sec. 264.1087 shall be inspected and monitored by the owner or operator in accordance with the procedure specified in Sec. 264.1033(k).
(d) Each control device used in accordance with the requirements of Sec. 264.1087 of this subpart shall be inspected and monitored by the owner or operator in accordance with the procedures specified in Sec. 264.1033(f) and Sec. 264.1033(i).
(e) The owner or operator shall develop and implement a written plan and schedule to perform all inspection and monitoring requirements of this section. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under Sec. 264.15.

Sec. 264.1089 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to requirements in this subpart shall record and maintain the following information as applicable:
(1) Documentation for each cover installed on a tank in accordance with the requirements of Sec. 264.1084(b)(2) or Sec. 264.1084(b)(3) of this subpart that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the applicable design specifications as listed in 40 CFR 265.1091(c).
(2) Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of Sec. 264.1085(c) of this subpart that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in 40 CFR 265.1086(e). (3) Documentation for each enclosure used to control air emissions from containers in accordance with the requirements of Sec. 264.1086(b)(2)(i) of this subpart that includes information prepared by the owner or operator or provided by the manufacturer or vendor describing the enclosure design, and certification by the owner or operator that the enclosure meets the specifications listed in Sec. 264.1086(b)(2)(ii) of this subpart. (4) Documentation for each closed-vent system and control device installed in accordance with the requirements of Sec. 264.1087 of this subpart that includes:
(i) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in paragraph (a)(4)(ii) of this section or by performance tests as specified in paragraph (a)(4)(iii) of this section when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur. (ii) If a design analysis is used, then design documentation as specified in Sec. 264.1035(b)(4). The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with Sec. 264.1035(b)(4)(iii) and certification by the owner or operator that the control equipment meets the applicable specifications.

(iii) If performance tests are used, then a performance test plan as specified in Sec. 264.1035(b)(3) and all test results. (iv) Information as required by Sec. 264.1035(c)(1) and (c)(2). (5) Records for all Method 27 tests performed by the owner or operator for each container used to meet the requirements of Sec. 264.1086(b)(1)(iii) of this subpart. (6) Records for all visual inspections conducted in accordance with the requirements of Sec. 264.1088 of this subpart. (7) Records for all monitoring for detectable organic emissions conducted in accordance with the requirements of Sec. 264.1088 of this subpart.
(8) Records of the date of each attempt to repair a leak, repair methods applied, and the date of successful repair. (9) Records for all continuous monitoring conducted in accordance with the requirements of Sec. 264.1088 of this subpart. (10) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with Sec. 264.1087(c)(3)(ii) of this subpart.
(11) Records for all inspections of each cover installed on a tank in accordance with the requirements of Sec. 264.1084(b)(2) or Sec. 264.1084(b)(3) of this subpart that includes information as listed in 40 CFR 265.1091(c).
(b) An owner or operator electing to use air emission controls for a tank in accordance with the conditions specified in Sec. 264.1084(c) of this subpart shall record the following information: (1) Date and time each waste sample is collected for direct measurement of maximum organic vapor pressure in accordance with Sec. 264.1083(c) of this subpart.
(2) Results of each determination of the maximum organic vapor pressure of the waste in a tank performed in accordance with Sec. 264.1083(c) of this subpart.
(3) Records specifying the tank dimensions and design capacity. (c) An owner or operator electing to use air emission controls for a tank in accordance with the requirements of Sec. 264.1091 of this subpart shall record the information required by Sec. 264.1091(c) of this subpart.
(d) An owner or operator electing not to use air emission controls for a particular tank, surface impoundment, or container subject to this subpart in accordance with the conditions specified in Sec. 264.1082(c) of this subpart shall record the information used by the owner or operator for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of Sec. 264.1083 of this subpart. (e) An owner or operator electing to comply with requirements in accordance with Sec. 264.1082(c)(2)(v) or Sec. 264.1082(c)(2)(vi) of this subpart shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.
(f) An owner or operator designating a cover as unsafe to inspect and monitor pursuant to 40 CFR 265.1089(f)(5) or difficult to inspect and monitor pursuant to 40 CFR 265.1089(f)(6) shall record in a log that is kept in the facility operating record the following information:
(1) A list of identification numbers for tanks with covers that are designated as unsafe to inspect and monitor in accordance with the requirements of 40 CFR 265.1089(f)(5), an explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover. (2) A list of identification numbers for tanks with covers that are designated as difficult to inspect and monitor in accordance with the requirements of 40 CFR 265.1089(f)(6), an explanation for each cover stating why the cover is difficult to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover. (g) All records required by paragraphs (a) through (f) of this section except as required in paragraphs (a)(1) through (a)(4) of this section shall be maintained in the operating record for a minimum of 3 years. All records required by paragraphs (a)(1) through (a)(4) of this section shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in

service.
(h) The owner or operator of a facility that is subject to this subpart and to the control device standards in 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V may elect to demonstrate compliance with the applicable sections of this subpart by documentation either pursuant to this subpart, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this section.

Sec. 264.1090 Reporting requirements.

(a) Each owner or operator managing hazardous waste in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of Sec. 264.1082(c) shall report to the Regional Administrator each occurrence when hazardous waste is placed in the waste management unit in noncompliance with the conditions specified in Sec. 264.1082(c)(1) or (c)(2) of this subpart, as applicable. Examples of such occurrences include placing in the waste management unit a hazardous waste having an average VO concentration equal to or greater than 100 ppmw at the point of waste origination; or placing in the waste management unit a treated hazardous waste which fails to meet the applicable conditions specified in Sec. 264.1082(c)(2)(i) through (c)(2)(v) of this subpart. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.
(b) Each owner or operator using air emission controls on a tank in accordance with the requirements Sec. 264.1084(c) of this subpart shall report to the Regional Administrator each occurrence when hazardous waste is managed in the tank in noncompliance with the conditions specified in Sec. 264.1084(c)(1) through (c)(4) of this subpart. The owner or operator shall submit a written report within 15 calendar days of the time that the owner or operator becomes aware of the occurrence. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator. (c) Each owner or operator using a control device in accordance with the requirements of Sec. 264.1087 of this subpart shall submit a semiannual written report to the Regional Administrator excepted as provided for in paragraph (d) of this section. The report shall describe each occurrence during the previous 6-month period when a control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in Sec. 264.1035(c)(4) or when a flare is operated with visible emissions as defined in Sec. 264.1033(d). The written report shall include the EPA identification number, facility name and address, and an explanation why the control device could not be returned to compliance within 24 hours, and actions taken to correct the noncompliance. The report shall be signed and dated by an authorized representative of the owner or operator.
(d) A report to the Regional Administrator in accordance with the requirements of paragraph (c) of this section is not required for a 6-month period during which all control devices subject to this subpart are operated by the owner or operator such that during no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in Sec. 264.1035(c)(4) or a flare operate with visible emissions as defined in Sec. 264.1033(d).

Sec. 264.1091 Alternative control requirements for tanks.

(a) This section applies to owners and operators of tanks electing to comply with Sec. 264.1084(b)(2) or Sec. 264.1084(b)(3) of this subpart. (1) The owner or operator electing to comply with Sec. 264.1084(b)(2) of this subpart shall design, install, operate, and maintain a fixed roof and internal floating roof that meet the requirements specified in 40 CFR 265.1091(a)(1)(i) through (a)(1)(ix). (2) The owner or operator electing to comply with Sec. 264.1084(b)(3) of this subpart shall design, install, operate, and maintain an external floating roof that meets the requirements specified in 40 CFR 265.1091(a)(2)(i) through (a)(2)(iii). (b) The owner or operator shall inspect and monitor the control equipment in accordance with the following requirements: (1) For a tank equipped with a fixed roof and internal floating roof in accordance with the requirements of paragraph (a)(1) of this section, the owner or operator shall perform the inspection and monitoring requirements specified in 40 CFR 265.1091(b)(1). (2) For a tank equipped with an external floating roof in accordance with the requirements of paragraph (a)(2) of this section, the owner or operator shall perform the inspection and monitoring requirements specified in 40 CFR 265.1091(b)(2). (c) The owner or operator shall record the following information in the operating record in accordance with the requirements of Sec. 264.1089(a)(1) and (a)(11) of this subpart: (1) For a tank equipped with a fixed roof and internal floating roof in accordance with the requirements of paragraph (a)(1) of this section, the owner or operator shall record the information listed in 40 CFR 265.1091(c)(1).
(2) For a tank equipped with an external floating roof in accordance with the requirements of paragraph (a)(1) of this section, the owner or operator shall record the information listed in 40 CFR 265.1091(c)(2).

PART 265--INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

21. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart A--General

22. Section 265.1(b) is amended by revising the first sentence to read as follows:

Sec. 265.1 Purpose, scope, and applicability.

* * * * *

(b) Except as provided in Sec. 265.1080(b), the standards of this part, and of 40 CFR 264.552 and 40 CFR 264.553, apply to owners and operators of facilities that treat, store or dispose of hazardous waste who have fully complied with the requirements for interim status under section 3005(e) of RCRA and Sec. 270.10 of this chapter until either a permit is issued under section 3005 of RCRA or until applicable part 265 closure and post-closure responsibilities are fulfilled, and to those owners and operators of facilities in existence on November 19, 1980 who have failed to provide timely notification as required by section 3010(a) of RCRA and/or failed to file Part A of the permit application as required by 40 CFR 270.10 (e) and (g). * * *

* * * * *

Subpart B--General Facility Standards

Sec. 265.13 [Amended]

23. In Sec. 265.13, paragraph (b)(6) is amended by adding ``265.1084,''

after the phrase ``as specified in Secs. 265.200, 265.225, 265.252, 265.273, 265.314, 265.341, 265.375, 265.402, 265.1034(d), 265.1063(d),''.
24. In Sec. 265.13, paragraph (b)(8) is added to read as follows:

Sec. 265.13 General waste analysis.

* * * * *
(b) * * *
(8) For owners and operators seeking an exemption to the air emission standards of Subpart CC of this part in accordance with Sec. 265.1083--
(i) The procedures and schedules for waste sampling and analysis, and the analysis of test data to verify the exemption. (ii) Each generator's notice and certification of the volatile organic concentration in the waste if the waste is received from offsite.
* * * * *

Sec. 265.15 [Amended]

25. In Sec. 265.15, paragraph (b)(4) is amended by removing the word ``and'' after the phrase ``frequencies called for in Secs. 265.174, 265.193, 265.195, 265.226, 265.260, 265.278, 265.304, 265.347, 265.377, 265.403, 265.1033, 265.1052, 265.1053,'' and adding ``265.1089, and 265.1091(b),'' after ``265.1058,''.

Subpart E--Manifest System, Recordkeeping, and Reporting

26. Section 265.73 is amended by revising paragraphs (b)(3) and (b)(6) to read as follows:

Sec. 265.73 Operating record.

* * * * *
(b) * * *
(3) Records and results of waste analysis, waste determinations, and trial tests performed as specified in Secs. 265.13, 265.200, 265.225, 265.252, 265.273, 265.314, 265.341, 265.375, 265.402, 265.1034, 265.1063, 265.1084, 268.4(a), and 268.7 of this chapter.
* * * * *
(6) Monitoring, testing or analytical data when required by Secs. 265.19, 265.90, 265.94, 265.191, 265.193, 265.195, 265.222, 265.223, 265.226, 265.255, 265.259, 265.260, 265.276, 265.278, 265.280(d)(1), 265.302 through 265.304, 265.347, 265.377, 265.1034(c) through 265.1034(f), 265.1035, 265.1063(d) through 265.1063(i), 265.1064, 265.1089, 265.1090, and 265.1091.
* * * * *
* Section 265.77 is amended by revising paragraph (d) to read as follows:

Sec. 265.77 Additional reports.

* * * * *
(d) As otherwise required by Subparts AA, BB, and CC of this part.

Subpart I--Use and Management of Containers

28. Section 265.178 is added to read as follows:

Sec. 265.178 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a container in accordance with the requirements of subpart CC of this part.

Subpart J--Tank Systems

29. Section 265.202 is added to read as follows:

Sec. 265.202 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a tank in accordance with the requirements of subparts AA, BB, and CC of this part.

Subpart K--Surface Impoundments

30. Section 265.231 is added to read as follows:

Sec. 265.231 Air emission standards.

The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance with the requirements of subpart CC of this part.

Subpart AA--Air Emission Standards for Process Vents

31. Section 265.1033 is amended by revising paragraph (j)(2) and adding paragraph (l) to read as follows:

Sec. 265.1033 Standards: Closed-vent systems and control devices.

* * * * *

(j) * * *

(2) Closed-vent systems shall be monitored to determine compliance with this section during the initial leak detection monitoring, which shall be conducted by the date that the facility becomes subject to the provisions of this section, annually, and at other times as requested by the Regional Administrator. For the annual leak detection monitoring after the initial leak detection monitoring, the owner or operator is not required to monitor those closed-vent system components which continuously operate in vacuum service or those closed-vent system joints, seams, or other connections that are permanently or semipermanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed pipe flange).

* * * * *

(l) The owner or operator using a carbon adsorption system shall document that all carbon removed from the control device is managed in one of the following manners:

(1) Regenerated or reactivated in a thermal treatment unit that is permitted under subpart X of 40 CFR part 264 or subpart P of this part; (2) Incinerated by a process that is permitted under subpart O of 40 CFR part 264 or subpart O of this part; or (3) Burned in a boiler or industrial furnace that is permitted under subpart H of part 266 of this chapter.

* In 40 CFR part 265, subpart CC is added to read as follows: Subpart CC--Air Emission Standards for Tanks, Surface Impoundments, and Containers

Sec.

Subpart CC--Air Emission Standards for Tanks, Surface Impoundments, and Containers

Sec. 265.1080 Applicability.

(a) The requirements of this subpart apply to owners and operators of all facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either subparts I, J, or K of this part except as Sec. 265.1 and paragraph (b) of this section provide otherwise.
(b) The requirements of this subpart do not apply to the following waste management units at the facility: (1) A waste management unit that holds hazardous waste placed in the unit before June 5, 1995, and in which no hazardous waste is added to the unit on or after June 5, 1995.
(2) A container that has a design capacity less than or equal to 0.1 m\3\.
(3) A tank in which an owner or operator has stopped adding hazardous waste and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan. (4) A surface impoundment in which an owner or operator has stopped adding hazardous waste (except to implement an approved closure plan) and the owner or operator has begun implementing or completed closure pursuant to an approved closure plan.
(5) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is generated as the result of implementing remedial activities required under the RCRA corrective action authorities of 3004(u), 3004(v) or 3008(h), CERCLA authorities, or similar Federal or State authorities. (6) A waste management unit that is used solely for the management of radioactive mixed waste in accordance with all applicable regulations under the authority of the Atomic Energy Act and the Nuclear Waste Policy Act.
(c) For the owner and operator of a facility subject to this subpart who has received a final permit under RCRA section 3005 prior to June 5, 1995, the following requirements apply: (1) The requirements of 40 CFR part 264, subpart CC shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 40 CFR 124.15 or reviewed in accordance with the requirements of 40 CFR 270.50(d).
(2) Until the date when the permit is reissued in accordance with the requirements of 40 CFR 124.15 or reviewed in accordance with the requirements of 40 CFR 270.50(d), the owner and operator is subject to the requirements of this subpart.

Sec. 265.1081 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given to them in the Act and parts 260 through 266 of this chapter.
Average volatile organic concentration or average VO concentration means the mass-weighted average volatile organic concentration of a hazardous waste as determined in accordance with the requirements of Sec. 265.1084 of this subpart.
Cover means a device or system which is placed on or over a hazardous waste such that the entire hazardous waste surface area is enclosed and sealed to reduce air emissions to the atmosphere. A cover may have openings such as access hatches, sampling ports, and gauge wells that are necessary for operation, inspection, maintenance, or repair of the unit on which the cover is installed provided that each opening is closed and sealed when not in use. Examples of covers include a fixed roof installed on a tank, a floating membrane cover installed on a surface impoundment, a lid installed on a drum, and an enclosure in which an open container is placed during waste treatment. External floating roof means a pontoon or double-deck type floating roof that rests on the surface of a hazardous waste being managed in a tank that has no fixed roof.
Fixed roof means a rigid cover that is installed in a stationary position so that it does not move with fluctuations in the level of the hazardous

waste placed in a tank.
Floating membrane cover means a cover consisting of a synthetic flexible membrane material that rests upon and is supported by the hazardous waste being managed in a surface impoundment. Floating roof means a pontoon-type or double-deck type cover that rests upon and is supported by the hazardous waste being managed in a tank, and is equipped with a closure seal or seals to close the space between the cover edge and the tank wall. Internal floating roof means a floating roof that rests or floats on the surface (but not necessarily in complete contact with it) of a hazardous waste being managed in a tank that has a fixed roof. Liquid-mounted seal means a foam or liquid-filled primary seal mounted in contact with the hazardous waste between the tank wall and the floating roof continuously around the circumference of the tank. Maximum organic vapor pressure means the equilibrium partial pressure exerted by the hazardous waste contained in a tank determined at the temperature equal to either: (1) the local maximum monthly average temperature as reported by the National Weather Service when the hazardous waste is stored or treated at ambient temperature; or (2) the highest calendar-month average temperature of the hazardous waste when the hazardous waste is stored at temperatures above the ambient temperature or when the hazardous waste is stored or treated at temperatures below the ambient temperature. No detectable organic emissions means no escape of organics from a device or system to the atmosphere as determined by an instrument reading less than 500 parts per million by volume (ppmv) above the background level at each joint, fitting, and seal when measured in accordance with the requirements of Method 21 in 40 CFR part 60, appendix A, and by no visible openings or defects in the device or system such as rips, tears, or gaps.
Point of waste origination means as follows: (1) When the facility owner or operator is the generator of the hazardous waste, the point of waste origination means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in 40 CFR part 261.

[Note: In this case, this term is being used in a manner similar to the use of the term ``point of generation'' in air standards established for waste management operations under authority of the Clean Air Act in 40 CFR parts 60, 61, and 63].

(2) When the facility owner and operator are not the generator of the hazardous waste, point of waste origination means the point where the owner or operator accepts delivery or takes possession of the hazardous waste.
Point of waste treatment means the point where a hazardous waste exits a waste management unit used to destroy, degrade, or remove organics in the hazardous waste.
Vapor-mounted seal means a foam-filled primary seal mounted continuously around the circumference of the tank so that there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the hazardous waste surface, and the floating roof.
Volatile organic concentration or VO concentration means the fraction by weight of organic compounds in a hazardous waste expressed in terms of parts per million (ppmw) as determined by direct measurement using Method 25D or by knowledge of the waste in accordance with the requirements of Sec. 265.1084 of this subpart. Waste determination means performing all applicable procedures in accordance with the requirements of Sec. 265.1084 of this subpart to determine whether a hazardous waste meets standards specified in this subpart. Examples of a waste determination include performing the procedures in accordance with the requirements of Sec. 265.1084 of this subpart to determine the average VO concentration of a hazardous waste at the point of waste origination; the average VO concentration of a hazardous waste at the point of waste treatment and comparing the results to the exit concentration limit specified for the process used to treat the hazardous waste; determining the organic

reduction efficiency and the organic biodegradation efficiency for a biological process used to treat a hazardous waste and comparing the results to the applicable standards; or the maximum volatile organic vapor pressure for a hazardous waste in a tank and comparing the results to the applicable standards.
Waste stabilization process means any physical or chemical process used to either reduce the mobility of hazardous constituents in a hazardous waste or eliminate free liquids as determined by Test Method 9095 (Paint Filter Liquids Test) in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992 (incorporated by reference--refer to Sec. 260.11 of this chapter). A waste stabilization process includes mixing the hazardous waste with binders or other materials, and curing the resulting hazardous waste and binder mixture. Other synonymous terms used to refer to this process are ``waste fixation'' or ``waste solidification.''

Sec. 265.1082 Schedule for implementation of air emission standards.

(a) Owners or operators of facilities existing on June 5, 1995, and subject to subparts I, J, and K of this part shall meet the following requirements:
(1) Install and begin operation of all control equipment required by this subpart by June 5, 1995, except as provided for in paragraph (a)(2) of this section.
(2) When control equipment required by this subpart cannot be installed and in operation by June 5, 1995, the owner or operator shall:
(i) Install and begin operation of the control equipment as soon as possible but no later than December 8, 1997. (ii) Prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subpart.
(iii) For facilities subject to the recordkeeping requirements of Sec. 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than June 5, 1995. (iv) For facilities not subject to Sec. 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility no later than June 5, 1995.
(b) Owners or operators of facilities in existence on the effective date of statutory or regulatory amendments under the Act that render the facility subject to subparts I, J, or K of this part shall meet the following requirements:
(1) Install and begin operation of all control equipment required by this subpart by the effective date of the amendment except as provided for in paragraph (b)(2) of this section. (2) When control equipment required by this subpart cannot be installed and begin operation by the effective date of the amendment, the owner or operator shall:
(i) Install and operate the control equipment as soon as possible but no later than 30 months after the effective date of the amendment. (ii) For facilities subject to the recordkeeping requirements of Sec. 265.73, enter and maintain the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than the effective date of the amendment, or (iii) For facilities not subject to Sec. 265.73, the owner or operator shall enter and maintain the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility site no later than the effective date of the amendment.
(c) The Regional Administrator may elect to extend the implementation date for control equipment at a facility, on a case by case basis, to a date later than December 8, 1997, when special circumstances that are beyond the

facility owner's or operator's control delay installation or operation of control equipment and the owner or operator has made all reasonable and prudent attempts to comply with the requirements of this subpart.

Sec. 265.1083 Standards: General.

(a) This section applies to the management of hazardous waste in tanks, surface impoundments, and containers subject to this subpart. (b) The owner or operator shall control air emissions from each waste management unit in accordance with standards specified in Sec. 265.1085 through Sec. 265.1088 of this subpart, as applicable to the waste management unit, except as provided for in paragraph (c) of this section.
(c) A waste management unit is exempted from standards specified in Sec. 265.1085 through Sec. 265.1088 of this subpart provided that all hazardous waste placed in the waste management unit is determined by the owner or operator to meet either of the following conditions: (1) The average VO concentration of the hazardous waste at the point of waste origination is less than 100 parts per million by weight (ppmw). The average VO concentration shall be determined by the procedures specified in Sec. 265.1084(a) of this subpart. (2) The organic content of the hazardous waste has been reduced by an organic destruction or removal process that achieves any one of the following conditions:
(i) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C<INF>t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in Sec. 265.1084(b) of this subpart.
(ii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the average VO concentration of the hazardous waste at the point of waste treatment is less than 50 ppmw. The organic reduction efficiency for the process and the average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedures specified in Sec. 265.1084(b) of this subpart. (iii) A process that removes or destroys the organics contained in the hazardous waste to a level such that the actual organic mass removal rate (MR) for the process is greater than the required organic mass removal rate (RMR) established for the process. The required organic mass removal rate and the actual organic mass removal rate for the process shall be determined using the procedures specified in Sec. 265.1084(b) of this subpart.
(iv) A biological process that destroys or degrades the organics contained in the hazardous waste, such that either of the following conditions is met:
(A) The organic reduction efficiency (R) for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency (R<INF>bio) for the process is equal to or greater than 95 percent. The organic reduction efficiency and the organic biodegradation efficiency for the process shall be determined in accordance with the procedures specified in Sec. 265.1084(b) of this subpart.
(B) The total actual organic mass biodegradation rate (MR<INF>bio) for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (RMR). The required organic mass removal rate and the actual organic mass biodegradation rate for the process shall be determined using the procedures specified in Sec. 265.1084(b) of this subpart.
(v) A process that removes or destroys the organics contained in the hazardous waste and meets all of the following conditions: (A) All of the materials entering the process are hazardous wastes. (B) From the point of waste origination through the point where the hazardous waste enters the process, the hazardous waste is continuously managed in waste management

units which use air emission controls in accordance with the standards specified in Sec. 265.1085 through Sec. 265.1088 of this subpart, as applicable to the waste management unit.
(C) The average VO concentration of the hazardous waste at the point of waste treatment is less than the lowest average VO concentration at the point of waste origination determined for each of the individual hazardous waste streams entering the process or 100 ppmw, whichever value is lower. The average VO concentration of each individual hazardous waste stream at the point of waste origination shall be determined using the procedure specified in Sec. 265.1084(a) of this subpart. The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the procedure specified in Sec. 265.1084(b) of this subpart. (vi) A hazardous waste incinerator for which the owner or operator has either:
(A) Been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of 40 CFR part 264, subpart O; or
(B) Has certified compliance with the interim status requirements of subpart O of this part.
(vii) A boiler or industrial furnace for which the owner or operator has either:
(A) Been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of 40 CFR part 266, subpart H, or
(B) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.
(d) When a process is used for the purpose of treating a hazardous waste to meet one of the sets of conditions specified in paragraphs (c)(2)(i) through (c)(2)(v) of this section, each material removed from or exiting the process that is not a hazardous waste but has an average VO concentration equal to or greater than 100 ppmw shall be managed in a waste management unit in accordance with the requirements of paragraph (b) of this section.
(e) The Regional Administrator may at any time perform or request that the owner or operator perform a waste determination for a hazardous waste managed in a tank, surface impoundment, or container exempted from using air emission controls under the provisions of this section as follows:
(1) The waste determination for average VO concentration of a hazardous waste at the point of waste origination shall be performed using direct measurement in accordance with the applicable requirements of Sec. 265.1084(a) of this subpart. The waste determination for a hazardous waste at the point of waste treatment shall be performed in accordance with the applicable requirements of Sec. 265.1084(b) of this subpart.
(2) In a case when the owner or operator is requested to perform the waste determination, the Regional Administrator may elect to have an authorized representative observe the collection of the hazardous waste samples used for the analysis.
(3) In a case when the results of the waste determination performed or requested by the Regional Administrator do not agree with the results of a waste determination performed by the owner or operator using knowledge of the waste, then the results of the waste determination performed in accordance with the requirements of paragraph (e)(1) of this section shall be used to establish compliance with the requirements of this subpart.
(4) In a case when the owner or operator has used an averaging period greater than 1 hour for determining the average VO concentration of a hazardous waste at the point of waste origination, the Regional Administrator may elect to establish compliance with this subpart by performing or requesting that the owner or operator perform a waste determination using direct measurement based on waste samples collected within a 1-hour period as follows:
(i) The average VO concentration of the hazardous waste at the point of waste origination shall be determined by direct measurement in accordance with the requirements of Sec. 265.1084(a) of this subpart. (ii) Results of the waste determination performed or requested by the Regional

Administrator showing that the average VO concentration of the hazardous waste at the point of waste origination is equal to or greater than 100 ppmw shall constitute noncompliance with this subpart except in a case as provided for in paragraph (e)(4)(iii) of this section.
(iii) For the case when the average VO concentration of the hazardous waste at the point of waste origination previously has been determined by the owner or operator using an averaging period greater than 1 hour to be less than 100 ppmw but because of normal operating process variations the VO concentration of the hazardous waste determined by direct measurement for any given 1-hour period may be equal to or greater than 100 ppmw, information that was used by the owner or operator to determine the average VO concentration of the hazardous waste (e.g., test results, measurements, calculations, and other documentation) and recorded in the facility records in accordance with the requirements of Sec. 265.1084(a) and Sec. 265.1090 of this subpart shall be considered by the Regional Administrator together with the results of the waste determination performed or requested by the Regional Administrator in establishing compliance with this subpart.

Sec. 265.1084 Waste determination procedures.

(a) Waste determination procedure for volatile organic (VO) concentration of a hazardous waste at the point of waste origination. (1) An owner or operator shall determine the average VO concentration at the point of waste origination for each hazardous waste placed in a waste management unit exempted under the provisions of Sec. 265.1083(c)(1) of this subpart from using air emission controls in accordance with standards specified in Sec. 265.1085 through Sec. 265.1088 of this subpart, as applicable to the waste management unit.
(2) When the facility owner or operator is the generator of the hazardous waste, the owner or operator shall determine the average VO concentration of the hazardous waste using either direct measurement as specified in paragraph (a)(5) of this section or knowledge of the waste as specified in paragraph (a)(6) of this section for each hazardous waste generated as follows:
(i) When the hazardous waste is generated as part of a continuous process, the owner or operator shall:
(A) Perform an initial waste determination of the average VO concentration of the waste stream before the first time any portion of the material in the waste stream is placed in a waste management unit subject to this subpart, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and (B) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration limits specified in Sec. 265.1083 of this subpart. (ii) When the hazardous waste is generated as part of a batch process that is performed repeatedly but not necessarily continuously, the owner or operator shall:
(A) Perform an initial waste determination of the average VO concentration for one or more representative waste batches generated by the process before the first time any portion of the material in the batches is placed in a waste management unit subject to this subpart, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and
(B) Perform a new waste determination whenever changes to the process generating the waste batches are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration limits specified in Sec. 265.1083 of this subpart. (3) When the facility owner and operator is not the generator of the hazardous waste, the owner or operator shall determine the average VO concentration of the hazardous waste using either direct measurement as specified in paragraph (a)(5) of this section or knowledge

of the waste as specified in paragraph (a)(6) of this section for each hazardous waste entering the facility as follows: (i) When the hazardous waste enters the facility as a continuous flow of material through a pipeline or other means (e.g., wastewater stream), the owner or operator shall:
(A) Perform an initial waste determination of the waste stream before the first time any portion of the material in the waste stream is placed in a waste management unit subject to this subpart, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and
(B) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration limits specified in Sec. 265.1083 of this subpart. (ii) When the hazardous waste enters the facility in a container, the owner or operator shall perform a waste determination for the material held in each container.
(4) For the case when the average VO concentration of the hazardous waste is determined by the owner or operator to be less than 100 ppmw, but because of normal operating variations in the source or process generating the hazardous waste the VO concentration of the hazardous waste may be equal to or greater than 100 ppmw at any given time during the averaging period, the owner or operator shall prepare and enter in the facility operating record information that specifies the following: (i) The maximum and minimum VO concentration values for the hazardous waste that occur during that averaging period used for the waste determination;
(ii) The operating conditions or circumstances under which the VO concentration of the hazardous waste will be equal to or greater than 100 ppmw, and;
(iii) The information and calculations used by the owner or operator to determine the average VO concentration of the hazardous waste.
(5) Procedure for using direct measurement to determine average VO concentration of a hazardous waste at the point of waste origination. (i) The owner or operator shall identify and record the point of waste origination for the hazardous waste. All waste samples used to determine the average VO concentration of the hazardous waste shall be collected at this point.
(ii) The owner or operator shall designate and record the averaging period to be used for determining the average VO concentration for the hazardous waste. The averaging period shall not exceed 1 year. An initial waste determination shall be performed for each averaging period.
(iii) The owner or operator shall identify each discrete quantity of the material composing the hazardous waste represented by the averaging period designated in paragraph (a)(5)(ii) of this section. An example of a discrete quantity of material composing a hazardous waste generated as part of a continuous process is the quantity of material generated during a process operating mode defined by a specific set of operating conditions which are normal for the process. An example of a discrete quantity of material composing a hazardous waste generated as part of a batch process that is performed repeatedly but not necessarily continuously is the total quantity of material composing a single batch generated by the process. An example of a discrete quantity of material composing a hazardous waste delivered to a facility in a container is the total quantity of material held in the container.
(iv) The following procedure shall be used measure the VO concentration for each discrete quantity of material identified in paragraph (a)(5)(iii) of this section:
(A) A sufficient number of samples, but no less than four samples, shall be collected to represent the organic composition for the entire discrete quantity of hazardous waste being tested. All of the samples shall be collected within a 1-hour period. Sufficient information shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the source or process

generating the hazardous waste represented by the samples. (B) Each sample shall be collected in accordance with the requirements specified in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992 (incorporated by reference--refer to Sec. 260.11 of this chapter). (C) Each collected sample shall be prepared and analyzed in accordance with the requirements of Method 25D in 40 CFR part 60, appendix A.
(D) The measured VO concentration for the discrete quantity of hazardous waste shall be determined by using the results for all samples analyzed in accordance with paragraph (a)(5)(iv)(C) of this section and the following equation:

<GRAPHIC><TIF3>TR06DE94.003

where:

C=Measured VO concentration of the discrete quantity of hazardous waste, ppmw.
i=Individual sample ``i'' of the hazardous waste collected in accordance with the requirements of SW-846. n=Total number of samples of hazardous waste collected (at least 4) within a 1-hour period.
C<INF>i=VO concentration measured by Method 25D for sample ``i'', ppmw.

(v) The average VO concentration of the hazardous waste shall be determined using the following procedure: (A) When the facility owner or operator is the generator of the hazardous waste, a sufficient number of VO concentration measurements for the hazardous waste shall be performed in accordance with the requirements of paragraph (a)(5)(iv) of this section to represent the complete range of hazardous waste organic compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for each process operating mode identified for the source or process generating the hazardous waste. (B) When the facility owner or operator is not the generator of the hazardous waste, a sufficient number of VO concentration measurements for the hazardous waste shall be performed in accordance with the requirements of paragraph (a)(5)(iv) of this section to represent the complete range of hazardous waste organic compositions and quantities that occur in the hazardous waste as received at the facility during the entire averaging period.
(C) The average VO concentration of the hazardous waste at the point of waste origination shall be calculated by using the results for all VO measurements performed in accordance with paragraph (a)(5)(iv) of this section and the following equation:

<GRAPHIC><TIF4>TR06DE94.004

where:
C<INF>ave=Average VO concentration of the hazardous waste at the point of waste origination, ppmw.
j=Individual discrete quantity ``j'' of the hazardous waste for which a VO concentration measurement is determined in accordance with the requirements of paragraph (a)(5)(iv) of this section. m=Total number of VO concentration measurements determined in accordance with the requirements of paragraph (a)(5)(iv) of this section for the averaging period.
Q<INF>j=Mass of the discrete quantity of the hazardous waste represented by C<INF>j, kg.
Q<INF>T=Total mass of the hazardous waste for the averaging period, kg.
C<INF>j=Measured VO concentration of discrete quantity ``j'' for the hazardous waste determined in accordance with the requirements of paragraph (a)(5)(iv) of this section, ppmw.

(6) Procedure for using knowledge of the waste to determine the average VO

concentration of a hazardous waste at the point of waste origination.
(i) The owner or operator shall identify and record the point of waste origination for the hazardous waste. All information used to determine the average VO concentration of the hazardous waste shall be based on the hazardous waste composition at this point. (ii) The owner or operator shall designate and record the averaging period to be used for determining the average VO concentration for the hazardous waste. The averaging period shall not exceed 1 year. An initial waste determination shall be performed for each averaging period.
(iii) The owner or operator shall prepare and record sufficient information that documents the average VO concentration for the hazardous waste. Information may be used that is prepared by either the facility owner or operator or by the generator of the hazardous waste. Examples of information that may be used as the basis for knowledge of the waste include: organic material balances for the source or process generating the waste; VO concentration measurements for the same type of waste performed in accordance with the procedure specified in paragraph (a)(5)(iv) of this section; previous individual organic constituent test data for the waste that are still applicable to the current waste management practices; documentation that the waste is generated by a process for which no organics-containing materials are used; previous test data for other locations managing the same type of waste; or other knowledge based on manifests, shipping papers, or waste certification notices.
(iv) If test data other than VO concentration measurements performed in accordance with the procedure specified in paragraph (a)(5)(iv) of this section are used as the basis for knowledge of the waste, then the owner or operator shall document the test method, sampling protocol, and the means by which sampling variability and analytical variability are accounted for in the determination of the average VO concentration. For example, an owner or operator may use individual organic constituent concentration test data that are validated in accordance with Method 301 in appendix A of 40 CFR part 63 as the basis for knowledge of the waste. (b) Waste determination procedures for treated hazardous waste. (1) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of Sec. 265.1083(c)(2) of this subpart from using air emission controls in accordance with standards specified in Sec. 265.1085 through Sec. 265.1088 of this subpart, as applicable to the waste management unit. (2) The owner or operator shall perform a waste determination for each discrete quantity of treated hazardous waste as follows: (i) When the hazardous waste is treated by a continuous process, the owner or operator shall:
(A) Perform an initial waste determination for the treated waste stream before the first time any portion of the material in the waste stream is placed in a waste management unit subject to this subpart, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and
(B) Perform a new waste determination whenever changes to the hazardous waste streams fed to the process are reasonably likely to cause the characteristics of the hazardous waste at the point of waste treatment to change to levels that fail to achieve the applicable conditions specified in Sec. 265.1083(c)(2) of this subpart. (ii) When the hazardous waste is treated by a batch process that is performed repeatedly but not necessarily continuously, the owner or operator shall:
(A) Perform an initial waste determination for the treated hazardous waste in one or more representative batches treated by the process, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and
(B) Perform a new waste determination whenever changes to the hazardous waste treated by the process are reasonably likely to cause the characteristics of the hazardous waste at the point of waste treatment to change to levels that fail to achieve the applicable conditions specified in Sec. 265.1083(c)(2) of this subpart. (3) The owner or operator shall

designate and record the specific provision in Sec. 265.1083(c)(2) of this subpart for which the waste determination is being performed. The waste determination for the treated hazardous waste shall be performed using the applicable procedures specified in paragraphs (b)(4) through (b)(10) of this section.
(4) Procedure to determine the average VO concentration of a hazardous waste at the point of waste treatment. (i) The owner or operator shall identify and record the point of waste treatment for the hazardous waste. All waste samples used to determine the average VO concentration of the hazardous waste shall be collected at this point.
(ii) The owner or operator shall designate and record the averaging period to be used for determining the average VO concentration for the hazardous waste. The averaging period shall not exceed 1 year. An initial waste determination shall be performed for each averaging period.
(iii) The owner or operator shall identify each discrete quantity of the material composing the hazardous waste represented by the averaging period designated in paragraph (b)(4)(ii) of this section. (iv) The following procedure shall be used measure the VO concentration for each discrete quantity of material identified in paragraph (b)(4)(iii) of this section:
(A) A sufficient number of samples, but no less than four samples, shall be collected to represent the organic composition for the entire discrete quantity of hazardous waste being tested. All of the samples shall be collected within a 1-hour period. Sufficient information shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the process treating the hazardous waste represented by the samples. (B) Each sample shall be collected in accordance with the requirements specified in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992 (incorporated by reference--refer to Sec. 260.11 of this chapter).
(C) Each collected sample shall be prepared and analyzed in accordance with the requirements of Method 25D in 40 CFR part 60, appendix A.
(D) The measured VO concentration for the discrete quantity of hazardous waste shall be determined by using the results for all samples analyzed in accordance with paragraph (b)(4)(iv)(C) of this section and the following equation:

<GRAPHIC><TIF5>TR06DE94.005

where:

C = Measured VO concentration of the discrete quantity of hazardous waste, ppmw.
i = Individual sample ``i'' of the hazardous waste collected in accordance with the requirements of SW-846. n = Total number of samples of hazardous waste collected (at least 4) within a 1-hour period.
C<INF>i = VO concentration measured by Method 25D for sample ``i'', ppmw.

(v) The average VO concentration of the hazardous waste at the point of waste treatment shall be determined using the following procedure:
(A) When the facility owner or operator is the generator of the hazardous waste, a sufficient number of VO concentration measurements for the hazardous waste shall be performed in accordance with the requirements of paragraph (b)(4)(iv) of this section to represent the complete range of hazardous waste organic compositions and quantities treated by the process during the entire averaging period. (B) The average VO concentration of the hazardous waste at the point of waste treatment shall be calculated by using the results for all VO measurements performed in accordance with paragraph (b)(4)(iv) of this section and the following equation:

<GRAPHIC><TIF6>TR06DE94.006

where:

C<INF>ave = Average VO concentration of the hazardous waste at the point of waste treatment, ppmw.
j = Individual discrete quantity ``j'' of the hazardous waste for which a VO concentration measurement is determined in accordance with the requirements of paragraph (b)(4)(iv) of this section. m = Total number of VO concentration measurements determined in accordance with the requirements of paragraph (b)(4)(iv) of this section for the averaging period.
Q<INF>j = Mass of the discrete quantity of the hazardous waste represented by C<INF>j, kg.
Q<INF>T = Total mass of the hazardous waste for the averaging period, kg.
C<INF>j = Measured VO concentration of discrete quantity ``j'' for the hazardous waste determined in accordance with the requirements of paragraph (b)(4)(iv) of this section, ppmw.

(5) Procedure to determine the exit concentration limit (C<INF>t) for a treated hazardous waste.
(i) The point of waste origination for each hazardous waste treated by the process at the same time shall be identified. (ii) If a single hazardous waste stream is identified in paragraph (b)(5)(i) of this section, then the exit concentration limit (C<INF>t) shall be 100 ppmw.
(iii) If more than one hazardous waste stream is identified in paragraph (b)(5)(i) of this section, then the VO concentration of each hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of paragraph (a) of this section. The exit concentration limit (C<INF>t<SUP>) shall be calculated by using the results determined for each individual hazardous waste stream and the following equation:

<GRAPHIC><TIF7>TR06DE94.007

where:

C<INF>t = Exit concentration limit for treated hazardous waste, ppmw. x = Individual hazardous waste stream ``x'' that has a VO concentration less than 100 ppmw at the point of waste origination as determined in accordance with the requirements of Sec. 265.1084(a). y = Individual hazardous waste stream ``y'' that has a VO concentration equal to or greater than 100 ppmw at the point of waste origination as determined in accordance with the requirements of Sec. 265.1084(a). m = Total number of ``x'' hazardous waste streams treated by process. n = Total number of ``y'' hazardous waste streams treated by process. Q<INF>x = Annual mass quantity of hazardous waste stream ``x'', kg/yr. Q<INF>y = Annual mass quantity of hazardous waste stream ``y'', kg/yr. C<INF>x = Average VO concentration of hazardous waste stream ``x'' at the point of waste origination as determined in accordance with the requirements of Sec. 265.1084(a), ppmw.

(6) Procedure to determine the organic reduction efficiency (R) for a treated hazardous waste.
(i) The organic reduction efficiency for a treatment process shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour. (ii) The point of each hazardous waste stream entering the process and each hazardous waste stream exiting the process that is to be included in the calculation of the organic reduction efficiency for the process shall be identified.
(iii) For each run, the following information shall be determined for each hazardous waste stream identified in paragraph (b)(6)(ii) of this section using the following procedures: (A) The mass quantity of each hazardous waste stream entering the process (Q<INF>b) and the mass quantity of each hazardous waste stream exiting the process (Q<INF>a) shall be determined.
(B) The VO concentration of each hazardous waste stream entering the process (C<INF>b) during the run shall be measured in accordance with the

requirements of paragraphs (a)(5)(iv)(A) through (a)(5)(iv)(D) of this section. The VO concentration of each hazardous waste stream exiting the process (C<INF>a) during the run shall be determined in accordance with the requirements of paragraph (b)(4)(iv) of this section. Samples shall be collected as follows: (1) For a continuous process, the samples of the hazardous waste entering and samples of the hazardous waste exiting the process shall be collected concurrently.
(2) For a batch process, the samples of the hazardous waste entering the process shall be collected at the time that the hazardous waste is placed in the process. The samples of the hazardous waste exiting the process shall be collected as soon as practicable after the time when the process stops operation or the final treatment cycle ends.
(iv) The waste volatile organic mass flow entering the process (E<INF>b) and the waste volatile organic mass flow exiting the process (E<INF>a) shall be calculated by using the results determined in accordance with paragraph (b)(6)(iii) of this section and the following equations:

<GRAPHIC><TIF8>TR06DE94.008

where:

E<INF>a = Waste volatile organic mass flow exiting process, kg/hr. E<INF>b = Waste volatile organic mass flow entering process, kg/hr. m = Total number of runs (at least 3)
j = Individual run ``j''
Q<INF>bj = Mass quantity of hazardous waste entering process during run ``j'', kg/hr.
Q<INF>aj = Average mass quantity of waste exiting process during run ``j'', kg/hr.
C<INF>aj = Measured VO concentration of hazardous waste exiting process during run ``j'' as determined in accordance with the requirements of Sec. 265.1084(b)(4)(iv), ppmw.
C<INF>bj = Measured VO concentration of hazardous waste entering process during run ``j'' as determined in accordance with the requirements of Sec. 265.1084 (a)(5)(iv)(A) through (a)(5)(iv)(D), ppmw.

(v) The organic reduction efficiency of the process shall be calculated by using the results determined in accordance with paragraph (b)(6)(iv) of this section and the following equation:

<GRAPHIC><TIF9>TR06DE94.009

where:

R = Organic reduction efficiency, percent. E<INF>b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(6)(iv) of this section, kg/hr.
E<INF>a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph (b)(6)(iv) of this section, kg/hr.

(7) Procedure to determine the organic biodegradation efficiency (R<INF>bio) for a treated hazardous waste. (i) The fraction of organics biodegraded (F<INF>bio) shall be determined using the procedure specified in 40 CFR part 63, appendix C of this chapter.
(ii) The organic biodegradation efficiency shall be calculated by using the following equation:

R<INF>bio = F<INF>bio x 100 where:

R<INF>bio = Organic biodegradation efficiency, percent. F<INF>bio = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph (b)(7)(i) of this section.

(8) Procedure to determine the required organic mass removal rate (RMR) for a treated hazardous waste.
(i) The point of waste origination for each hazardous waste treated by the process at the same time shall be identified. (ii) For each hazardous waste stream identified in paragraph (b)(8)(i) of this section, the VO concentration of the hazardous waste stream at the point of waste origination shall be determined in accordance with the requirements of paragraph (a) of this section. (iii) For each individual hazardous waste stream that has a volatile organic concentration equal to or greater than 100 ppmw at the point of waste origination as determined in accordance with the requirements of paragraph (b)(8)(ii) of this section, the average volumetric flow rate of hazardous waste at the point of waste origination and the density of the hazardous waste stream shall be determined.
(iv) The required organic mass removal rate for the hazardous waste shall be calculated by using the results determined for each individual hazardous waste stream in accordance with the requirements of paragraphs (b)(8)(ii) and (b)(8)(iii) of this section and the following equation:

<GRAPHIC><TIF10>TR06DE94.010

where:

RMR = Required organic mass removal rate, kg/hr. y = Individual hazardous waste stream ``y'' that has a volatile organic concentration equal to or greater than 100 ppmw at the point of waste origination as determined in accordance with the requirements of Sec. 265.1084(a).
n = Total number of ``y'' hazardous waste streams treated by process.
V<INF>y = Average volumetric flow rate of hazardous waste stream ``y'' at the point of waste origination, m<SUP>3/hr. k<INF>y = Density of hazardous waste stream ``y'', kg/m<SUP>3 C<INF>y = Average VO concentration of hazardous waste stream ``y'' at the point of waste origination as determined in accordance with the requirements of Sec. 265.1084(a), ppmw.

(9) Procedure to determine the actual organic mass removal rate (MR) for a treated hazardous waste.
(i) The actual organic mass removal rate shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.
(ii) The waste volatile organic mass flow entering the process (E<INF>b) and the waste volatile organic mass flow exiting the process (E<INF>a) shall be determined in accordance with the requirements of paragraph (b)(6)(iv) of this section.
(iii) The actual organic mass removal rate shall be calculated by using the results determined in accordance with the requirements of paragraph (b)(9)(ii) of this section and the following equation: MR = E<INF>b - E<INF>a
where:

MR = Actual organic mass removal rate, kg/hr. E<INF>b = Waste volatile organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(6)(iv) of this section, kg/hr.
E<INF>a = Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph (b)(6)(iv) of this section, kg/hr.
(10) Procedure to determine the actual organic mass biodegradation rate (MR<INF>bio) for a treated hazardous waste. (i) The actual organic mass biodegradation rate shall be determined based on results for a minimum of three consecutive runs. The sampling time for each run shall be 1 hour.
(ii) The waste organic mass flow entering the process (E<INF>b) shall be determined in accordance with the requirements of paragraph (b)(6)(iv) of this section.
(iii) The fraction of organic biodegraded (F<INF>bio) shall be determined

using the procedure specified in 40 CFR part 63, appendix C. (iv) The actual organic mass biodegradation rate shall be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of paragraphs (b)(10)(ii) and (b)(10)(iii) of this section and the following equation:
MR<INF>bio = E<INF>b x F<INF>bio where:

MR<INF>bio = Actual organic mass biodegradation rate, kg/hr. E<INF>b = Waste organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(6)(iv) of this section, kg/hr. F<INF>bio = Fraction of organic biodegraded as determined in accordance with the requirements of paragraph (b)(10)(iii) of this section.

(c) Procedure to determine the maximum organic vapor pressure of a hazardous waste in a tank.
(1) An owner or operator shall determine the maximum organic vapor pressure for each hazardous waste placed in a tank using air emission controls in accordance with standards specified in Sec. 265.1085(c) of this subpart.
(2) An owner or operator shall use either direct measurement as specified in paragraph (c)(3) of this section or knowledge of the waste as specified by paragraph (c)(4) of this section to determine the maximum organic vapor pressure which is representative of the hazardous waste composition stored or treated in the tank. (3) To determine the maximum organic vapor pressure of the hazardous waste by direct measurement, the following procedure shall be used:
(i) Representative samples of the waste contained in the tank shall be collected. Sampling shall be conducted in accordance with the requirements specified in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication No. SW-846, Third Edition, September 1986, as amended by Update I, November 15, 1992 (incorporated by reference--refer to Sec. 260.11 of this chapter). (ii) Any appropriate one of the following methods may be used to analyze the samples and compute the maximum organic vapor pressure: (A) Method 25E in 40 CFR part 60, appendix A; (B) Methods described in American Petroleum Institute Publication 2517, Third Edition, February 1989, ``Evaporative Loss from External Floating-Roof Tanks,'' (incorporated by reference--refer to Sec. 260.11 of this chapter); (C) Methods obtained from standard reference texts; (D) ASTM Method 2879-92 (incorporated by reference--refer to Sec. 260.11 of this chapter); or (E) Any other method approved by the Regional Administrator. (4) To determine the maximum organic vapor pressure of the hazardous waste by knowledge, sufficient information shall be prepared and recorded that documents the maximum organic vapor pressure of the hazardous waste in the tank. Examples of information that may be used include: documentation that the waste is generated by a process for which no organics-containing materials are used; or that the waste is generated by a process for which at other locations it previously has been determined by direct measurement that the waste maximum organic vapor pressure is less than the maximum vapor pressure limit for the appropriate design capacity category specified for the tank.

Sec. 265.1085 Standards: Tanks.

(a) This section applies to owners and operators of tanks subject to this subpart into which any hazardous waste is placed except for the following tanks:
(1) A tank in which all hazardous waste entering the tank meets the conditions specified in Sec. 265.1083(c) of this subpart; or (2) A tank used for biological treatment of hazardous waste in accordance with the requirements of Sec. 265.1083(c)(2)(iv) of this subpart.
(b) The owner or operator shall place the hazardous waste into one of the following tanks:
(1) A tank equipped with a cover (e.g., a fixed roof) that is vented through a closed-vent system to a control device in accordance with the

requirements specified in paragraph (d) of this section; (2) A tank equipped with a fixed roof and internal floating roof in accordance with the requirements of Sec. 265.1091 of this subpart; (3) A tank equipped with an external floating roof in accordance with the requirements of Sec. 265.1091 of this subpart; or (4) A pressure tank that is designed to operate as a closed system such that the tank operates with no detectable organic emissions at all times that hazardous waste is in the tank except as provided for in paragraph (g) of this section.
(c) As an alternative to complying with paragraph (b) of this section, an owner or operator may place hazardous waste in a tank equipped with a cover (e.g., a fixed roof) meeting the requirements specified in paragraph (d)(1) of this section when the hazardous waste is determined to meet all of the following conditions: (1) The hazardous waste is neither mixed, stirred, agitated, nor circulated within the tank by the owner or operator using a process that results in splashing, frothing, or visible turbulent flow on the waste surface during normal process operations; (2) The hazardous waste in the tank is not heated by the owner or operator except during conditions requiring that the waste be heated to prevent the waste from freezing or to maintain adequate waste flow conditions for continuing normal process operations; (3) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process or a process that produces an exothermic reaction; and
(4) The maximum organic vapor pressure of the hazardous waste in the tank as determined using the procedure specified in Sec. 265.1084(c) of this subpart is less than the following applicable value:
(i) If the tank design capacity is equal to or greater than 151 m<SUP>3, then the maximum organic vapor pressure shall be less than 5.2 kPa;
(ii) If the tank design capacity is equal to or greater than 75 m<SUP>3 but less than 151 m<SUP>3, then the maximum organic vapor pressure shall be less than 27.6 kPa; or (iii) If the tank design capacity is less than 75 m<SUP>3, then the maximum organic vapor pressure shall be less than 76.6 kPa. (d) To comply with paragraph (b)(1) of this section, the owner or operator shall design, install, operate, and maintain a cover that vents the organic vapors emitted from hazardous waste in the tank through a closed-vent system connected to a control device. (1) The cover shall be designed and operated to meet the following requirements:
(i) The cover and all cover openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable organic emissions when all cover openings are secured in a closed, sealed position.
(ii) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) at all times that hazardous waste is in the tank except as provided for in paragraph (f) of this section.
(2) The closed-vent system and control device shall be designed and operated in accordance with the requirements of Sec. 265.1088 of this subpart.
(e) The owner and operator shall install, operate, and maintain enclosed pipes or other closed systems for the transfer of hazardous waste as described in paragraph (e)(1) or (e)(2) of this section. The EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a closed system.
(1) Transfer all hazardous waste to the tank from another tank, surface impoundment, or container subject to this subpart except for those hazardous wastes that meet the conditions specified in Sec. 265.1083(c) of this subpart; and
(2) Transfer all hazardous waste from the tank to another tank, surface impoundment, or container subject to this subpart except for those hazardous wastes that meet the conditions specified in Sec. 265.1083(c) of this subpart.
(f) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid) at all times that hazardous waste is in the tank except when it is necessary to use the cover opening to:
(1) Add, remove, inspect, or sample the material in the tank; (2) Inspect, maintain, repair, or replace equipment located inside the tank; or

(3) Vent gases or vapors from the tank to a closed-vent system connected to a control device that is designed and operated in accordance with the requirements of Sec. 265.1088 of this subpart. (g) One or more safety devices which vent directly to the atmosphere may be used on the tank, cover, closed-vent system, or control device provided each safety device meets all of the following conditions:
(1) The safety device is not used for planned or routine venting of organic vapors from the tank or the closed-vent system connected to a control device; and
(2) The safety device remains in a closed, sealed position at all times except when an unplanned event requires that the device open for the purpose of preventing physical damage or permanent deformation of the tank, cover, closed-vent system, or control device in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. An example of an unplanned event is a sudden power outage.

Sec. 265.1086 Standards: surface impoundments.

(a) This section applies to owners and operators of surface impoundments subject to this subpart into which any hazardous waste is placed except for the following surface impoundments: (1) A surface impoundment in which all hazardous waste entering the surface impoundment meets the conditions specified in Sec. 265.1083(c) of this subpart; or
(2) A surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of Sec. 265.1083(c)(2)(iv) of this subpart. (b) The owner or operator shall place the hazardous waste into a surface impoundment equipped with a cover (e.g., an air-supported structure or a rigid cover) that is vented through a closed-vent system to a control device meeting the requirements specified in paragraph (d) of this section.
(c) As an alternative to complying with paragraph (b) of this section, an owner or operator may place hazardous waste in a surface impoundment equipped with a floating membrane cover meeting the requirements specified in paragraph (e) of this section when the hazardous waste is determined to meet all of the following conditions: (1) The hazardous waste is neither mixed, stirred, agitated, nor circulated within the surface impoundment by the owner or operator using a process that results in splashing, frothing, or visible turbulent flow on the waste surface during normal process operations; (2) The hazardous waste in the surface impoundment is not heated by the owner or operator; and
(3) The hazardous waste in the surface impoundment is not treated by the owner or operator using a waste stabilization process or a process that produces an exothermic reaction. (d) To comply with paragraph (b)(1) of this section, the owner or operator shall design, install, operate, and maintain a cover that vents the organic vapors emitted from hazardous waste in the surface impoundment through a closed- vent system connected to a control device.
(1) The cover shall be designed, installed, operated, and maintained to meet the following requirements: (i) The cover and all cover openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable organic emissions when all cover openings are secured in a closed, sealed position.
(ii) Each cover opening shall be secured in the closed, sealed position (e.g., covered by a gasketed lid or cap) at all times that hazardous waste is in the surface impoundment except as provided for in paragraph (g) of this section.
(iii) The closed-vent system and control device shall be designed and operated in accordance with Sec. 265.1088 of this subpart. (e) To comply with paragraph (c) of this section, the owner or operator shall design, install, operate, and maintain a floating membrane cover that meets all of the following requirements: (1) The floating membrane cover shall be designed, installed, and operated such that at all times when hazardous waste is in the surface impoundment, the entire surface area of the

hazardous waste is enclosed by the cover, and any air spaces underneath the cover are not vented to the atmosphere except during conditions specified in paragraph (h) of this section.
(2) The floating membrane cover and all cover openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable organic emissions when all cover openings are secured in a closed, sealed position. (3) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) at all times that hazardous waste is in the surface impoundment except as provided for in paragraphs (g)(1) through (g)(3) of this section; and (4) The synthetic membrane material used for the floating membrane cover shall be either:
(i) High density polyethylene with a thickness no less than 2.5 mm; or
(ii) A material or a composite of different materials determined to have the following properties:
(A) Organic permeability properties that are equivalent to those of the material specified in paragraph (e)(4)(i) of this section; and (B) Chemical and physical properties that maintain the material integrity for as long as the cover is in use. Factors that shall be considered in selecting the material include: the effects of contact with the waste managed in the impoundment, weather exposure, and cover installation and operation practices.
(f) The owner or operator shall install, operate, and maintain enclosed pipes or other closed systems for the transfer of hazardous waste as described in paragraph (f)(1) or (f)(2) of this section. The EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a closed system.
(1) Transfer all hazardous waste to the surface impoundment from another tank, surface impoundment, or container subject to this subpart except for those hazardous wastes that meet the conditions specified in Sec. 265.1083(c) of this subpart; and
(2) Transfer all hazardous waste from the surface impoundment to another tank, surface impoundment, or container subject to this subpart except for those hazardous wastes that meet the conditions specified in Sec. 265.1083(c) of this subpart.
(g) Each cover opening shall be secured in the closed, sealed position (e.g., covered by a gasketed lid or cap) at all times that hazardous waste is in the surface impoundment except when it is necessary to use the cover opening to:
(1) Add, remove, inspect, or sample the material in the surface impoundment;
(2) Inspect, maintain, repair, or replace equipment located underneath the cover;
(3) Remove treatment residues from the surface impoundment in accordance with the requirements of 40 CFR 268.4; or (4) Vent gases or vapors from the surface impoundment to a closedvent system connected to a control device that is designed and operated in accordance with the requirements of Sec. 265.1088 of this subpart. (h) One or more safety devices that vent directly to the atmosphere may be installed on the cover, closed-vent system, or control device provided each device meets all of the following conditions:
(1) The safety device is not used for planned or routine venting of organic vapors from the surface impoundment or the closed-vent system connected to a control device; and
(2) The safety device remains in a closed, sealed position at all times except when an unplanned event requires that the device open for the purpose of preventing physical damage or permanent deformation of the cover, closed-vent system, or control device in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. An example of an unplanned event is a sudden power outage.

Sec. 265.1087 Standards: Containers.

(a) This section applies to the owners and operators of containers having design capacities greater than 0.1 m<SUP>3 subject to this subpart into which any hazardous waste is placed except for a container in which all hazardous waste entering the container meets the conditions specified in Sec. 265.1083(c) of this subpart. (b) An owner or operator shall manage hazardous waste in containers using the following procedures:
(1) The owner or operator shall place the hazardous waste into one of the following containers except when a container is used for hazardous waste treatment as required by paragraph (b)(2) of this section:
(i) A container that is equipped with a cover which operates with no detectable organic emissions when all container openings (e.g., lids, bungs, hatches, and sampling ports) are secured in a closed, sealed position. The owner or operator shall determine that a container operates with no detectable emissions by testing each opening on the container for leaks in accordance with Method 21 in 40 CFR part 60, appendix A the first time any portion of the hazardous waste is placed into the container. If a leak is detected and cannot be repaired immediately, the hazardous waste shall be removed from the container and the container not used to meet the requirements of this paragraph until the leak is repaired and the container is retested. (ii) A container having a design capacity less than or equal to 0.46 m<SUP>3 that is equipped with a cover and complies with all applicable Department of Transportation regulations on packaging hazardous waste for transport under 49 CFR part 178. (A) A container that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart is not subject to any exceptions to the 49 CFR part 178 regulations, except as noted in paragraph (b)(1)(ii)(B) of this section. (B) A lab pack that is managed in accordance with the requirements of 49 CFR part 178 for the purpose of complying with this subpart may comply with the exceptions for combination packagings specified in 49 CFR 173.12(b).
(iii) A container that is attached to or forms a part of any truck, trailer, or railcar; and that has been demonstrated within the preceding 12 months to be organic vapor tight when all container openings are in a closed, sealed position (e.g., the container hatches or lids are gasketed and latched). For the purpose of meeting the requirements of this paragraph, a container is organic vapor tight if the container sustains a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals. This condition is to be demonstrated using the pressure test specified in Method 27 of 40 CFR part 60, appendix A, and a pressure measurement device which has a precision of <plus-minus> 2.5 mm water and which is capable of measuring above the pressure at which the container is to be tested for vapor tightness.
(2) An owner or operator treating hazardous waste in a container by either a waste stabilization process, any process that requires the addition of heat to the waste, or any process that produces an exothermic reaction shall meet the following requirements: (i) Whenever it is necessary for the container to be open during the treatment process, the container shall be located inside an enclosure that is vented through a closed-vent system to a control device.
(ii) The enclosure shall be a structure that is designed and operated in accordance with the following requirements: (A) The enclosure shall be a structure that is designed and operated with sufficient airflow into the structure to capture the organic vapors emitted from the hazardous waste in the container and vent the vapors through the closed-vent system to the control device. (B) The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure. The pressure drop across each opening in the enclosure shall be maintained at a pressure below atmospheric pressure such that whenever an open container is placed inside the enclosure no organic vapors released from the container exit the enclosure through the opening. The owner or operator shall determine that an enclosure achieves this condition by measuring the pressure drop across

each opening in the enclosure. If the pressure within the enclosure is equal to or greater than atmospheric pressure then the enclosure does not meet the requirements of this section. (iii) The closed-vent system and control device shall be designed and operated in accordance with the requirements of Sec. 265.1088 of this subpart.
(3) An owner or operator transferring hazardous waste into a container having a design capacity greater than 0.46 m\3\ shall meet the following requirements:
(i) Hazardous waste transfer by pumping shall be performed using a conveyance system that uses a tube (e.g., pipe, hose) to add the waste into the container. During transfer of the waste into the container, the cover shall remain in place and all container openings shall be maintained in a closed, sealed position except for those openings through which the tube enters the container and as provided for in paragraph (c) of this section. The tube shall be positioned in a manner such that either the:
(A) Tube outlet continuously remains submerged below the waste surface at all times waste is flowing through the tube; (B) Lower bottom edge of the tube outlet is located at a distance no greater than two inside diameters of the tube or 15.25 cm, whichever distance is greater, from the bottom of the container at all times waste is flowing through the tube; or
(C) Tube is connected to a permanent port mounted on the bottom of the container so that the lower edge of the port opening inside the container is located at a distance equal to or less than 15.25 cm from the container bottom.
(ii) Hazardous waste transferred by a means other than pumping shall be performed such that during transfer of the waste into the container, the cover remains in place and all container openings are maintained in a closed, sealed position except for those openings through which the hazardous waste is added and as provided for in paragraph (d) of this section.
(c) Each container opening shall be maintained in a closed, sealed position (e.g., covered by a gasketed lid) at all times that hazardous waste is in the container except when it is necessary to use the opening to:
(1) Add, remove, inspect, or sample the material in the container; (2) Inspect, maintain, repair, or replace equipment located inside the container; or
(3) Vent gases or vapors from a cover located over or enclosing an open container to a closed-vent system connected to a control device that is designed and operated in accordance with the requirements of Sec. 265.1088 of this subpart.
(d) One or more safety devices that vent directly to the atmosphere may be used on the container, cover, enclosure, closed-vent system, or control device provided each device meets all of the following conditions:
(1) The safety device is not used for planned or routine venting of organic vapors from the container, cover, enclosure, or closed-vent system connected to a control device; and (2) The safety device remains in a closed, sealed position at all times except when an unplanned event requires that the device open for the purpose of preventing physical damage or permanent deformation of the container, cover, enclosure, closed-vent system, or control device in accordance with good engineering and safety practices for handling flammable, combustible, explosive, or other hazardous materials. An example of an unplanned event is a sudden power outage.

Sec. 265.1088 Standards: Closed-vent systems and control devices.

(a) This section applies to each closed-vent system and control device installed and operated by the owner or operator to control air emissions in accordance with standards of this subpart. (b) The closed-vent system shall meet the following requirements: (1) The closed-vent system shall route the gases, vapors, and fumes emitted from the hazardous waste in the waste management unit to a control device that meets the requirements specified in paragraph (c) of this section.

(2) The closed-vent system shall be designed and operated in accordance with the requirements specified in Sec. 265.1033(j) of this part.
(3) If the closed-vent system contains one or more bypass devices that could be used to divert all or a portion of the gases, vapors, or fumes from entering the control device, the owner or operator shall meet the following requirements:
(i) For each bypass device except as provided for in paragraph (b)(3)(ii) of this section, the owner or operator shall either: (A) Install, calibrate, maintain, and operate a flow indicator at the inlet to the bypass device that indicates at least once every 15 minutes whether gas, vapor, or fume flow is present in the bypass device; or
(B) Secure the valve installed at the inlet to the bypass device in the closed position using a car-seal or a lock-and-key type configuration. The owner or operator shall visually inspect the seal or closure mechanism at least once every month to verify that the valve is maintained in the closed position.
(ii) Low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and safety devices are not subject to the requirements of paragraph (b)(3)(i) of this section. (c) The control device shall meet the following requirements: (1) The control device shall be one of the following devices: (i) A control device designed and operated to reduce the total organic content of the inlet vapor stream vented to the control device by at least 95 percent by weight;
(ii) An enclosed combustion device designed and operated in accordance with the requirements of Sec. 265.1033(c); or (iii) A flare designed and operated in accordance with the requirements of Sec. 265.1033(d).
(2) The control device shall be operating at all times when gases, vapors, or fumes are vented from the waste management unit through the closed-vent system to the control device. (3) The owner or operator using a carbon adsorption system to comply with paragraph (c)(1) of this section shall operate and maintain the control device in accordance with the following requirements: (i) Following the initial startup of the control device, all activated carbon in the control device shall be replaced with fresh carbon on a regular basis in accordance with the requirements of Sec. 265.1033(g) or Sec. 265.1033(h).
(ii) All carbon removed from the control device shall be managed in accordance with the requirements of Sec. 265.1033(l). (4) An owner or operator using a control device other than a thermal vapor incinerator, flare, boiler, process heater, condenser, or carbon adsorption system to comply with paragraph (c)(1) of this section shall operate and maintain the control device in accordance with the requirements of Sec. 265.1033(i). (5) The owner or operator shall demonstrate that a control device achieves the performance requirements of paragraph (c)(1) of this section as follows:
(i) An owner or operator shall demonstrate using either a performance test as specified in paragraph (c)(5)(iii) of this section or a design analysis as specified in paragraph (c)(5)(iv) of this section the performance of each control device except for the following:
(A) A flare;
(B) A boiler or process heater with a design heat input capacity of 44 megawatts or greater;
(C) A boiler or process heater into which the vent stream is introduced with the primary fuel;
(D) A boiler or process heater burning hazardous waste for which the owner or operator has been issued a final permit under 40 CFR part 270 and designs and operates the unit in accordance with the requirements of 40 CFR part 266, subpart H; or (E) A boiler or process heater burning hazardous waste for which the owner or operator has certified compliance with the interim status requirements of 40 CFR part 266, subpart H. (ii) An owner or operator shall demonstrate the performance of each flare in accordance with the requirements specified in Sec. 265.1033(e).
(iii) For a performance test conducted to meet the requirements of paragraph (c)(5)(i) of this section, the owner or operator shall use the test methods and procedures specified in Sec. 265.1034(c)(1) through

(c)(4).
(iv) For a design analysis conducted to meet the requirements of paragraph (c)(5)(i) of this section, the design analysis shall meet the requirements specified in Sec. 265.1035(b)(4)(iii). (v) The owner or operator shall demonstrate that a carbon adsorption system achieves the performance requirements of paragraph (c)(1) of this section based on the total quantity of organics vented to the atmosphere from all carbon adsorption system equipment that is used for organic adsorption, organic desorption or carbon regeneration, organic recovery, and carbon disposal.
(6) If the owner or operator and the Regional Administrator do not agree on a demonstration of control device performance using a design analysis then the disagreement shall be resolved using the results of a performance test performed by the owner or operator in accordance with the requirements of paragraph (c)(5)(iii) of this section. The Regional Administrator may choose to have an authorized representative observe the performance test.

Sec. 265.1089 Inspection and monitoring requirements.

(a) This section applies to an owner or operator using air emission controls in accordance with the requirements of Sec. 265.1085 through Sec. 265.1088 of this subpart.
(b) Each cover used in accordance with requirements of Sec. 265.1085 through Sec. 265.1087 of this subpart shall be visually inspected and monitored for detectable organic emissions by the owner or operator using the procedure specified in paragraph (f) of this section except as follows:
(1) An owner or operator is exempted from performing the cover inspection and monitoring requirements specified in paragraph (f) of this section for the following tank covers: (i) A tank internal floating roof that is inspected and monitored in accordance with the requirements of Sec. 265.1091 of this subpart; or
(ii) A tank external floating roof that is inspected and monitored in accordance with the requirements of Sec. 265.1091 of this subpart. (2) If a tank is buried partially or entirely underground, an owner or operator is required to perform the cover inspection and monitoring requirements specified in paragraph (f) of this section only for those portions of the tank cover and those connections to the tank cover or tank body (e.g. fill ports, access hatches, gauge wells, etc.) that extend to or above the ground surface and can be opened to the atmosphere.
(3) An owner or operator is exempted from performing the cover inspection and monitoring requirements specified in paragraph (f) of this section for a container that meets all requirements specified in either Sec. 265.1087(b)(1)(ii) or Sec. 265.1087(b)(1)(iii) of this subpart.
(4) An owner or operator is exempted from performing the cover inspection and monitoring requirements specified in paragraph (f) of this section for an enclosure used to control air emissions from containers in accordance with the requirements of Sec. 265.1087(b)(2) of this subpart.
(c) Each closed-vent system used in accordance with the requirements of Sec. 265.1088 of this subpart shall be inspected and monitored by the owner or operator in accordance with the procedure specified in Sec. 265.1033(j).
(d) Each control device used in accordance with the requirements of Sec. 265.1088 of this subpart shall be inspected and monitored by the owner or operator in accordance with the procedure specified in Sec. 265.1033(f).
(e) The owner or operator shall develop and implement a written plan and schedule to perform all inspection and monitoring requirements of this section. The owner or operator shall incorporate this plan and schedule into the facility inspection plan required under 40 CFR 265.15.
(f) Inspection and monitoring of a cover in accordance with the requirements of paragraph (b) of this section shall performed as follows:
(1) The cover and all cover openings shall be initially visually inspected and monitored for detectable organic emissions on or before the date that the tank, surface impoundment, or container using the cover becomes subject to the provisions of this subpart and at other times as requested by the Regional Administrator. (2) At least once every 6 months following the

initial visual inspection and monitoring for detectable organic emissions required under paragraph (f)(1) of this section, the owner and operator shall visually inspect and monitor the cover and each cover opening except for following cover openings:
(i) A cover opening that has continuously remained in a closed, sealed position for the entire period since the last time the cover opening was visually inspected and monitored for detectable emissions; (ii) A cover opening that is designated as unsafe to inspect and monitor in accordance with paragraph (f)(5) of this section; (iii) A cover opening on a cover installed and placed in operation before December 6, 1994, that is designated as difficult to inspect and monitor in accordance with paragraph (f)(6) of this section. (3) To visually inspect a cover, the owner or operator shall view the entire cover surface and each cover opening in a closed, sealed position for evidence of any defect that may affect the ability of the cover or cover opening to continue to operate with no detectable organic emissions. A visible hole, gap, tear, or split in the cover surface or a cover opening is defined as a leak which shall be repaired in accordance with paragraph (f)(7) of this section. (4) To monitor a cover for detectable organic emissions, the owner or operator shall use the following procedure: (i) Method 21 in 40 CFR part 60, appendix A to test each cover seal and cover connection for detectable organic emissions. Seals on floating membrane covers shall be monitored around the entire perimeter of the cover at locations spaced no greater than 3 meters apart. (ii) For all cover connections and seals except for the seals around a rotating shaft that passes through a cover opening, if the monitoring instrument indicates detectable organic emissions (i.e., an instrument concentration reading greater than 500 ppmv plus the background level), then a leak is detected. Each detected leak shall be repaired in accordance with paragraph (f)(7) of this section. (iii) For the seals around a rotating shaft that passes through a cover opening, if the monitoring instrument indicates a concentration reading greater than 10,000 ppmv, then a leak is detected. Each detected leak shall be repaired in accordance with paragraph (f)(7) of this section.
(5) An owner or operator may designate a cover as an unsafe to inspect and monitor cover if all of the following conditions are met: (i) The owner or operator determines that inspection or monitoring of the cover would expose a worker to dangerous, hazardous, or other unsafe conditions.
(ii) The owner or operator develops and implements a written plan and schedule to inspect the cover using the procedure specified in paragraph (f)(3) of this section and monitor the cover using the procedure specified in paragraph (f)(4) of this section as frequently as practicable during those times when a worker can safely access the cover.
(6) An owner or operator may designate a cover installed and placed in operation before December 6, 1994, as a difficult to inspect and monitor cover if all of the following conditions are met: (i) The owner or operator determines that inspection or monitoring the cover requires elevating a worker to a height greater than 2 meters above a support surface; and
(ii) The owner and operator develops and implements a written plan and schedule to inspect the cover using the procedure specified in paragraph (f)(3) of this section, and to monitor the cover using the procedure specified in paragraph (f)(4) of this section at least once per calendar year.
(7) When a leak is detected by either of the methods specified in paragraph (f)(3) or (f)(4) of this section, the owner or operator shall repair the leak in the following manner: (i) The owner or operator shall make a first attempt at repairing the leak no later than 5 calendar days after the leak is detected. Repair of the leak shall be completed as soon as practicable, but no later than 15 calendar days after the leak is detected. If repair of the leak cannot be completed within the 15-day period, except as provided in paragraph (f)(7)(ii) of this section, then the owner or operator shall not add hazardous waste to the tank, surface impoundment, or container on which the cover is installed until the repair of the leak is completed.
(ii) Repair of a leak detected on a cover installed on a tank or surface

impoundment may be delayed beyond 15 calendar days if the owner or operator determines that both of the following conditions occur: (A) Repair of the leak requires first emptying the contents of the tank or surface impoundment; and
(B) Temporary removal of the tank or surface impoundment from service will result in the unscheduled cessation of production from the process unit or operation of the waste management unit that is generating the hazardous waste managed in the tank or surface impoundment.
(iii) Repair of a leak determined by the owner or operator to meet the conditions specified in paragraph (f)(7)(ii) of this section shall be performed at the next time the process, system, or waste management unit that is generating the hazardous waste managed in the tank or surface impoundment stops operation for any reason.

Sec. 265.1090 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to requirements in this subpart shall record and maintain the following information as applicable:
(1) Documentation for each cover installed on a tank in accordance with the requirements of Sec. 265.1085(b)(2) or Sec. 265.1085(b)(3) of this subpart that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the applicable design specifications as listed in Sec. 265.1091(c) of this subpart.
(2) Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of Sec. 265.1086(c) of this subpart that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in Sec. 265.1086(e) of this subpart.
(3) Documentation for each enclosure used to control air emissions from containers in accordance with the requirements of Sec. 265.1087(b)(2)(i) of this subpart that includes information prepared by the owner or operator or provided by the manufacturer or vendor describing the enclosure design, and certification by the owner or operator that the enclosure meets the specifications listed in Sec. 265.1087(b)(2)(ii) of this subpart. (4) Documentation for each closed-vent system and control device installed in accordance with the requirements of Sec. 265.1088 of this subpart that includes:
(i) Certification that is signed and dated by the owner or operator stating that the control device is designed to operate at the performance level documented by a design analysis as specified in paragraph (a)(4)(ii) of this section or by performance tests as specified in paragraph (a)(4)(iii) of this section when the tank, surface impoundment, or container is or would be operating at capacity or the highest level reasonably expected to occur. (ii) If a design analysis is used, then design documentation as specified in Sec. 265.1035(b)(4). The documentation shall include information prepared by the owner or operator or provided by the control device manufacturer or vendor that describes the control device design in accordance with Sec. 265.1035(b)(4)(iii) and certification by the owner or operator that the control equipment meets the applicable specifications.
(iii) If performance tests are used, then a performance test plan as specified in Sec. 265.1035(b)(3) and all test results. (iv) Information as required by Sec. 265.1035(c)(1) and Sec. 265.1035(c)(2).
(5) Records for all Method 27 tests performed by the owner or operator for each container used to meet the requirements of Sec. 265.1087(b)(1)(iii) of this subpart. (6) Records for all visual inspections conducted in accordance with the requirements of Sec. 265.1089 of this subpart. (7) Records for all monitoring for detectable organic emissions conducted in accordance with the requirements of Sec. 265.1089 of this subpart.
(8) Records of the date of each attempt to repair a leak, repair methods applied, and the date of successful repair. (9) Records for all continuous monitoring conducted in accordance with the requirements of Sec. 265.1089

of this subpart. (10) Records of the management of carbon removed from a carbon adsorption system conducted in accordance with Sec. 265.1088(c)(3)(ii) of this subpart.
(11) Records for all inspections of each cover installed on a tank in accordance with the requirements of Sec. 265.1085(b)(2) or Sec. 265.1085(b)(3) of this subpart that includes information as listed in Sec. 265.1091(c) of this subpart.
(b) An owner or operator electing to use air emission controls for a tank in accordance with the conditions specified in Sec. 265.1085(c) of this subpart shall record the following information: (1) Date and time each waste sample is collected for direct measurement of maximum organic vapor pressure in accordance with Sec. 265.1084(c) of this subpart.
(2) Results of each determination for the maximum organic vapor pressure of the waste in the tank performed in accordance with Sec. 265.1084(c) of this subpart.
(3) Records specifying the tank dimensions and design capacity. (c) An owner or operator electing to use air emission controls for a tank in accordance with the requirements of Sec. 265.1091 of this subpart shall record the information required by Sec. 265.1091(c) of this subpart.
(d) An owner or operator electing not to use air emission controls for a particular tank, surface impoundment, or container subject to this subpart in accordance with the conditions specified in Sec. 265.1083(c) of this subpart shall record the information used by the owner or operator for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of Sec. 265.1084 of this subpart. (e) An owner or operator electing to comply with requirements in accordance with Sec. 265.1083(c)(2)(vi) or Sec. 265.1083(c)(2)(v) of this subpart shall record the identification number for the incinerator, boiler, or industrial furnace in which the hazardous waste is treated.
(f) An owner or operator designating a cover as unsafe to inspect and monitor pursuant to Sec. 265.1089(f)(5) of this subpart or difficult to inspect and monitor pursuant to Sec. 265.1089(f)(6) of this subpart shall record in a log that is kept in the facility operating record the following information: (1) A list of identification numbers for tanks with covers that are designated as unsafe to inspect and monitor in accordance with the requirements of Sec. 265.1089(f)(5) of this subpart, an explanation for each cover stating why the cover is unsafe to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover. (2) A list of identification numbers for tanks with covers that are designated as difficult to inspect and monitor in accordance with the requirements of Sec. 265.1089(f)(6) of this subpart, an explanation for each cover stating why the cover is difficult to inspect and monitor, and the plan and schedule for inspecting and monitoring each cover. (g) All records required by paragraphs (a) through (f) of this section except as required in paragraphs (a)(1) through (a)(4) of this section shall be maintained in the operating record for a minimum of 3 years. All records required by paragraphs (a)(1) through (a)(4) of this section shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service.
(h) The owner or operator of a facility that is subject to this subpart and to the control device standards in 40 CFR part 60, subpart VV, or 40 CFR part 61, subpart V, may elect to demonstrate compliance with the applicable sections of this subpart by documentation either pursuant to this subpart, or pursuant to the provisions of 40 CFR part 60, subpart VV or 40 CFR part 61, subpart V, to the extent that the documentation required by 40 CFR parts 60 or 61 duplicates the documentation required by this section.

Sec. 265.1091 Alternative tank emissions control requirements.

(a) This section applies to owners and operators of tanks electing to

comply with Sec. 265.1085(b)(2) or (b)(3) of this subpart. (1) The owner or operator electing to comply with Sec. 265.1085(b)(2) of this subpart shall design, install, operate, and maintain a fixed roof and internal floating roof that meet the following requirements.
(i) The fixed roof shall comply with the requirements of Sec. 265.1085(d)(1) of this subpart. The internal floating roof shall rest or float on the waste surface (but not necessarily in complete contact with it) inside a tank that has a fixed roof. The internal floating roof shall be floating on the waste surface at all times, except during initial fill and during those intervals when the tank is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.
(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the tank and the edge of the internal floating roof:
(A) A foam- or liquid-filled seal mounted in contact with the waste (liquid-mounted seal). A liquid-mounted seal means a foam- or liquidfilled seal mounted in contact with the waste between the wall of the tank and the floating roof continuously around the circumference of the tank.
(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the tank and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both shall be continuous. (C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the tank by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.
(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the waste surface. (iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use. (v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. (vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting. (vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening. (viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover. (ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover. (2) The owner or operator electing to comply with Sec. 265.1085(b)(3) of this subpart shall design, install, operate, and maintain an external floating roof that meets the following requirements:
(i) Each external floating roof shall be equipped with a closure device between the wall of the tank and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.
(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in paragraph (b)(2)(iv) of this section, the seal shall completely cover the annular space between the edge of the floating roof and tank wall. (B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the tank in a continuous fashion except as allowed in paragraph (b)(2)(iv)

of this section.
(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the waste surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening. (iii) The roof shall be floating on the waste at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. (3) The owner or operator may elect to comply with Sec. 265.1085(b)(2) or (b)(3) of this subpart using an alternative means of emission limitation for which a Federal Register notice has been published in accordance with the requirements of 40 CFR 60.114b permitting its use as an alternative means for the purpose of compliance with 40 CFR 60.112b.
(b) Monitoring and inspection of the control equipment described in paragraph (a) of this section shall be conducted as follows: (1) After installation, owners and operators of internal floating roofs shall:
(i) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the tank with waste. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric, or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the tank.
(ii) For tanks equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the waste inside the tank, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the tank from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the tank cannot be emptied within 45 days, a 30-day extension may be requested from the Regional Administrator. Such a request for an extension shall document that alternate capacity is unavailable and specify a schedule of actions the owner or operator will take that will assure that the control equipment will be repaired or the tank will be emptied as soon as possible. (iii) For tanks equipped with a double-seal system as specified in paragraph (a)(1)(i)(B) of this section: (A) Visually inspect the tank as specified in paragraph (b)(1)(iv) of this section at least every 5 years; or (B) Visually inspect the tank as specified in paragraph (b)(1)(ii) of this section.
(iv) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes, and sleeve seals (if any) each time the tank is emptied and degassed. If the internal floating roof has defects; the primary seal has holes, tears, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric; or the gaskets no longer close off the waste surfaces from the atmosphere; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions

specified in this paragraph exist before refilling the tank with waste. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of tanks conducting the annual visual inspection as specified in paragraph (b)(1)(ii) of this section, and at intervals no greater than 5 years in the case of tanks specified in paragraph (b)(1)(iii) of this section.
(v) Notify the Regional Administrator in writing at least 30 days prior to the filling or refilling of each tank for which an inspection is required by paragraphs (b)(1)(i) and (b)(1)(iv) of this section to afford the Regional Administrator the opportunity to have an observer present. If the inspection required by paragraph (b)(1)(iv) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Regional Administrator at least 7 days prior to the refilling of the tank. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned.
Alternatively, this notification, including the written documentation, may be made in writing and sent by express mail so that it is received by the Regional Administrator at least 7 days prior to the refilling.
(2) After installation, the owner or operator of an external floating roof shall:
(i) Determine the gap areas and maximum gap widths between the primary seal and the wall of the tank and between the secondary seal and the wall of the tank according to the following frequency: (A) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the tank or within 60 days of the initial fill with waste and at least once every 5 years thereafter.
(B) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with waste and at least once per year thereafter.
(C) If any tank ceases to hold waste for a period of 1 year or more, subsequent introduction of waste into the tank shall be considered an initial fill for the purposes of paragraphs (b)(2)(i)(A) and (b)(2)(i)(B) of this section.
(ii) Determine the gap widths and areas in the primary and secondary seals individually by the following procedures: (A) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports. (B) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against the seal) between the seal and the wall of the tank and measure the circumferential distance of each such location.
(C) Determine the total surface area of each gap described in paragraph (b)(2)(ii)(B) of this section by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.
(iii) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(2)(iv) of this section. (iv) Make necessary repairs or empty the tank within 45 days of identification in any inspection for seals not meeting the following requirements:
(A) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 cm<SUP>2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.
(1) One end of the mechanical shoe is to extend into the waste contained in the tank, and the other end is to extend a minimum vertical distance of 61 cm above the waste surface. (2) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.
(B) The secondary seal is to meet the following requirements: (1) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(ii)(C) of this section. (2) The accumulated

area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm<SUP>2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.
(3) There are to be no holes, tears, or other openings in the seal or seal fabric.
(v) If a failure that is detected during inspections required in paragraph (b)(2)(i) of this section cannot be repaired within 45 days and if the tank cannot be emptied within 45 days, a 30-day extension may be requested from the Regional Administrator. Such extension request shall include a demonstration of the unavailability of alternate capacity and a specification of a schedule that will assure that the control equipment will be repaired or the tank will be emptied as soon as possible.
(vi) Notify the Regional Administrator 30 days in advance of any gap measurements required by paragraph (b)(2)(i) of this section to afford the Regional Administrator the opportunity to have an observer present.
(vii) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.
(A) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the tank with waste. (B) For all the inspections required by paragraph (b)(2)(vii) of this section, the owner or operator shall notify the Regional Administrator in writing at least 30 days prior to the filling or refilling of each tank to afford the Regional Administrator the opportunity to inspect the tank prior to refilling. If the inspection required by paragraph (b)(2)(vii) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Regional Administrator at least 7 days prior to the refilling of the tank. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification, including the written documentation, may be made in writing and sent by express mail so that it is received by the Regional Administrator at least 7 days prior to the refilling.
(c) Owners and operators who elect to install and operate the control equipment in paragraph (a) of this section shall include the following information in the operating record in accordance with the requirements of Sec. 265.1090(a)(1) and (a)(11) of this subpart: (1) Internal floating roof.
(i) Documentation that describes the control equipment design and certifies that the control equipment meets the specifications of paragraphs (a)(1) and (b)(1) of this section. (ii) Records of each inspection performed as required by paragraphs (b)(1)(i) through (b)(1)(iv) of this section. Each record shall identify the tank on which the inspection was performed and shall contain the date the tank was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).
(iii) If any of the conditions described in paragraph (b)(1)(ii) of this section are detected during the annual visual inspection required by paragraph (b)(1)(ii) of this section, the records shall identify the tank, the nature of the defects, and the date the tank was emptied or the nature of and date the repair was made. (iv) After each inspection required by paragraph (b)(1)(iii) of this section that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in paragraph (b)(1)(ii) of this section, the records shall identify the tank and the reason it did not meet the specifications of paragraph (a)(1) or (b)(1)(iii) of this section and describe each repair made.
(2) External floating roof.
(i) Documentation that describes the control equipment design and certifies that the control equipment meets the specifications of paragraphs (a)(2)

and (b)(2)(ii) through (b)(2)(iv) of this section. (ii) Records of each gap measurement performed as required by paragraph (b)(2) of this section. Each record shall identify the tank in which the measurement was performed, the date of measurement, the raw data obtained in the measurement, and the calculations described in paragraphs (b)(2)(ii) and (b)(2)(iii) of this section. (iii) Records for each seal gap measurement that detects gaps exceeding the limitations specified by paragraph (b)(2)(iv) of this section that identifies the tank, the date the tank was emptied or the repairs made, and the nature of the repair.

PART 270--EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE MANAGEMENT PROGRAM

33. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6925, 6927, 6939, and 6974.

Subpart A--General Information

34. Section 270.4 is amended by revising paragraphs (a)(2), and (a)(3) and by adding paragraph (a)(4) to read as follows:

Sec. 270.4 Effect of a permit.

(a) * * *
(2) Are promulgated under part 268 of this chapter restricting the placement of hazardous wastes in or on the land; (3) Are promulgated under part 264 of this chapter regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units. The leak detection system requirements include double liners, CQA programs, monitoring, action leakage rates, and response action plans, and will be implemented through the procedures of Sec. 270.42 Class 1 permit modifications; or (4) Are promulgated under subparts AA, BB, or CC of part 265 of this chapter limiting air emissions.

* * * * *

Subpart B--Permit Application

35. Section 270.14 is amended by revising paragraph (b)(5) to read as follows:

Sec. 270.14 Contents of Part B: General requirements.

* * * * *
(b) * * *
(5) A copy of the general inspection schedule required by Sec. 264.15(b). Include where applicable, as part of the inspection schedule, specific requirements in Secs. 264.174, 245.193(i), 264.195, 264.226, 264.254, 264.273, 264.303, 264.602, 264.1033, 264.1052, 264.1053, 264.1058, 264.1088, and 264.1091.
* * * * *
* Section 270.15 is amended by adding paragraph (e) to read as follows:

Sec. 270.15 Specific Part B information requirements for containers.

* * * * *
(e) Information on air emission control equipment as required in Sec. 270.27.
* Section 270.16 is amended by adding paragraph (k) to read as follows:

Sec. 270.16 Specific Part B information requirements for tank systems.

* * * * *

(k) Information on air emission control equipment as required in Sec. 270.27.

* Section 270.17 is amended by adding paragraph (j) to read as follows:

Sec. 270.17 Specific Part B information requirements for surface impoundments.

* * * * *

(j) Information on air emission control equipment as required in Sec. 270.27.

* Part 270 subpart B is amended by adding Sec. 270.27 to read as follows:

Sec. 270.27 Specific Part B information requirements for air emission controls for tanks, surface impoundments, and containers.

(a) Except as otherwise provided in Sec. 264.1 of this chapter, owners and operators of tanks, surface impoundments, or containers that use air emission controls in accordance with the requirements of 40 CFR part 264, subpart CC shall provide the following additional information:
(1) Documentation for each cover installed on a tank subject to Sec. 264.1084(b)(2) or Sec. 264.1084(b)(3) of this chapter that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the applicable design specifications as listed in Sec. 265.1091(c) of this chapter.
(2) Identification of each container area subject to the requirements of 40 CFR part 264, subpart CC and certification by the owner or operator that the requirements of this subpart are met. (3) Documentation for each enclosure used to control air emissions from containers in accordance with the requirements of Sec. 264.1086(b)(2)(i) of this chapter that includes information prepared by the owner or operator or provided by the manufacturer or vendor describing the enclosure design, and certification by the owner or operator that the enclosure meets the specifications listed in Sec. 265.1087(b)(2)(ii) of this chapter. (4) Documentation for each floating membrane cover installed on a surface impoundment in accordance with the requirements of Sec. 264.1085(c) of this chapter that includes information prepared by the owner or operator or provided by the cover manufacturer or vendor describing the cover design, and certification by the owner or operator that the cover meets the specifications listed in Sec. 265.1086(e) of this chapter.
(5) Documentation for each closed-vent system and control device installed in accordance with the requirements of Sec. 264.1087 of this chapter that includes design and performance information as specified in Sec. 270.24 (c) and (d).
(6) An emission monitoring plan for both Method 21 and control device monitoring methods. This plan shall include the following information: monitoring point(s), monitoring methods for control devices, monitoring frequency, procedures for documenting exceedances, and procedures for mitigating noncompliances. (7) When an owner or operator of a facility subject to 40 CFR part 265, subpart CC cannot comply with 40 CFR part 264, subpart CC by the date of permit issuance, the schedule of implementation required under Sec. 265.1082 of this chapter.

PART 271--REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

40. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A--Requirements for Final Authorization

41. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication:

Sec. 271.1 Purpose and scope.

* * * * *

(j) * * *

Table 1--Regulations Implementing the Hazardous and Solid Waste Amendments of 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
		* * * * * * *	
[insert date of publication	Air Emission Standards for Tanks, Surface Impoundments, and Containers.	[Insert Federal Register [insert date 180 days in the Federal Register].	Tanks, Surface reference to final rule]. after date of publication in the Federal Register].

* * * * *

* Section 271.1(j) is amended by adding the following entry to Table 2 in chronological order by date of publication:

Sec. 271.1 Purpose and scope.

* * * * *

(j) * * *

Table 2--Self-Implementing Provisions of the Hazardous and Solid Waste Amendments of 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
		* * * * * * *	
June 5, 1995	Air Emission Standards for Tanks, Surface Impoundments, and Containers.	3004(n)	[Insert Federal Register reference to final rule]

* * * * *

[FR Doc. 94-29693 Filed 12-5-94; 8:45 am] BILLING CODE 6560-50-P

1993 and has not been reviewed by the Office of Management and Budget. As required by the Regulatory Flexibility Act, it is hereby certified that this rule will not have a significant impact on small entities.

List of Subjects in 36 CFR Part 1258

Archives and records.

PART 1258—FEES

Accordingly, the interim final rule amending 36 CFR part 1258 which was published at 60 FR 5579 on January 30, 1995, is adopted as a final rule without change.

Dated: May 11, 1995.

Trudy Huskamp Peterson,

Acting Archivist of the United States.

[FR Doc. 95–12323 Filed 5–18–95; 8:45 am]

BILLING CODE 7515–01–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264, 265, 270, and 271

[FRL–5206–9]

RIN 2060–AB94

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of postponed effective date.

SUMMARY: This document postpones the effective date of the final rule on Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers until December 6, 1995.

EFFECTIVE DATE: The final rule will be effective as of December 6, 1995. The EPA specified in the final rule a schedule that established the compliance dates by which different requirements of the rule must be met. These compliance dates and requirements are explained further in the final rule (59 FR 62896, December 6, 1994) under **SUPPLEMENTARY INFORMATION**. This document only changes the June 5, 1995 effective date to December 6, 1995; all other compliance dates for the final rule remain as published in the final rule (59 FR 62896, December 6, 1994.)

ADDRESSES: Docket. The supporting information used for the final rule is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to the final rule are F–91–CESP–FFFFF, F–92–CESA–FFFFF, F–94–CESF–FFFFF, and F–94–CE2A–FFFFF. The docket is available for inspection at the EPA RCRA Docket Office (5305), Room 2616, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: For information about this postponement contact the RCRA Hotline at (800) 424–9346 toll-free, or (703) 920–9810.

SUPPLEMENTARY INFORMATION: This document announces the postponement of the effective date for the final Air Emission Standards published under the Resource Conservation and Recovery Act. These final standards were published on December 6, 1994 (59 FR 62896) and were originally scheduled to become effective as of June 5, 1995. Since promulgation, the EPA has become aware that certain provisions of the final standards may require clarification, and plans to publish a subsequent **Federal Register** document to clarify such provisions. This process may result in compliance options that facilities do not now realize are available. To ensure that all options are clear to affected facilities, and to ensure that all affected facilities have time to make any such alterations in their compliance plan prior to the effective date of the standards, EPA is postponing the effective date of the final rule for six months. The EPA considers a postponement of six months to be adequate time to allow for affected facilities to make any such necessary adjustments. The EPA also believes that it would be inequitable not to postpone the effective date in light of the possibility of increased compliance flexibility, so that a modest postponement is justified. See 5 U.S.C. 705 (''when an agency finds that justice so requires, it may postpone the effective date of action taken by it, pending judicial review''). Therefore, the effective date of the final rule will be postponed until December 6, 1995. The final rule text affected by this change is amended as follows.

List of Subjects

40 CFR Part 264

Environmental protection, Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds.

40 CFR Part 265

Air pollution control, Hazardous waste, Insurance, Packaging and containers, Reporting and recordkeeping requirements, Security measures, Surety bonds, Water supply.

40 CFR Part 271

Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indians-lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: May 8, 1995.

Mary D. Nichols,

Assistant Administrator Office of Air and Radiation.

For the reasons set out in the preamble, title 40, chapter I, parts 264, 265, and 271 of the Code of Federal Regulations are amended as follows:

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

2. Section 264.1080 is amended by revising paragraphs (b)(1) and (c) to read as follows:

§ 264.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1995, and in which no hazardous waste is added to the unit on or after this date.

* * * * *

(c) For the owner and operator of a facility subject to this subpart and who received a final permit under RCRA section 3005 prior to December 6, 1995, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of § 124.15 of this chapter or reviewed in accordance with the requirements of § 270.50(d) of this chapter. Until such date when the owner and operator receives a final permit incorporating the requirements of this subpart, the owner and operator is subject to the requirements of 40 CFR part 265 subpart CC.

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

4. Section 265.1080 is amended by revising paragraph (b)(1) and paragraph (c) introductory text to read as follows:

§ 265.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1995, and in which no hazardous waste is added to the unit on or after this date.

* * * * *

(c) For the owner and operator of a facility subject to this subpart who has received a final permit under RCRA section 3005 prior to December 6, 1995, the following requirements apply:

* * * * *

5. Section 265.1082 is amended by revising paragraphs (a) introductory text, paragraph (a)(1), (a)(2), introductory text, (a)(2)(iii), and (a)(2)(iv) to read as follows:

§ 265.1082 Schedule for implementation of air emission standards.

(a) Owners or operators of facilities existing on December 6, 1995, and subject to subparts I, J, and K of this part shall meet the following requirements:

(1) Install and begin operation of all control equipment required by this subpart by December 6, 1995, except as provided for in paragraph (a)(2) of this section.

(2) When control equipment required by this subpart cannot be installed and in operation by December 6, 1995, the owner or operator shall:

(i) * * *

(ii) * * *

(iii) For facilities subject to the recordkeeping requirements of § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than December 6, 1995.

(iv) For facilities not subject to § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility no later than December 6, 1995.

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

6. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A—Requirements for Final Authorization

7. Section 271.1(j) is amended by adding the promulgation date, **Federal Register** reference, and effective date to the following entry in Table 1 to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	* * * *	*	*
Dec. 6, 1994	Air Emission Standards for Tanks, Surface Impoundments, and Containers ...	59 FR 62896–62953	Dec. 6, 1995.

8. Section 271.1(j) is amended by revising the effective date and adding the **Federal Register** reference to the following entry in Table 2 to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	* * * *	*	*
Dec. 6, 1995	Air Emission Standards for Tanks, Surface Impoundments, and Containers	3004(n)	59 FR 62896–62953.

[FR Doc. 95–12367 Filed 5–18–95; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Administration for Children and Families

45 CFR Parts 1355 and 1356

RIN 0970–AB38

Statewide Automated Child Welfare Information Systems

AGENCY: Office of Information Systems Management (OISM), ACF, HHS.

ACTION: Final rule.

SUMMARY: These final rules implement section 13713 of the Omnibus Budget Reconciliation Act of 1993 (Pub. L. 103–66). Under section 13713, funding is made available for the planning, design, development and installation of statewide automated child welfare information systems. Such systems must be comprehensive in that they must meet the requirements for an Adoption and Foster Care Analysis and Reporting

WASHINGTON—CARBON MONOXIDE—Continued

Designated area	Designation		Classification	
	Date [1]	Type	Date [1]	Type
Clark County (part) Air Quality Maintenance Area.	.....	Nonattainment	.....	Moderate ≤12.7ppm.
* *	*	* *	*	*

[1] This date is November 15, 1990, unless otherwise noted.

* * * * *

[FR Doc. 95–24041 Filed 9–28–95; 8:45 am]

BILLING CODE 6560–50–P

40 CFR Parts 264 and 265

[IL–64–2–5807; FRL–5306–9]

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; stay.

SUMMARY: The EPA is issuing a stay subject to conditions for air standards applicable to hazardous waste treatment, storage, and disposal facilities (TSDF). This stay is applicable to tanks and containers used for the management of certain hazardous wastes generated by organic peroxide manufacturing processes. Certain organic peroxide manufacturing wastes are inherently unstable and can not safely be confined in closed units or systems. Therefore, the EPA is staying the applicability of the subpart CC technical requirements for units managing these specific organic peroxide compounds.

EFFECTIVE DATE: December 6, 1995.

ADDRESSES: Docket. Docket entries cited in this notice may be found in RCRA docket number F–94–CE2A–FFFFF. Other RCRA docket numbers that pertain to the final rule are F–91–CESP–FFFFF, F–92–CESA–FFFFF, and F–94–CESF–FFFFF. The docket is available for inspection at the EPA RCRA Docket Office (5305), Room 2616, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: For further information about this stay contact the RCRA Hotline at (703) 412–9877 or toll-free at 1–800–424–9346.

SUPPLEMENTARY INFORMATION:

I. Background

On December 6, 1994, the EPA published in the Federal Register (59 FR 62896) under authority of the Resource Conservation and Recovery Act (RCRA), as amended, standards requiring the use of air emission controls on certain tanks, surface impoundments, and containers at hazardous waste treatment, storage, and disposal facilities (TSDF). These standards are codified in 40 CFR parts 264 and 265 under subpart CC (referred to as the ''subpart CC standards'').

A major manufacturer of organic peroxide products has expressed its concern to the EPA regarding the availability of air emission controls which could safely be used on tanks and containers that manage certain types of organic peroxides. Certain organic peroxides are temperature sensitive compounds that are subject to spontaneous, rapid decomposition under certain conditions. The company maintains that use of the air emission controls required under the subpart CC standards on certain tanks and containers at their organic peroxides manufacturing facilities would have the potential to significantly increase the risk of explosion and fire. An inherent risk is created because these units manage a variety of organic peroxide wastes, including intermittent batches or streams containing organic peroxides that potentially undergo spontaneous, rapid thermal decomposition and hydrolysis at or below ambient temperatures.

A variety of organic peroxide products are manufactured in the United States for use by the plastics and allied industries. Typically, these organic peroxide compounds serve as initiators (catalysts) and resin hardeners in the manufacture of widely used polymer plastics (e.g., polystyrene, polyvinyl chloride, polyethylene, acrylic resins). At some organic peroxide manufacturing facilities, the production processes may generate hazardous wastes containing organic peroxides that are placed in waste management units subject to the subpart CC standards.

The manufacture, transport, and use of organic peroxide products may require implementing special safety precautions to avoid the spontaneous, rapid decomposition of certain organic peroxides. The rate at which these organic peroxides decompose is a function of temperature. Individual organic peroxide compounds and mixtures of these compounds have different sensitivities to temperature. Some organic peroxide compounds are relatively stable (i.e., do not decompose) at ambient temperatures (e.g., 30 °C). In general, it is not necessary to handle these types of organic peroxides any differently than other organic compounds during normal process operations. Other organic peroxide compounds can undergo spontaneous, rapid thermal decomposition and hydrolysis at temperatures at, or below, ambient temperatures. Once initiated, the self-accelerating thermal decomposition and hydrolysis reactions very rapidly generate large quantities of gaseous organic compounds and oxygen. Confinement of this gaseous mixture in an enclosed vessel (such as a covered tank or ventilation ducts) creates conditions that could result in explosion, detonation, and/or fire. Consequently, handling these types of organic peroxide compounds requires use of precautionary measures to address the possibility of uncontrolled organic peroxide decomposition.

The organic peroxide manufacturer who has raised this issue with the EPA produces a variety of organic peroxide products which are potentially unstable at or below ambient temperatures. The organic peroxide characteristics of the hazardous waste placed in tanks and containers at the company's facilities are highly variable because of the number of different types of organic peroxide products manufactured, the types of manufacturing processes used, and the nature of the operations used to safely handle organic peroxides at this company's facilities. Consequently, at any given time, the organic peroxide composition and concentration in the hazardous waste placed in these tanks and containers could potentially attain proportions initiating the spontaneous organic peroxide decomposition reactions. Unless provisions are made

for the very rapid evacuation of the decomposition gases, an explosion or fire could result in the waste management unit.

Prior to publication of the final subpart CC standards, the EPA received a letter from the company requesting the EPA to identify control technologies that could be safely used to control organic emissions from tanks managing hazardous waste waters that contains organic peroxides (RCRA docket entry F–94–CE2A–0001). The Agency was in the process of revising the draft final subpart CC standards to include a provision for safety venting of tanks and containers. Based on an initial review of the information provided, the Agency considered these safety vent provisions to be adequate to address the concerns raised by the company.

In November 1994, the EPA received a second letter restating the company's safety concerns with respect to implementing the subpart CC standards on tanks and containers at their organic peroxide manufacturing facilities (RCRA docket entry F–94–CE2A–0002). In response to this letter, the EPA met with company representatives on January 11, 1995 (RCRA docket entry F–94–CE2A–S0001). During this meeting, the company representatives stated that certain tanks and containers at its organic peroxide manufacturing facilities may require air emission controls under the subpart CC standards. Several different control equipment approaches for these tanks and containers have been considered by the company for complying with the subpart CC standards. For all cases, the company has concluded that use of the control equipment on the tanks and containers in accordance with the requirements specified in the subpart CC standards would have the potential to significantly increase the risk of explosion and fire at the company's facilities.

II. Issuance of Stay

The EPA expects that TSDF owners and operators will follow the proper safety procedures appropriate for their particular situations when designing and operating all air emission controls required by the subpart CC standards. In response to comments received at proposal, the EPA added several provisions to the final rule that specifically address special situations when venting of covers and other air emission control equipment is necessary for safety reasons. For example under 40 CFR 264.1084(g) and 40 CFR 265.1085(g), owners and operators are allowed to use pressure relief valves or other types of safety devices on a tank cover required under the subpart CC standards to address those special situations in which emergency venting of the covered tank is necessary, consistent with good engineering and safety practices, to prevent physical damage or permanent deformation of the tank or cover.

Following the January 11, 1995 meeting with the company, the EPA reviewed the air emission control equipment safety device provisions included in the final subpart CC standards with respect to the special nature of managing hazardous waste that contains organic peroxides with the potential to undergo spontaneous, self-accelerating decomposition reactions at or below ambient temperatures. The EPA recognizes that special precautions must be followed when handling hazardous wastes containing these types of organic peroxides. Tanks and containers used for management of this type of hazardous waste exist at one company's facilities and may exist at other TSDF locations of which the EPA is not yet aware. Some of these tanks and containers potentially could be subject to the subpart CC standards and require the use of air emission controls. The EPA recognizes that certain site-specific circumstances may exist where the provisions in the subpart CC standards allowing the use of safety devices on the air emission controls (as provided by, e.g., 40 CFR 264.1084(g)) may not be adequate to provide a level of safety consistent with good engineering and safety practices for handling organic peroxides, based on the composition of the organic peroxide wastes and the management operations for those wastes. Therefore, the EPA considers it appropriate to issue an administrative stay of the subpart CC standards' applicability, subject to conditions, for those special situations where hazardous waste that contains organic peroxides with the potential to undergo spontaneous, self-accelerating decomposition reactions at or below ambient temperatures are managed at a TSDF in tanks or containers, and for which the facility owner or operator determines that the use of any appropriate air emission controls, as required by the subpart CC standards, on these tanks and containers would create an undue safety hazard.

Based on the information provided to the EPA, the special circumstances requiring the need to issue this stay for these tanks and containers do not occur for TSDF surface impoundments. In particular, the only impoundment receiving these wastes is scheduled to be replaced by tanks before December 8, 1997, the compliance date by which facilities must install controls on units that were initially in compliance with the subpart CC standards through an implementation plan.

By today's issuance of the stay, the requirements of the subpart CC standards, with the exception of certain recordkeeping requirements, do not apply to TSDF tanks and containers used for management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the facility owner or operator meets all of the conditions of the stay. This means that, for these specific tanks and containers at a TSDF site, the facility owner and operator is neither required to install and operate the air emission controls specified in the subpart CC standards on the waste management units, nor required to perform waste determinations for the hazardous waste placed in the units provided that the owner or operator satisfies all three conditions of the stay.

The first condition of the stay is that the tank or container must be used to manage hazardous waste from organic peroxide manufacturing processes that produce more than one functional family of organic peroxides, and these organic peroxides are the predominant products manufactured by the process. Further, these organic peroxides can potentially undergo self-accelerating thermal decomposition at or below ambient temperatures and these organic peroxides are the predominate products manufactured by the process. For the purpose of meeting this condition of this stay, ''organic peroxide'' means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

The second condition of the stay is that the TSDF owner or operator must prepare documentation that explains why installation and operation of air emission controls on the tank or container, as required by the subpart CC standards, would create an undue safety hazard. The specific information that the EPA considers to be necessary to satisfy this condition is listed in § 264.1089(i) and § 265.1090(i) added to the subpart CC standards by today's action (the requirements in § 264.1089(i) applicable to permitted TSDF and in § 265.1090(i) applicable to interim-status TSDF are identical). The stay requires no administrative action by the EPA to take effect at a facility for which the owner or operator claims to satisfy the conditions of the stay. However, EPA officials (or officials from an

authorized State) could question the completeness and adequacy of the information prepared by the TSDF owner or operator to support the stay claim with respect to the requirements of § 264.1089(i) or § 265.1090(i), as applicable to the facility.

The third condition for the stay is that the TSDF owner or operator claiming the benefit of the stay submit a one-time notification of that fact to the appropriate EPA Region or authorized State office. This notice is to state that the TSDF manages hazardous wastes otherwise subject to the subpart CC standards in tanks and containers, but is not subject to those rules by virtue of this administrative stay. The notice must include the name and address of the facility, and must be signed and dated by an authorized representative of the facility owner or operator. This notification is necessary to alert EPA and State officials of the existence of the facility and, thus, provides a means of verifying if the stay conditions have been satisfied. As explained above, the stay is self-implementing; therefore, no administrative action by the EPA is necessary for the stay to apply to a particular TSDF. Thus, the notification does not present facts warranting grant of a stay; rather, it notifies the EPA and State authorities that the stay is being claimed by a TSDF owner or operator.

III. Administrative Requirements

A. Docket

Docket entries cited in this notice may be found in RCRA docket number F–94–CE2A-FFFFF. Other RCRA docket numbers that pertain to the final rule are F–91–CESP-FFFFF, F–92–CESA-FFFFF, and F–94–CESF-FFFFF. The docket is available for inspection at the EPA RCRA Docket Office (5305), Room 2616, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

IV. Legal Authority

The EPA is issuing this administrative stay pursuant to 5 U.S.C. 705, authorizing administrative agencies to stay administrative action pending judicial review when ''justice so requires.'' See also Rule 18 of the Federal Rules of Appellate Procedure authorizing issuance of administrative stays pending review. (A petition for review has been filed regarding applicability of the subpart CC standards to persons managing hazardous waste containing organic peroxides in tanks and containers.) The EPA believes that issuance of a stay for this type of hazardous waste is needed because the promulgated regulation could (in the limited circumstances discussed in this notice) make it more dangerous to manage the waste. The stay is needed to prevent such an adverse result. The EPA also believes that the minimal conditions attached to the stay—documentation of the reason why the stay applies plus a one-time notification—are necessary to limit the stay only to the situations warranting relief.

To the extent good cause (pursuant to 5 U.S.C. 553 (b)) is needed to justify the Agency's immediately effective conditioned stay, the EPA believes that it is provided by the need to avoid the risks of explosion that could occur without the stay. In addition, the EPA notes that the general issue of providing a type of safety-override in the rule was addressed during the comment period and in the final rule, so that today's action arises from the notice and comment already provided during the rulemaking.

V. State Authority

As discussed in the final subpart CC standards (59 FR 62921, December 6, 1994), rules promulgated under RCRA section 3004(n) implement a provision of the 1984 Hazardous and Solid Waste Amendments (HSWA) and consequently take effect immediately in authorized States. The EPA will implement these standards in an authorized State until such a time when the State either: (1) modifies its RCRA program to adopt the rules and receives final authorization from the EPA for the modification: or (2) receives interim authorization from the EPA. *Id.* The EPA views today's conditioned stay as part of the rule, so that a State seeking authorization for the subpart CC standards should include this provision.

List of Subjects 40 CFR Parts 264 and 265

Air pollution control, Container, Control Device, Hazardous waste, Incorporation by reference, Inspection, Miscellaneous unit, Monitoring, Reporting and recordkeeping requirements, Standards, Surface impoundment, Tank, Waste determination.

Dated: September 14, 1995.

Mary D. Nichols,

Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, title 40, chapter I, parts 264 and 265 of the Code of Federal Regulations are amended as follows:

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

2. In § 264.1080, paragraph (d) is added to read as follows:

§ 264.1080 Applicability.

* * * * *

(d) The requirements of this subpart, except for the recordkeeping requirements specified in § 264.1089(i) of this subpart, are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

(1) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this paragraph, ''organic peroxide'' means an organic compound that contains the bivalent —O—O— structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(2) The owner or operator prepares documentation, in accordance with the requirements of § 264.1089(i) of this subpart, explaining why an undue safety hazard would be created if air emission controls specified in §§ 264.1084 through 264.1087 of this subpart are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of paragraph (d)(1) of this section.

(3) The owner or operator notifies the Regional Administrator in writing that hazardous waste generated by an

organic peroxide manufacturing process or processes meeting the conditions of paragraph (d)(1) of this section are managed at the facility in tanks or containers meeting the conditions of paragraph (d)(2) of this section. The notification shall state the name and address of the facility, and be signed and dated by an authorized representative of the facility owner or operator.

3. In § 264.1089, paragraph (i) is added to read as follows:

§ 264.1089 Recordkeeping requirements.

* * * * *

(i) For each tank or container not using air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1080(d) of this subpart, the owner or operator shall record and maintain the following information:

(1) A list of the individual organic peroxide compounds manufactured at the facility that meet the conditions specified in § 264.1080(d)(1).

(2) A description of how the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section are managed at the facility in tanks and containers. This description shall include:

(i) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: a facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: a facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

(3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section in the tanks and containers as described in paragraph (i)(2) of this section would create an undue safety hazard if the air emission controls, as required under §§ 264.1084 through 264.1087 of this subpart, are installed and operated on these waste management units. This explanation shall include the following information:

(i) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: how use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under § 264.1084(g) of this subpart, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: how use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under § 264.1086(d) of this subpart, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

4. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

5. In § 265.1080, paragraph (d) is added to read as follows:

§ 265.1080 Applicability.

* * * * *

(d) The requirements of this subpart, except for the recordkeeping requirements specified in § 265.1090(i) of this subpart, are administratively stayed for a tank or a container used for the management of hazardous waste generated by organic peroxide manufacturing and its associated laboratory operations when the owner or operator of the unit meets all of the following conditions:

(1) The owner or operator identifies that the tank or container receives hazardous waste generated by an organic peroxide manufacturing process producing more than one functional family of organic peroxides or multiple organic peroxides within one functional family, that one or more of these organic peroxides could potentially undergo self-accelerating thermal decomposition at or below ambient temperatures, and that organic peroxides are the predominant products manufactured by the process. For the purpose of meeting the conditions of this paragraph, ''organic peroxide'' means an organic compound that contains the bivalent -O-O- structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

(2) The owner or operator prepares documentation, in accordance with the requirements of § 265.1090(i) of this subpart, explaining why an undue safety hazard would be created if air emission controls specified in §§ 265.1085 through 265.1088 of this subpart are installed and operated on the tanks and containers used at the facility to manage the hazardous waste generated by the organic peroxide manufacturing process or processes meeting the conditions of paragraph (d)(1) of this section.

(3) The owner or operator notifies the Regional Administrator in writing that hazardous waste generated by an organic peroxide manufacturing process or processes meeting the conditions of paragraph (d)(1) of this section are managed at the facility in tanks or containers meeting the conditions of paragraph (d)(2) of this section. The notification shall state the name and address of the facility, and be signed and dated by an authorized representative of the facility owner or operator.

6. In § 265.1090, paragraph (i) is added to read as follows:

§ 265.1090 Recordkeeping requirements.

* * * * *

(i) For each tank or container not using air emission controls specified in §§ 265.1085 through 265.1088 of this subpart in accordance with the conditions specified in § 265.1080(d) of this subpart, the owner or operator shall record and maintain the following information:

(1) A list of the individual organic peroxide compounds manufactured at

the facility that meet the conditions specified in § 265.1080(d)(1).

(2) A description of how the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section are managed at the facility in tanks and containers. This description shall include the following information:

(i) For the tanks used at the facility to manage this hazardous waste, sufficient information shall be provided to describe for each tank: a facility identification number for the tank; the purpose and placement of this tank in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste managed in the tanks.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to describe: a facility identification number for the container or group of containers; the purpose and placement of this container, or group of containers, in the management train of this hazardous waste; and the procedures used to ultimately dispose of the hazardous waste handled in the containers.

(3) An explanation of why managing the hazardous waste containing the organic peroxide compounds identified in paragraph (i)(1) of this section in the tanks and containers as described in paragraph (i)(2) of this section would create an undue safety hazard if the air emission controls, as required under §§ 265.1085 through 265.1088 of this subpart, are installed and operated on these waste management units. This explanation shall include the following information:

(i) For tanks used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: how use of the required air emission controls on the tanks would affect the tank design features and facility operating procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the tanks; and why installation of safety devices on the required air emission controls, as allowed under § 265.1085(g) of this subpart, will not address those situations in which evacuation of tanks equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

(ii) For containers used at the facility to manage these hazardous wastes, sufficient information shall be provided to explain: how use of the required air emission controls on the containers would affect the container design features and handling procedures currently used to prevent an undue safety hazard during the management of this hazardous waste in the containers; and why installation of safety devices on the required air emission controls, as allowed under § 265.1087(d) of this subpart, will not address those situations in which evacuation of containers equipped with these air emission controls is necessary and consistent with good engineering and safety practices for handling organic peroxides.

[FR Doc. 95–24268 Filed 9–28–95; 8:45 am]

BILLING CODE 6560–50–P

40 CFR Part 300

[FRL–5306–3]

National Oil and Hazardous Substances Contingency Plan; National Priorities List Update

AGENCY: Environmental Protection Agency.

ACTION: Notice of deletion of the Witco Chemical Corporation Superfund Site from the National Priorities List (NPL).

SUMMARY: The Environmental Protection Agency (EPA) Region II announces the deletion of the Witco Chemical Corporation Superfund site in Oakland, New Jersey from the National Priorities List (NPL). The NPL is Appendix B of 40 CFR Part 300, the National Oil and Hazardous Substances Contingency Plan (NCP), which EPA promulgated pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended. EPA and the State of New Jersey have determined that all appropriate Fund-financed responses under CERCLA have been implemented and that no further cleanup by responsible parties is appropriate. Moreover, EPA and the State of New Jersey have determined that remedial actions conducted at the site to date remain protective of public health, welfare, and the environment.

EFFECTIVE DATE: September 29, 1995.

FOR FURTHER INFORMATION CONTACT: Mr. John Osolin, Remedial Project Manager, U.S. Environmental Protection Agency, Region II, 290 Broadway, 19th Floor, New York, New York 10007, (212) 637–4412.

ADDRESSES: Comprehensive information on this site is available at the following addresses:

Oakland Public Library, Municipal Plaza, Oakland, New Jersey 07436, (201) 337–3742, Hrs. M–TH 10:00 AM–9:00 PM, F & SA 10:00 AM–5:00 PM.

Superfund Records Center, U.S. Environmental Protection Agency, Region II, 290 Broadway, 18th Floor, New York, New York 10007, (212) 637–4308, Hrs. M–F 9:00 AM–5:00 PM, (Call for an appointment, reasonable fees may be charged for copying.).

SUPPLEMENTARY INFORMATION: The site to be deleted from the NPL is: Witco Chemical Corporation Site, Oakland, New Jersey.

A Notice of Intent to Delete for this site was published November 18, 1993 (58 FR 60825). The closing date for comments on the Notice of Intent to Delete was December 17, 1993. EPA received no comments and therefore has not prepared a Responsiveness Summary.

The EPA identifies sites which appear to present a significant risk to public health, welfare, or the environment and it maintains the NPL as the list of those sites. Sites on the NPL may be the subject of Hazardous Substance Response Trust Fund (Fund-) financed remedial actions. Section 300.425(e)(3) of the NCP states that Fund-financed actions may be taken at sites deleted from the NPL in the unlikely event that conditions at the site warrant such action. Deletion of a site from the NPL does not affect responsible party liability or impede agency efforts to recover costs associated with response efforts.

List of Subjects in 40 CFR Part 300

Environmental protection, Air pollution control, Chemicals, Hazardous substances, Hazardous waste, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

Dated: September 15, 1995.

William J. Muszynski,

Acting Regional Administrator.

40 CFR part 300 is amended as follows:

PART 300—[AMENDED]

1. The authority citation for part 300 continues to read as follows:

Authority: 33 U.S.C. 1321(c)(2); 42 U.S.C. 9601–9657; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp.; p. 351; E.O. 12580, 52 FR 2923, 3 CFR, 1987 Comp.; p. 193.

Appendix B—[Amended]

2. Table 1 of appendix B to part 300 is amended by removing Witco

certification), as well as provisions of general industry (29 CFR part 1910) standards appropriate to hazards found in these employments. Federal jurisdiction also remains in effect with respect to Federal government employers and employees.

(c) The Assistant Secretary retains his authority under section 11(c) of the Act with regard to complaints alleging discrimination against employees because of the exercise of any right afforded to the employee by the Act. The Assistant Secretary also retains his authority under section 6 of the Act to promulgate, modify or revoke occupational safety and health standards which address the working conditions of all employees. Any Federal standards, including any standards promulgated or modified during the period of the Virgin Islands final approval under section 18(e), are now enforceable by Federal OSHA.

(d) The Assistant Secretary also retains authority to continue to conduct investigations and inspections for the purpose of the evaluation of the Virgin Islands State plan under section 18 (e) and (f) of the Act. The Regional Administrator will closely monitor State performance and corrective action and make prompt recommendation to the Assistant Secretary for either reinstatement of the Virgin Islands final approval status or initiation of plan withdrawal action. Federal enforcement authority will continue to be exercised to the extent necessary to assure occupational safety and health protection to employees in the Virgin Islands until further notice.

[FR Doc. 95–27915 Filed 11–9–95; 8:45 am]

BILLING CODE 4510–26–M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264, 265, and 271

[FRL–5328–4]

RIN 2060–AB94

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of postponed effective date.

SUMMARY: This document postpones the effective date of the final rule on Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers until June 6, 1996.

EFFECTIVE DATE: The final rule will be effective as of June 6, 1996. The EPA specified in the final rule a schedule that established the compliance dates by which different requirements of the final rule must be met. These compliance dates and requirements are explained further in the final rule (59 FR 62896, December 6, 1994) under **SUPPLEMENTARY INFORMATION.** This document changes only the effective date of the standards. The effective date will be June 6, 1996 for all provisions of the standards, including the applicability of 40 CFR part 265 subparts AA, BB, and CC to 90-day accumulation units at hazardous waste generators, the applicability of 40 CFR part 265 subparts AA, BB, and CC to Resource Conservation and Recovery ACT (RCRA) permitted units, and the applicability of the final standards to tanks in which waste stabilization activities are performed. All other compliance dates for the final rule remain as published in the final rule (59 FR 62896.)

ADDRESSES: Docket. The supporting information used for the final rule is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to the final rule are F–91–CESP–FFFFF, F–92–CESA–FFFFF, F–94–CESF–FFFFF, F–94–CE2A–FFFFF, and F–95–CE3A–FFFFF. The docket is available for inspection at the EPA RCRA Docket Office (5305), Room 2616, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, telephone (202) 260–9327.

FOR FURTHER INFORMATION CONTACT: For information about this postponement contact the RCRA Hotline at (800) 424–9346 toll-free, or (703) 920–9810.

SUPPLEMENTARY INFORMATION:

1. Postponement of December 6, 1995 Effective Date

This notice announces the postponement of the effective date for the final Air Emission Standards published under the RCRA. These final standards were published on December 6, 1994 (59 FR 62896) and were originally scheduled to become effective as of June 5, 1995. On May 19, 1995 (60 FR 26828) the EPA postponed the effective date until December 6, 1995 to allow time for the EPA to identify provisions of the final standards that require clarification, and to publish a Federal Register notice to clarify such provisions. The EPA expects to publish that notice in the near future.

Subsequently, on August 14, 1995 the EPA published a Federal Register document entitled, ''Proposed rule; data availability'' (60 FR 41870) and opened RCRA docket F–95–CE3A–FFFFF to accept comments on revisions that the EPA is considering for the final standards. The provisions of the final rule that these revisions would affect are the waste determination procedures, the standards for containers, and the applicability of the final standards to units that operate air emission controls in accordance with certain Clean Air Act standards. In addition, these revisions would reduce the monitoring, record keeping, and reporting requirements for affected tanks, surface impoundments, and containers.

The EPA accepted public comments on the appropriateness of these revisions through October 13, 1995. The EPA is now reviewing the comments received by the docket and will determine whether to revise the final rule to incorporate the described revisions. The incorporation of these revisions would provide certain compliance options for waste determination procedures and for container standards that are not currently available in the published final rule. By January of 1996, the EPA expects to complete its review of the public comments, and publish a Federal Register notice explaining the EPA's decision if and how to amend the rule.

Given that the EPA intends to clarify provisions of the rule and is actively considering amending the rule in ways that would increase compliance flexibility and possibly reduce certain regulatory requirements, the EPA considers it appropriate to delay the December 6, 1995 effective date for six months. This delay will both allow the ongoing administrative review process to be completed successfully, and allow ample time for facilities to make any necessary alterations to their compliance plans before the effective date of the standards.

The EPA has received a request that it stay the rule, from a party that has brought a judicial challenge to the published rule. In taking this action to postpone the rule's effective date, the EPA is not concurring that the criteria for a stay (such as likelihood of irreparable harm or likelihood that these parties will ultimately prevail should the rule be litigated) are met. Rather, as a prudential matter, the EPA believes that a six month delay is appropriate for the reasons explained above.

2. Retention of Final Compliance Date of December 8, 1997

The December 6, 1994 published rule set a final compliance date of December 8, 1997, by which time all required air emission control equipment must be operating (59 FR 62897). The EPA does not believe that postponing the effective date of this rule necessitates any postponement of the December 8, 1997 compliance date. The final compliance date was chosen to allow time for facility modifications that may be involved in the compliance approach of certain facilities. The EPA believes that, for many air emission control applications, the required control devices can be installed and in operation within several months. However, the EPA agrees that under some circumstances, the owner's or operator's approach to complying with the air emission control requirements under the subpart CC standards may involve a major design and construction project which requires a longer time to complete. In recognition of these cases, the EPA decided that it is reasonable to allow up to December 8, 1997 for affected facilities to install and begin operation of air emission controls required by the supbart CC standards. (Hazardous Waste TSDF Background Information Document for Promulgated Organic Air Emission Standards, EPA–453/R–94–076b, page 9–7.)

The final rule requirements that may necessitate a major modification, as described above, for tanks are paragraphs (b) through (d) of 40 CFR parts 264.1084 and 265.1085. These paragraphs specify air emission control equipment that must be operated on tanks receiving affected hazardous waste. Similarly, the requirements that may necessitate such a major modification for surface impoundments are paragraphs (b) through (e) of 40 CFR parts 264.1085 and 265.1086. These paragraphs specify air emission control equipment that must be operated on surface impoundments receiving affected hazardous waste. To comply with these requirements for tanks and surface impoundments, facilities may choose to construct new hazardous waste management units to replace existing units, or may choose to modify existing hazardous waste management units. Examples of facility equipment modifications that could require an extended period of compliance would be replacing a large open surface impoundment with a series of covered tanks, or fitting an existing open tank with a fixed roof vented to a control device. The EPA recognizes that such major modifications or new construction can require several months or more, and therefore allows until December 8, 1997 for facilities to comply with the air emission control requirements of the final subpart CC standards.

In addition, certain States may require that a facility obtain a permit modification prior to performing a major modification such as those described above. The EPA recognizes that such permit modifications can be a lengthy process, and therefore felt it was appropriate to afford an extended compliance period to allow such modifications to be obtained (59 FR 62919). The EPA does not expect that such a lengthy period of implementation would be required in circumstances other than those described above, although such a period is available if necessary.

The final rule provisions that justified a compliance date of December 8, 1997 are not among those that are potentially affected by the revisions currently under the EPA's consideration. Specifically, the EPA is not considering changes to the requirements for covers and air emission controls on tanks and surface impoundments. All affected facilities have been on notice of the final rule air emission control requirements for these units since the final rule publication on December 6, 1994. Therefore, the EPA does not consider it appropriate to postpone the compliance date of December 8, 1997, by which all required air emission control equipment must be operating.

3. Conclusion

The EPA is postponing the effective date of the final rule until June 6, 1996. The final rule text affected by this postponement is amended as follows.

Dated: October 31, 1995.

Mary D. Nichols,

Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, title 40, chapter I, parts 264, 265, and 271 of the Code of Federal Regulations are amended as follows:

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

2. Section 264.1080 is amended by revising paragraphs (b)(1) and (c) to read as follows:

§ 264.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before June 6, 1996, and in which no hazardous waste is added to the unit on or after this date.

* * * * *

(c) For the owner and operator of a facility subject to this subpart and who received a final permit under RCRA section 3005 prior to June 6, 1996, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 40 CFR 124.15 of this chapter or reviewed in accordance with the requirements of 40 CFR 270.50(d) of this chapter. Until such date when the owner and operator receives a final permit incorporating the requirements of this subpart, the owner and operator is subject to the requirements of 40 CFR part 265, subpart CC.

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

4. Section 265.1080 is amended by revising paragraph (b)(1) and paragraph (c) introductory text to read as follows:

§ 265.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before June 6, 1996, and in which no hazardous waste is added to the unit on or after this date.

* * * * *

(c) For the owner and operator of a facility subject to this subpart who has received a final permit under RCRA section 3005 prior to June 6, 1996, the following requirements apply:

* * * * *

5. Section 265.1082 is amended by revising paragraphs (a) introductory text, paragraph (a)(1), (a)(2), (a)(2)(iii), and (a)(2)(iv) to read as follows:

§ 265.1082 Schedule for implementation of air emission standards.

(a) Owners or operators of facilities existing on June 6, 1996, and subject to subparts I, J, and K of this part shall meet the following requirements:

(1) Install and begin operation of all control equipment required by this subpart by June 6, 1995, except as provided for in paragraph (a)(2) of this section.

(2) When control equipment required by this subpart cannot be installed and in operation by June 6, 1996, the owner or operator shall:

* * * * *

(iii) For facilities subject to the recordkeeping requirements of § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than June 6, 1996.

(iv) For facilities not subject to § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility no later than June 6, 1996.

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

6. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A—Requirements for Final Authorization

7. Section 271.1(j) is amended by revising the December 6, 1994 entry in Table 1 to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	FEDERAL REGISTER reference	Effective date
*	* * * * *	*	*
December 6, 1994.	Air Emission Standards for Tanks, Surface Impoundments, and Containers	59 FR 62896–62953	June 6, 1996.

8. Section 271.1(j) is amended by revising the December 6, 1995 entry in Table 2 to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	FEDERAL REGISTER reference
*	* * * * *	*	*
June 6, 1996	Air Emission Standards for Tanks, Surface Impoundments, and Containers	3004(n)	59 FR 62896–62953

[FR Doc. 95–27950 Filed 11–9–95; 8:45 am]
BILLING CODE 6560–50–P

40 CFR Parts 766 and 799

[OPPTS–40028; FRL–4956–3]

Technical Amendments to Test Rules and Consent Orders; Republication

Editorial Note: This document was originally published at 60 FR 50432, September 29, 1995, and is being reprinted in its entirety because of typesetting errors.

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA has approved by letter certain modifications to test standards and schedules for chemical testing programs under section 4 of the Toxic Substances Control Act (TSCA). These modifications, requested by test sponsors, will be incorporated and codified in the respective test regulation or consent order. Because these modifications do not significantly alter the scope of a test or significantly change the schedule for its completion, EPA approved these requests without seeking notice and comment. EPA annually publishes a notice describing all of the modifications granted by letter for the previous year.

EFFECTIVE DATE: This rule is effective on September 29, 1995.

FOR FURTHER INFORMATION CONTACT: Susan B. Hazen, Director, Environmental Assistance Division (7408), Office of Pollution Prevention and Toxics, Rm. E–543B, 401 M St., SW., Washington, DC 20460, (202) 554–1404, TDD (202) 554–0551, Internet: TSCA-Hotline@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA issued a rule published in the Federal Register of September 1, 1989 (54 FR 36311), amending procedures for modifying test standards and schedules for test rules and testing consent orders under section 4 of TSCA. The amended procedures allow EPA to approve requested modifications which do not alter the scope of a test or significantly change the schedule for its completion. These modifications are approved by letter without public comment. The rule also requires immediate placement of these letters in EPA's public files and publication of these modifications in the Federal Register. This document includes modifications approved from January 1, 1994, through December 31, 1994. For a detailed description of the rationale for these modifications, refer

Protection Agency, Research Triangle Park, North Carolina 27711; telephone (919) 541–2452.

SUPPLEMENTARY INFORMATION: Section 112 of the Act requires EPA to promulgate national emission standards for sources of hazardous air pollutants (HAP). On September 1, 1995 (60 FR 45947), the Agency promulgated final standards for the aerospace manufacturing and rework industry. Among other provisions, the rule established a deadline for existing sources to submit an initial notification to the Administrator.

The submittal of an initial notification by owners or operators of existing sources affected by relevant standards is required under § 63.9(b)(2) of the General Provisions to 40 CFR part 63. Section 63.9(b)(2) requires that this initial notification be submitted to the Administrator within 120 days of the effective date of a promulgated NESHAP. In the case of the final Aerospace NESHAP, affected existing facilities would be required to submit an initial notification by December 30, 1995.

However, in paragraph V.H.(2)(a) of the preamble to the proposed aerospace manufacturing and rework NESHAP published in the Federal Register on June 6, 1994 (59 FR 29216), the Agency stated its intent to override the submittal date specified in the General Provisions and to require owners or operators of affected aerospace manufacturing and rework facilities to submit this initial notification ''* * * no later than 12 months before the final compliance date [i.e., by September 1, 1997] * * *.'' One comment was received concerning the submittal of the initial notification (see Docket Number A–92–20, Entry Number IV–D–31). This commenter requested that the initial notification be submitted within the 120 days specified in the General Provisions. While the Agency generally favors early interaction amongst the regulated community, permitting agencies, and the public, especially in instances where the final compliance date is less than three years from promulgation; the Agency was not compelled to alter its position from that found in the preamble to the proposed rule because of the three years allowed for existing sources to comply. Therefore, the final rule should have indicated requirements for the submittal of an initial notification within 2 years of the effective date of the final standard. However, language specifying the September 1, 1997 date for submittal of the initial notification was mistakenly omitted from the final rule published in the Federal Register. In today's document, the Agency has corrected this omission and has included the applicable language.

Dated: February 1, 1996.

Richard D. Wilson,

Acting Assistant Administrator for Air and Radiation.

The following corrections are being made in the regulatory text for: National Emission Standards for Hazardous Air Pollutants for Aerospace Manufacturing and Rework Facilities published in the Federal Register on September 1, 1995 (60 FR 45948):

§ 63.753 [Corrected]

1. Paragraph (a)(1) of § 65.753 on page 45979, column 1, should read as follows:

* * * * *

(a)(1) Except as provided in paragraphs (a)(2) and (a)(3) of this section, each owner or operator subject to this subpart shall fulfill the requirements contained in § 63.9 (a) through (e) and (h) through (j), Notification requirements, and § 63.10 (a), (b), (d) and (f), Recordkeeping and reporting requirements, of the General Provisions, 40 CFR part 63, subpart A, except that the initial notification requirements for new or reconstructed affected sources in § 63.9(b) (3) though (5) shall not apply. In addition to the requirements of § 63.9(h), the notification of compliance status shall include:

(i) Information detailing whether the source has operated within the specified ranges of its designated operating parameters.

(ii) For each coating line, where averaging will be used along with the types of quantities of coatings the facility expects to use in the first year of operation. Averaging scheme shall be approved by the Administrator or delegated State authority and shall be included as part of the facility's title V or part 70 permit.

(2) The initial notification for existing sources, required in § 63.9(b)(2) shall be submitted no later than September 1, 1997. For the purpose of this subpart, a title V or part 70 permit application may be used in lieu of the initial notification required under § 63.9(b)(2), provided the same information is contained in the permit application as required by § 63.9(b)(2), and the State to which the permit application has been submitted has an approved operating permit program under part 70 of this chapter and has received delegation of authority from the EPA. Permit applications shall be submitted by the same due dates as those specified for the initial notifications.

* * * * *

[FR Doc. 96–2923 Filed 2–8–96; 8:45 am]

BILLING CODE 6560–50–M

40 CFR Parts 262, 264, 265, and 270

[IL–64–2–5807; FRL–5407–2]

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; technical amendment.

SUMMARY: Under the authority of the Resource Conservation and Recovery Act (RCRA), as amended, the EPA has published air standards to reduce organic emissions from hazardous waste management activities (59 FR 62896, December 6, 1994). The air standards apply to owners and operators of hazardous waste treatment, storage, and disposal facilities (TSDF) subject to RCRA subtitle C permitting requirements and to certain hazardous waste generators accumulating waste in on-site tanks and containers. This action makes clarifying amendments in the regulatory text of the final standards, corrects typographical and grammatical errors, and clarifies certain language in the preamble to the final rule.

EFFECTIVE DATE: The rule provisions clarified by this action are effective as of June 6, 1996, the effective date of the final rule.

ADDRESSES: This notice is available on the EPA's Clean-up Information Bulletin Board (CLU–IN). To access CLU–IN with a modem of up to 28,800 baud, dial (301) 589–8366. First time users will be asked to input some initial registration information. Next, select ''D'' (download) from the main menu. Input the file name ''RCRACLAR.ZIP'' to download this notice. Follow the on-line instructions to complete the download. More information about the download procedure is located in Bulletin 104; to read this type ''B 104'' from the main menu. For additional help with these instructions, telephone the CLU–IN help line at (301) 589–8368.

Docket. The supporting information used for this rulemaking is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to this rulemaking are F–91–CESP–FFFFF, F–92–CESA–FFFFF, F–94–CESF–FFFFF, F–94–

CE2A–FFFFF, and F–95–CE3A–FFFFF. The RCRA docket is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Hand delivery of items and review of docket materials are made at the Virginia address. The public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA docket office is RCRA Information Center (5305W), U. S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: The RCRA Hotline, toll-free at (800) 424–9346. For further information on the specific provisions to which this clarification refers, contact Ms. Michele Aston, Emission Standards Division (Mail Drop 13), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–2363.

SUPPLEMENTARY INFORMATION:

Background

The EPA is today making clarifying amendments to the final subpart CC standards. Since the publication of the final rule, the EPA has published two Federal Register documents to delay the effective date of the final rule. The first (60 FR 26828, May 19, 1995) revised the effective date of the standards to be December 6, 1995. The second (60 FR 56952, November 13, 1995) subsequently revised the effective date of the standards to be June 6, 1996. The EPA has also issued a stay of the standards specific to units managing wastes produced by certain organic peroxide manufacturing processes (60 FR 50426, September 29, 1995).

On August 14, 1995, the EPA published a Federal Register document entitled, ''Proposed rule; data availability'' (60 FR 41870) and opened RCRA docket F–95–CE3A–FFFFF to accept comments on revisions that the EPA is considering for the final subpart CC standards. The EPA accepted public comments on the appropriateness of these revisions through October 13, 1995 and is now in the process of reviewing and evaluating the comments that were received. The EPA expects to complete its review of these public comments, and publish a Federal Register notice explaining the EPA's decision if and how to amend the rule to reflect the proposed revisions, in early 1996.

Today's action clarifies provisions of the final rule to better convey the EPA's original intent. While today's clarifications may be applicable to certain comments submitted to docket F–95–CE3A–FFFFF, today's action is independent of those proposed revisions and the Federal Register document that EPA intends to publish in early 1996 addressing its evaluation of the proposed revisions. The information presented in this preamble is organized as follows:

1. Applicability.
2. Definitions.
3. Schedule for implementation of air emission standards.
4. Standards: General.
5. Waste determination procedures.
6. Standards: Tanks.
7. Standards: Surface impoundments.
8. Standards: Containers.
9. Closed-Vent Systems and Control Devices.
10. Inspection and Monitoring requirements.
11. Recordkeeping Requirements.
12. Reporting Requirements.
13. Alternative Control Requirements for Tanks.
14. Immediate Effective Date.

1. Applicability

The EPA deferred applicability of the final subpart CC standards to units used solely for on-site treatment or storage of hazardous waste generated in the course of certain remedial activities. Paragraph (b)(5) of § 264.1080 and § 265.1080 specified that this deferral applied to ''remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v) or 3008(h), CERCLA authorities, or similar Federal or State authorities.'' However, page 62897 of the preamble to the final subpart CC standards stated that this deferral applied to ''remedial activities required under RCRA corrective action or CERCLA response authorities (or similar State remediation authorities).'' Consistent with the regulatory language, the EPA intended that this deferral apply to remedial activities under the authority of RCRA corrective action, CERCLA response, similar Federal authorities, or similar State authorities. An example of a similar Federal authority would be the EPA Compliance Monitoring Program (CMP) pursuant to the Toxic Substances Control Act, and a waste management unit that is used solely for on-site storage of hazardous wastes generated from remedial activities required by the CMP thus would qualify for deferral from the applicability of the final subpart CC standards.

The EPA also deferred applicability of the subpart CC standards to hazardous waste management units that are used ''solely'' to treat or store radioactive mixed waste, in paragraph (b)(6) of § 264.1080 and § 265.1080. EPA is clarifying here that the use of the word ''solely'' does not preclude addition of other materials to a unit managing radioactive mixed waste if applicable regulations of the Atomic Energy Act or the Nuclear Waste Policy Act require that material other than radioactive mixed waste be added to the unit. Such additions would not contravene the purpose of EPA's limitation of the scope of the deferral: To prevent radioactive mixed wastes from being used to exempt other hazardous waste from the rule through mixing and to limit the volume of mixed waste that is managed, again by limiting options for exempt mixing. Thus, if any materials other than radioactive mixed waste are added after June 6, 1996 to units used to treat or store mixed waste, the regulatory deferral of the unit would not apply *unless* the addition is pursuant to a regulatory requirement imposed pursuant to the Atomic Energy Act and/or the Nuclear Waste Policy Act.

2. Definitions

The EPA is revising the definition of ''cover'' and adding a definition for the term ''enclosure'' to clarify the EPA's intended distinction between the two technologies, and to clarify the specific requirements for an enclosure. As used in the final subpart CC standards, the EPA considers a cover to be a device that is placed on or over a unit and forms a barrier between the entire waste surface and the space external to the unit. Examples of covers include a fitted lid on a drum and a roof on a tank. In contrast, the EPA considers an enclosure to be a structure that is external to a unit which surrounds the unit and some space external to the unit. An example of an enclosure would be a shed or a building within which a unit is either permanently or temporarily located. The definition for ''cover'' contained in the December 6, 1994 final standards listed an enclosure surrounding a container as an example of a cover, which has led to several inquiries from the public as to whether a tank located inside a building equipped with a ventilation system routed to a control device would meet the requirements for tank covers specified in § 264.1084(d) and § 265.1085(d). It is not the EPA's intent to allow an enclosure or building surrounding a tank to meet the control requirements for the final subpart CC standards; see Hazardous Waste TSDF Background Information for Promulgated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers, EPA–

453/R–94–076b (''BID''), page 6–61. To make explicit what is already implicit in the final rule, EPA is clarifying that an enclosure surrounding a tank is not equivalent to a cover on a tank. Thus, the EPA is removing the example of an enclosure from the definition of ''cover'' and is creating a separate definition for the term ''enclosure.''

The final subpart CC standards require enclosures surrounding open fixation containers to meet airflow and pressure drop requirements, as specified in paragraph (b)(2)(ii) of § 264.1086 and § 265.1087. The EPA has received a number of requests from the public to more clearly specify these requirements. In response, the EPA is specifically defining the term ''enclosure'' such that an enclosure be designed and operated in accordance with the requirements of ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' contained in § 52.741, appendix B. The requirements of this procedure will provide facilities with a more clear definition of the EPA's intent for the design and operation of enclosures.

The EPA is also amending the term ''waste stabilization'' to specifically exclude the process of adding non-reactive absorbent material to the surface of a waste. The EPA recognizes that to meet certain criteria under the Land Disposal Restrictions, or to prevent the introduction of liquids into certain combustion devices, owners or operators apply absorbent material to the surface of wastes just prior to disposal. In such procedures, the container is opened, absorbent material is placed on the surface of the waste to absorb a relatively small amount of liquid, and the container is closed. No mixing or agitation is involved in this process. The EPA's intended definition of waste stabilization for the final subpart CC air rules does not include processes that do not include mixing or agitation, and do not involve curing (BID, p. 6–57). The EPA is amending the definition of ''waste stabilization'' to clarify this intent.

3. Schedule for implementation of air emission standards

The December 6, 1994 published rule establishes additional air standards for TSDF owners and operators subject to 40 CFR part 264 or 40 CFR part 265. All requirements enacted under this final action are effective as of June 6, 1996. This includes the application of the requirements of 40 CFR part 265 subparts AA, BB, and CC to 90-day accumulation units at hazardous waste generators, and the application of 40 CFR part 265 subparts AA, BB, and CC to facilities with final RCRA permits.

The final rule provides that when the required air emission control equipment cannot be operational at an existing hazardous waste generator or TSDF by June 6, 1996, an implementation schedule for installation of the equipment must be developed and placed in the facility operating records no later than June 6, 1996. In such cases, § 265.1082(a)(2)(i) states that the facility owner or operator must have all air emission controls required by the final rule in operation no later than December 8, 1997.

The EPA also recognizes that certain affected facilities may require time beyond June 6, 1996 to implement other provisions of the final standards, such as developing a facility program to perform the specified leak detection tests on tank covers. Also, generator and TSDF facilities to which the requirements of subparts AA and BB are newly applicable on the June 6, 1996 effective date may need additional time to come into compliance with all provisions of those subparts. The EPA expects such instances to be rare, but in the event a facility cannot implement any technical requirement of subparts AA, BB, or CC, it is the EPA's intent that the owner or operator document the necessity for a delay in the facility operating record. To be in compliance with the rule, the necessary documentation must be in place by the June 6, 1996 effective date. To be in compliance with the subpart CC standards, affected facilities must have all required air emission controls installed and operating no later than December 8, 1997. However, facilities newly subject to subparts AA and BB must be in compliance with all the requirements of those subparts no later than 30 months after the effective date that the facility becomes subject to those subparts. Paragraph (a)(2) in § 264.1033 and § 265.1033 is amended to clarify this intent.

In addition, the EPA is clarifying that an affected unit which the owner or operator intends to replace or remove may also be in compliance through the use of an implementation plan. The EPA recognizes that certain facilities may choose to comply with the subpart CC air rules by replacing an existing hazardous waste management unit, or by modifying their facility process such that a given waste management unit is no longer necessary. The EPA also realizes that facilities could require time beyond June 6, 1996 to complete such modifications, during which time it may be necessary for the facility to continue adding hazardous waste to the affected unit. The EPA had therefore intended to allow the owner or operator to be in compliance with the subpart CC standards provided that sufficient documentation is entered into the facility operating record by the June 6, 1996 effective date. The facility operating record must contain sufficient information to document the necessity to continue adding hazardous waste to the unit after June 6, 1996, and document the owner or operator's schedule and plan to cease adding hazardous waste to the affected unit as soon as is feasible, but no later than December 8, 1997 (BID p. 9–6).

Paragraphs (b)(3) and (b)(4) in § 264.1080 and § 265.1080 specify that the subpart CC standards do not apply to tanks or surface impoundments for which the owner or operator has begun implementing or has completed closure pursuant to an approved closure plan, and into which the owner or operator has stopped adding hazardous waste. However, if a closure plan has not been approved for an affected unit, the final subpart CC standards are applicable to that unit. In such a case, the subpart CC standards require that on the June 6, 1996 effective date, if the affected unit is not equipped with the appropriate air emission controls, no hazardous waste may be added to that unit. In this situation, it is the EPA's intent that the owner or operator would be in compliance with the subpart CC standards provided that sufficient documentation is entered into the facility operating record by the June 6, 1996 effective date. This is consistent with the situation described in the previous paragraph where the removal of an affected unit cannot be accomplished before the June 6, 1996 effective date. As with the situation described above, the facility operating record must contain sufficient information to document the inability of the owner or operator to cease adding hazardous waste to the unit prior to June 6, 1996. The facility operating record must also include the owner or operator's schedule to obtain an approved closure plan, or to cease adding hazardous waste to that unit, no later than December 8, 1997.

The December 6, 1994 published rule allowed an extended effective date and compliance date for tanks in which stabilization operations are performed, to allow interested parties time to submit data to the EPA and to allow EPA time to review that data (59 FR at 62897). The effective date for such tanks was originally December 6, 1995. Since the publication of that final rule, the effective date of the final standards for all rule provisions has been extended

until June 6, 1996 (60 FR 56952). Therefore, the EPA no longer considers it necessary to provide a separate compliance schedule for tanks in which stabilization operations are performed, and the effective date for such tanks will be the June 6, 1996 effective date of the final rule.

4. Standards: General

The owner or operator must install and operate the specified air emission controls on every affected tank, surface impoundment, and container used in the waste management sequence from the point of waste origination through the point where the organics in the waste are removed or destroyed by a process in accordance with the requirements of the rule. The final rule provides seven options by which an owner or operator may demonstrate that the required treatment or destruction of organics has been accomplished, as specified in § 265.1083(c)(2) (i) through (vii). Depending on the nature of the affected hazardous waste, the process through which the waste has been managed, or the treatment applied to the waste, one or more of these seven demonstration options may not be appropriate for a given waste stream. In recognition of this, the EPA chose to allow seven different options to demonstrate that effective treatment has been accomplished; the EPA recognizes that not all of these seven options will be practical for demonstrations of all waste treatment scenarios. However, the EPA believes that the variety of waste treatment demonstrations allowed in the final subpart CC rules does offer at least one demonstration alternative for most, if not all, reasonable waste treatment scenarios.

Paragraph (c)(2)(iii) of §§ 264.1082 and 265.1083 is one of the seven options to demonstrate that waste has been treated to effectively reduce the organics in accordance with the requirements of the final subpart CC standards. In the December 6, 1994 published rule, this option required that the ''actual organic mass removal rate (MR) for the process is greater than the required organic mass removal rate (RMR) for the process.'' The EPA had intended this provision to specify that the MR for the process must be greater than or equal to the RMR. The EPA is amending this provision to clarify that intent.

The seven options in § 265.1083(c)(2) refer to a waste treatment process that accomplishes specified organic destruction or removal. As the term ''process'' is used in these requirements, the EPA refers to either a single waste treatment unit, or a series of waste treatment units. If a facility uses a series of waste treatment units, the applicable exemption from controls applies to units downstream of the point where the necessary removal or destruction occurs. Thus, points downstream of the unit which accomplishes the 95th percentile reduction would not be required to install and operate air emission controls.

Similarly, the requirement for covers on tanks and surface impoundments do not apply to tanks or surface impoundments in which biological degradation of the organics in the hazardous waste treated in the unit is demonstrated to achieve specific performance levels. Either of the following sets of conditions, as described in paragraph (c)(2)(iv) of § 264.1082 and § 265.1083, must be demonstrated to qualify for this exemption: (1) The organic reduction efficiency for the process is equal to or greater than 95 percent, and the organic biodegradation efficiency for the process is equal to or greater than 95 percent; or (2) the total actual organic mass biodegradation rate for all hazardous waste treated by the process is equal to or greater than the required organic mass removal rate (59 FR at 62915). A biological treatment unit that is operated within a series of units would not be required to be equipped with a cover provided that series of units met one of the treatment demonstration options in § 265.1083(c)(2), and the biological treatment unit occurred in the series at the point where the necessary treatment was achieved. In the case of a treatment series that achieved a 95 percent reduction in organics by weight as demonstrated by the requirements of § 265.1083(c)(2)(ii), the biological treatment unit could operate without a cover provided that it was the unit achieving the 95th percent control for the affected waste streams. However, if the placement of the biological treatment unit in the treatment series was prior to the achievement of the 95th percent organic reduction, the biological treatment unit must operate with a cover and air emission controls.

Paragraph (d) in §§ 264.1082 and 265.1083 of the final rule indicated that certain materials that are not hazardous wastes must be controlled in accordance with the subpart CC standards. These final standards are only applicable to RCRA hazardous waste. The EPA is amending §§ 264.1082(d) and 265.1083(d) to clarify that non-hazardous wastes are not subject to the subpart CC standards. (This means, incidentally, that wastes that become exempt from RCRA subtitle C by virtue of an exemption such as the Bevill amendments (codified at 261.4(b)(7)) or the domestic sewage exclusion (codified at 261.4(a)(1)) would not be subject to the subpart CC rules.) In making this clarification, the EPA also notes that it is not addressing here (or in any way reopening) the issue of the types of treatment standards under the Land Disposal Restriction program to which hazardous waste treatment residues could be subject before land disposal. Such treatment standards could apply to spent treatment residues that are not themselves identified or listed as a hazardous waste. See 58 FR at 29866–868 and 29871–72 (May 24, 1993) and *Chemical Waste Management* v. *EPA,* 976 F.2d 2, 16–18 (D.C. Cir. 1992), cert. denied 113 S. Ct. 1961 (1993). This same caveat applies with respect to the spent activated carbon residue discussed at section 9 below.

5. Waste Determination Procedures

Under the final subpart CC standards, a TSDF owner or operator is not required to determine the volatile organic concentration of the waste if it is placed in a tank, surface impoundment, or container using the required air emission controls. However, an owner or operator must perform a determination of the average volatile organic (VO) concentration for each hazardous waste placed in a waste management unit exempted from using air emission controls based on the VO concentration of the waste at its point of waste origination. The EPA is amending paragraphs (a)(1) and (b)(1) of § 264.1083 to clarify this requirement.

The determination of the volatile organic concentration of hazardous waste under the final subpart CC standards is based on the organic composition of the waste at the ''point of waste origination.'' The ''point of waste origination'' is defined in § 265.1081 of the final rule with respect to the point where the TSDF owner or operator first has possession of a hazardous waste. This definition specifies that when the TSDF owner or operator is the generator of the hazardous waste, the ''point of waste origination'' means the point where a solid waste produced by a system, process, or waste management unit is determined to be a hazardous waste as defined in 40 CFR part 261. In such a case, the owner or operator may sample the hazardous waste at its point of origination, or may sample the waste at a point downstream from the point of origination, provided the downstream sampling point provides an accurate representation of the waste volatile organic concentration as it was at the point of waste origination. Simply put, an owner or operator may sample

downstream of the point of origination provided the waste has not been altered, mixed with other materials, or allowed to release any volatile organic components prior to sampling. When neither the TSDF owner or operator is the generator of the hazardous waste, the ''point of waste origination'' means the point where the owner or operator accepts delivery or takes possession of the hazardous waste. The EPA considers this to be the point when and where the TSDF owner or operator accepts the waste manifest document for the hazardous waste.

The preamble to the final subpart CC rule incorrectly stated that to calculate the average of a waste stream using direct measurement, ''a sufficient number of samples, but no less than four, must be collected to represent the complete range of organic compositions and organic quantities that occur in the hazardous waste stream during the entire averaging period'' (59 FR at 62916). The intended rule requirement to take a minimum number of four waste samples is for the performance of one single waste determination. The requirement for four individual samples is intended to compensate for both variations in the methodology and variations within a waste stream that may be due to non-homogeneous waste mixtures. It is not acceptable to take four or more individual samples of a waste stream, mix the samples, then perform a method 25D analysis on the mixture. The requirements of § 265.1084(a)(5)(iv) specify the procedure by which the four or more samples be analyzed by method 25D individually, and the results mathematically averaged to produce one waste determination result. This process accounts for test method variability as well as variability in the waste stream and the waste samples.

The EPA recognizes that not all hazardous waste regulated by the subpart CC standards is liquid or aqueous. Therefore, § 4.1.4 of method 25D (40 CFR part 60, appendix A) includes a sampling technique for solid materials. For wastes that are solid or semi-solid, a representative sample is obtained by placing a 10 gram sample of the waste material into a vial containing the specified 30 mL of polyethylene glycol. Once the sample is obtained, the method 25D analysis is performed as it would be on any other waste sample.

To calculate an average volatile organic concentration for a waste stream that has variations in the organic concentration, the owner or operator must perform the number of waste determinations that are necessary to adequately demonstrate that the waste stream volatile organic concentration meets the applicable criteria. An owner or operator may choose to perform a waste determination at a point where they know the waste stream is at its maximum volatile organic concentration for the averaging period. If the resulting average of the four required Method 25D sample runs yields a volatile organic concentration below 100 parts per million by weight (ppmw), the owner or operator would not need to perform additional waste determinations for that averaging period. However, if the owner or operator was not able to perform a waste determination at the point of the waste stream's maximum volatile organic concentration, they could be required to perform additional waste determinations during the averaging period to sufficiently calculate a mass-weighted average volatile organic concentration. The final subpart CC standards specify that the facility owner or operator enter into the facility record a test plan that demonstrates how they will perform a representative volatile organic concentration determination.

The final subpart CC rules require that a waste determination be performed prior to the first time a hazardous waste is placed in an affected unit on or after June 6, 1996. Section 265.1084(a)(2) (i) and (ii) specify the process to determine the average VO concentration for waste streams generated as part of a continuous process or generated as part of a batch process that is performed repeatedly but not necessarily continuously. The EPA is amending § 265.1084(a)(2) to clarify that for waste generated as part of a batch process that is not performed repeatedly, the owner or operator shall perform a waste determination of the VO concentration of the waste in the batch. The EPA is amending § 265.1084(b)(2) to clarify the similar waste determination procedures for treated hazardous waste.

The procedures in paragraphs (a)(5), (a)(6) and (b)(4) of § 265.1084 for determining the average VO concentration of a hazardous waste require that the owner or operator have sufficient knowledge of any variations in the volatile organic concentration of their affected waste streams throughout the averaging period. An owner or operator who does not have sufficient knowledge of variations in the VO concentration of their waste stream prior to June 6, 1996, may not be eligible to determine compliance with the final rule using the average VO concentration for their affected waste streams. The option to use an average volatile organic waste concentration requires sufficient knowledge of the waste stream, and if that knowledge is not available, the option is not allowed. In such a case, the owner or operator would be required to install and operate air emission controls on each affected unit receiving hazardous waste on or after June 6, 1996 (as required by paragraph (b) of § 264.1082 and § 265.1083), or to determine that at no time waste with a VO concentration greater than or equal to 100 ppmw is placed in a unit not equipped with the required air emission controls (as required by paragraph (c) of § 264.1082 and § 265.1083). In essence, each and every portion of the hazardous waste entering the unit would be considered to be a discrete quantity that is not generated as part of a batch process; therefore, the average VO concentration of each of these discrete quantities of waste would be the same as its measured VO concentration (as described in § 265.1084(a)(2)(iii) and § 265.1084(b)(2)(iii), as amended by today's action).

In § 265.1084(a)(5)(v)(C) the equation to determine the average VO concentration of the hazardous waste at the point of waste origination was printed with an incorrect symbol representing the average VO concentration of the hazardous waste at the point of waste origination. The EPA is revising that equation to specify the correct symbol.

Section 265.1084(a)(6)(iii) of the final subpart CC standards allows an owner or operator to determine the volatile organic concentration of a hazardous waste using knowledge that is based on information supplied by the generator of the waste. The generator-prepared information can be included in manifests, shipping papers, or waste certification notices accompanying the waste shipment, as agreed upon between the waste generator and the TSDF owner or operator. The subpart CC final rules do not impose requirements for a generator to provide such documentation to a TSDF. Rather, where such information does exist, the TSDF owner or operator has the option to use that information to perform the volatile organic waste determination or the volatile organic vapor pressure determination upon accepting delivery or taking possession of the hazardous waste. The EPA is amending paragraph (b)(8) of § 264.13 and § 265.13 to clarify this intent. The validity of any information used to comply with these final standards is the responsibility of the owner or operator who has custody of the waste. Therefore, a TSDF owner or operator should rely on waste information only if it is provided by a source in whose accuracy they have confidence.

The December 6, 1994 published rule incorrectly referenced the requirements by which waste streams entering a process must be measured, at § 265.1084(b)(6)(iii)(B) and in the nomenclature for C_{Bj} at § 265.1084(b)(6)(iv). The EPA is amending these provisions to reference the requirements contained in paragraph (a)(5)(iv). The EPA is also amending the nomenclature for Q_{Aj} in § 265.1084(b)(6)(iv) to clarify that it represents the mass quantity of waste exiting the process.

To determine the maximum organic vapor pressure of a hazardous waste in a tank using Method 25E, an owner or operator shall collect a minimum of three waste samples. It was the intent of the EPA to defer to the Clean Air Act General Provisions contained in § 60.8(f) to specify the number of samples required for a Method 25E analysis. However, the subpart CC standards are not subject to § 60.8(f); therefore, this information was not referenced for the final subpart CC standards. The EPA is amending the requirements of paragraph 265.1084(c) to require that, unless otherwise specified in the method being used, a minimum of three samples shall be taken when using any of the methods listed in § 265.1084(c)(3)(ii). To perform a Method 25E analysis, each of these samples shall be analyzed separately, and the result of the analysis mathematically averaged. The requirements of Method 25E specify the procedure to analyze the samples and mathematically average the analytical results.

6. Standards: Tanks

In the final subpart CC tank standards, paragraph (b)(4) of § 264.1084 and § 265.1085 allows the use of a pressure tank to manage affected hazardous waste. The EPA did not intend to specify operating conditions or a minimum internal pressure that must be met to comply with the option. For the purpose of complying with this provision of the subpart CC standards, the EPA is clarifying that a pressure tank must be designed and operated such that the internal pressure is above atmospheric pressure and the tank operates as a closed system, with no detectable emissions occurring during routine operations including filling and emptying (BID p. 6–51). Therefore, the tank must be designed and operated to withstand the pressure of having the vapor space of the waste compressed until the tank is filled to design capacity. The EPA is amending the tank standards to clarify this requirement.

The EPA intended that the final subpart CC standards allow tanks to operate with a fixed-roof type cover without any additional air emission controls provided certain conditions were met (59 FR at 62917). As published in the December 6, 1994 final standards, paragraph (c) of § 264.1084 and § 265.1085 did not correctly convey the EPA's intent for this provision. The EPA is revising these paragraphs of the tank standards to clarify that for the purposes of compliance with the subpart CC standards, tanks meeting the specified waste management requirements can operate fixed-roof type covers without additional air emission controls.

One of the conditions that must be met for this provision is that no turbulent agitation may occur on the surface of the waste, as described in paragraph (c)(1) of § 264.1084 and § 265.1085. Such turbulence on the surface of a waste increases emission of organics from the waste to the air. This cover-only option was provided for tanks that are used for waste storage, and in which no waste treatment is occurring. The cover-only option of paragraph (c)(1) does not provide effective emission control for waste that is managed such that there is visible turbulent flow on the surface of the waste. The EPA considers that the requirements of paragraph (c)(1) are consistent with the provisions of the New Source Performance Standard for volatile organic liquid storage vessels under 40 CFR part 60, subpart Kb, after which the technical requirements for fixed-roof covers were modelled. The EPA does not intend to specify a test to measure turbulent flow, or to otherwise narrowly define the conditions that meet this paragraph. The EPA does wish to clarify that for a tank through which the waste surface is not viewable, an owner or operator may elect to use engineering calculations and modelling to determine if the surface of the hazardous waste managed in a tank has turbulent flow that would be visible.

The EPA recognizes that, for certain hazardous wastes managed in tanks, it may be necessary to continuously mix, stir or circulate the waste inside the tank during normal storage operations. For instance, the properties of the waste may be such that it is necessary to continuously stir the waste to prevent phase separation or to prevent the waste from solidifying. Paragraph (c)(1) of § 264.1084 and § 265.1085 prohibits such activities if they result in splashing, frothing, or visible turbulent flow on the surface of the waste. However, an owner or operator may perform continuous or frequent mixing operations in a cover-only tank, provided the operation does not cause visible turbulent flow on the surface of the waste. To be allowed under the requirements of paragraph (c)(1), such a mixing operation must be designed and performed to operate without causing visible turbulent flow on the waste surface. To design and operate a mixing system to ensure that visible turbulent flow does not occur, the owner or operator must consider all relevant factors, including mixing speed, position of the mixing apparatus, and waste level in the tank. If the mixing apparatus is positioned and designed such that visible turbulent flow occurs when the waste is below a certain level in the tank, the mixing operation must be ceased when the waste is not above that level in the tank. During such a period, visible turbulent flow on the surface of the waste would be allowed if it resulted from an intermittent required operation, such as loading waste into the tank.

The EPA recognizes that owners or operators may need to mix, stir or circulate the waste that is stored in tanks to occasionally perform certain necessary operations, and these actions may result in splashing, frothing, or visible turbulent flow. Examples of this include mixing waste contents at sample times to facilitate obtaining a representative waste sample, and causing visible turbulent flow on the waste surface during transfer of hazardous waste into or from the tank. In such a situation, there would be a mixing apparatus available to be used in the tank, but this apparatus would not be in use during normal waste storage operations. The EPA considers some degree of splashing, frothing, or visible turbulent flow to be allowable, provided that the activity causing this condition is waste sampling, waste transfer, or a similar necessary operation that is performed infrequently. The requirements of § 264.1084(c)(1) and § 265.1085(c)(1) specify that the disallowed waste management activities must not be part of the normal process operations for that tank. The EPA intends that provision to prohibit continual or usual performance of such procedures, but allow the procedure when necessary to perform intermittent operations, such as waste sampling or waste transfer (BID p. 6–54). Therefore, a tank for which the waste transfer operation is continuous or occurs frequently and causes visible turbulent flow, should be equipped with organic emission controls in accordance with paragraph (b) of § 264.1084 and § 265.1085. Similarly, the EPA intends that this clarification also apply to hazardous waste management in surface impoundments complying with the

floating membrane cover provisions of § 264.1085(c) and § 265.1086(c).

An additional condition that must be met for the fixed-roof cover control option requires that the waste managed in the unit have a volatile organic vapor pressure below certain limits based on the capacity of the tank, as described in paragraph (c)(4) of § 264.1084 and § 265.1085. The waste managed in the tank must meet the appropriate volatile organic vapor pressure limits at the highest vapor pressure that will occur under normal operating conditions. Unlike the waste volatile organic concentration determination which must represent individual waste streams prior to mixing or dilution, the waste organic vapor pressure determination must indicate the vapor pressure of the actual mixture of waste that is managed in the tank. The waste organic vapor pressure to be compared to the limits specified in § 264.1084(c)(4) and § 265.1085(c)(4) of the final rule is the highest pressure present among any temperatures at which the waste is present in the tank.

The EPA had intended the final subpart CC standards to allow fixed-roof covers on tanks to be equipped with one or more pressure relieving devices that vent directly to the atmosphere to allow for the relief of pressure or vacuum caused by normal operations (BID p. 6–47). For the purposes of this provision the EPA requires that the pressure relieving device be a normally closed device that opens only when a pressure or vacuum is created in the unit. The EPA does not intend to specify parameters for the operation or setting of such pressure relieving device, but rather has established a performance standard that the facility owner or operator design and operate the conservation vents so that emissions to the atmosphere are minimized, yet tank integrity is protected, in accordance with sound engineering design specifications and practices appropriate for the affected tank. This provision is clarified in the amendments to paragraph (c) of § 264.1084 and § 265.1085. This allowance for pressure relieving devices differs from the final rule allowance for safety devices described in paragraph (g) of § 264.1084 and § 265.1085, which are only allowed to vent to the atmosphere during unplanned events. Units not eligible to be equipped with pressure relieving devices that open during normal operations include pressure tanks, and tanks equipped with floating roofs.

7. Standards: Surface Impoundments

In the December 6, 1994 published rule, paragraph (d) of § 264.1085 and § 265.1086 incorrectly referenced paragraph (b)(1), which does not exist. The EPA is amending paragraph (d) of these sections to reference paragraph (b), as intended.

8. Standards: Containers

In § 264.1086 and § 265.1087, paragraph (b)(1) lists three options to demonstrate compliance for containers used to manage hazardous waste subject to subpart CC. The first option, in paragraph (b)(1)(i), specifies that the container operates with no detectable emissions as tested by Method 21 in 40 CFR part 60 appendix A. This option is appropriate for any container subject to subpart CC, including the types of containers specified in the second and third options. The second option, in paragraph (b)(1)(ii), is a container with a capacity of 0.46 cubic meters, which complies with all Department of Transportation regulations for packaging hazardous waste for transport under 40 CFR part 178. The third option, in paragraph (b)(2)(iii), is a tank truck or rail car that has been demonstrated within the previous 12 months to be organic vapor tight using the pressure test specified in Method 27 of 40 CFR part 60 appendix A. The EPA has received several questions regarding the applicability of Method 27 for use on vehicular containers that are not equipped with a vapor recovery system. This method is a pressure test procedure originally developed by the EPA for determining the vapor-leak tightness of a gasoline tank truck equipped with a vapor recovery system. The EPA also considers Method 27 appropriate on tank trucks and rail cars that are used to manage hazardous waste, regardless of whether the tank truck or rail car is equipped with a vapor recovery system. As described above, an owner or operator of a tank truck or rail car has the option to comply with paragraph (b)(1)(i), and demonstrate no detectable emissions by Method 21, as does the owner or operator of any container equal to or less than 0.46 m^3 in capacity.

Paragraph (b)(2)(ii) of § 264.1086 and 265.1087 of the December 6, 1994 final standards describes the criteria for an enclosure in which stabilization operations performed in open containers must be located. In describing the requirements for the enclosure, the EPA had intended to paraphrase the specifications of Procedure T in Appendix B to § 52.741, titled ''Criteria for and Verification of a Permanent or Temporary Total Enclosure.'' To better clarify the intended requirements for container enclosures, the EPA is revising the enclosure requirements of paragraph (b)(2)(ii) to specifically reference Procedure T in § 52.741, Appendix B.

The waste transfer requirements specified in paragraph (b)(3) of § 264.1086 and § 265.1087 of the final rule for containers are intended to reduce exposure of hazardous waste to the atmosphere. Paragraph (b)(3)(i) specifically describes submerged-fill techniques to be used; however, the EPA does not intend that submerged-fill be performed in situations where the process of submerged-fill increases waste exposure to the atmosphere, or worker exposure to hazardous wastes. Certain splash loading operations are performed through a fitted opening in the top of a container, and the transfer line is subsequently purged with nitrogen gas to clean the interior of the line before it is removed from the container opening. This transfer practice could result in less waste exposure than a submerged-fill practice performed for the same waste and container. Another container loading practice is vapor balancing, in which the vapors displaced by transferring waste into a container are routed to the unit from which the waste was transferred. Thus, the EPA is adding clarifying language to the container transfer requirements of paragraph (b)(3) in § 264.1086 and § 265.1087 to direct owners or operators to transfer waste using the procedure that will minimize exposure of waste to the atmosphere.

The submerged filling procedure described in the final subpart CC standards is one procedure that may be appropriate for waste transfer into containers, but the EPA is amending these provisions to direct owners or operators to employ the container filling practice most appropriate for their facility operation.

The EPA originally intended the subpart CC final rules to allow containers to vent emissions directly to the atmosphere during filling operations. The December 6, 1994 final rules only allowed for venting through the opening through which waste was transferred. The EPA intended to allow venting during waste transfer operations either through the opening through which the waste is transferred, or through a second opening that would serve as a vent. In addition to the amendment to paragraph (b)(3) described above, the EPA is amending paragraph (c) of § 264.1086 and § 265.1087 to clarify this venting allowance.

9. Closed-Vent Systems and Control Devices

The final subpart CC standards added requirements for the management of

spent carbon removed from a carbon adsorption system used to comply with the subpart AA, BB, and CC standards. The EPA is clarifying that the carbon management requirements are only applicable to carbon that is hazardous waste. Spent carbon is hazardous if it exhibits a characteristic of hazardous waste or if it is listed. Spent carbon deriving from the treatment of listed hazardous waste is considered to be a type of listed waste by virtue of the derived from rule found at § 261.3(c)(2). See also 56 FR at 7200 (February 21, 1991).

The EPA is amending the spent carbon management requirements of §§ 264.1033(m) and 265.1033(l), and paragraph (c)(3)(ii) of § 264.1087 and § 265.1088 to clarify the intent described today. The EPA is also revising §§ 264.1033(m) and 265.1033(l) to allow management of affected spent carbon to be conducted in certain interim status units in addition to the permitted units specified in the December 6, 1994 published rule.

10. Inspection and Monitoring Requirements

As published in the December 6, 1994 final rule, §§ 264.1033(k)(2) and 265.1033(j)(2) allowed that after the required initial leak detection monitoring, an owner or operator is not required to conduct annual monitoring on those closed-vent system components which continuously operate in vacuum service. The EPA had intended that this allowance apply to system components continuously operating under negative pressure, because such systems would not release constituents to the atmosphere even if there were a rupture or other loss of integrity to the component (BID p. 6–100). However, the EPA specified the term ''in vacuum service,'' which requires that a system operate at an internal pressure at least 5 kPa below ambient pressure, under the assumption that systems operating under negative pressure would meet this requirement. The use of the term ''in vacuum service'' has prompted several questions from the public asking EPA to clarify whether systems operated under negative pressure, but not necessarily in vacuum service, must be monitored annually after the initial leak detection monitoring. The EPA had intended to not require annual monitoring of closed-vent system components which operate under pressure such that all emissions are routed to a control device even if a leak or hole exists in the component. A component that continuously operates under negative pressure would satisfy this intent, even if the component does not necessarily operate in vacuum service. Therefore, the EPA is amending §§ 264.1033(k)(2) and 265.1033(j)(2) to specify that, after the initial leak detection monitoring, an owner or operator is not required to monitor system components which continuously operate under negative pressure.

As published in the December 6, 1994 standards, the reference in paragraph (d) of § 264.1088 and § 265.1089 incorrectly specified that certain control devices used to comply with the subpart CC standards must be inspected and monitored in accordance with the procedures specified in § 264.1033(f). The EPA had intended that this reference should be to § 264.1033(f)(2). The EPA is amending paragraph (d) in § 264.1088 and § 265.1089 to correct this reference and to clarify the frequency of monitoring and the requirement for corrective measures.

11. Recordkeeping Requirements

The EPA is amending § 264.1089(a)(1) and § 265.1090(a)(1) such that these paragraphs correctly reference paragraph 265.1091(a) of the alternative tank control requirements. The EPA is also amending § 264.1089(e) and § 265.1090(e) such that these paragraphs correctly specify recordkeeping requirements for a hazardous waste incinerator and boiler or industrial furnace used to comply with the treatment demonstration options in § 264.1082 and § 265.1083. These amendments clarify references that were incorrectly printed in the December 6, 1994 published standards (59 FR 62896).

12. Reporting Requirements

The EPA is amending § 264.1090 (c) and (d) to clarify what noncompliance occurrences for control device operations a facility owner or operator must report to their Regional Administrator.

13. Alternative Control Requirements for Tanks

Paragraph 265.1091(a)(1)(i) of the final subpart CC standards specifies filling requirements for a tank equipped with an internal floating roof. The requirement is that when the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible. The intent of this requirement is to minimize the time during which a vapor space exists between the floating roof and the stored waste. EPA recognizes that facility owners or operators may not have full control over the amount and handling of waste transferred into their tanks, and this may lead to periods when the filling of a tank may not be continuous. Therefore, the EPA is clarifying this requirement to state that the process of filling shall be as continuous as possible, based on the amount of waste and the nature of the waste handling operation.

14. Immediate Effective Date

The EPA has determined to make today's action effective immediately. The EPA believes that the corrections being made in this document are either interpretations of existing regulations which do not require prior notice and opportunity for comment, or are technical corrections of obvious errors in the published rule (for example corrections of regulatory language that is inconsistent with the preamble, BID, or with otherwise clearly indicated EPA intent) for which comment is unnecessary (within the meaning of 5 USC 553(b)(3)(B)). In addition, the EPA notes that many of these clarifications result from the public comment obtained at various public meetings regarding the subpart CC standards that were held during the summer of 1995. Thus, the EPA has provided for a measure of opportunity to comment.

Docket. Five RCRA dockets contain information pertaining to today's rulemaking: (1) RCRA docket number F–91–CESP–FFFFF, which contains copies of all BID references and other information related to the development of the rule up through proposal; (2) RCRA docket number F–92–CESA–FFFFF, which contains copies of the supplemental data made available for public comment prior to promulgation; (3) RCRA docket number F–94–CESF–FFFFF, which contains copies of all BID references and other information related to development of the final rule following proposal; (4) RCRA docket number F–94–CE2A–FFFFF, which contains information pertaining to waste stabilization operations performed in tanks; and (5) RCRA docket number F–95–CE3A–FFFFF, which contains information about potential final rule revisions made available for public comment. The public may review all materials in these dockets at the EPA RCRA Docket Office.

The EPA RCRA Docket Office is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Hand delivery of items and review of docket materials are made at the Virginia address. The public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA Docket Office is RCRA

Information Center (5305W), 401 M Street SW., Washington, DC 20460. The Docket Office is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays.

Legal Authority

These regulations are amended under the authority of sections 2002, 3001–3007, 3010, and 7004 of the Solid Waste Disposal Act of 1970, as amended by RCRA, as amended (42 U.S.C. 6921–6927, 6930, and 6974).

List of Subjects

40 CFR Part 262

Environmental protection, Accumulation time, Air pollution control, Container, Tank.

40 CFR Parts 264 and 265

Air pollution control, Container, Control device, Hazardous waste, Incorporation by reference, Inspection, Miscellaneous unit, Monitoring, Reporting and recordkeeping requirements, Standards, Surface impoundment, Tank, TSDF, Waste determination.

40 CFR Part 270

Administrative practice and procedure, Air pollution control, Confidential business information, Hazardous waste, Permit, Permit modification, Reporting and recordkeeping requirements.

Dated: December 18, 1995.

Mary D. Nichols,

Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, title 40, chapter I, parts 262, 264, 265, 270, and 271 of the Code of Federal Regulations is amended as follows:

PART 262—STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

1. The authority citation for part 262 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912(a), 6922, 6923, 6924, 6925, 6937 and 6938, unless otherwise noted.

§ 262.34 [Amended]

2. Section 262.34(a)(1)(i) is amended by inserting a comma after ''subparts I'' to read ''subparts I, AA, BB and CC''.

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart B—General Facility Standards

4. Section 264.13 is amended by revising paragraphs (b)(8) (i) and (ii) to read as follows:

§ 264.13 General waste analysis.

* * * * *

(b) * * *

(8) * * *

(i) If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.

(ii) If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off-site, that is used as the basis for knowledge of the waste.

Subpart AA—Air Emission Standards for Process Vents

5. In § 264.1033 the second sentence of paragraph (a)(2) is revised, paragraph (k)(2) is revised, and paragraph (m) is revised to read as follows:

§ 264.1033 Standards: Closed-vent systems and control devices.

(a) * * *

(2) * * * The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup.

* * *

* * * * *

(k) * * *

(2) Closed-vent systems shall be monitored to determine compliance with this section during the initial leak detection monitoring, which shall be conducted by the date that the facility becomes subject to the provisions of this section, annually, and at other times as requested by the Regional Administrator. For the annual leak detection monitoring after the initial leak detection monitoring, the owner or operator is not required to monitor those closed-vent system components which continuously operate under negative pressure or those closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed pipe flange).

* * * * *

(m) The owner or operator using a carbon adsorption system shall document that all carbon removed that is a hazardous waste and that is removed from a carbon adsorption system used to comply with § 264.1033(g) and § 264.1033(h) is managed in one of the following manners, regardless of the volatile organic concentration of that carbon:

(1) Regenerated or reactivated in a thermal treatment unit for which the owner or operator has been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of subpart X of this part;

(2) Incinerated in a hazardous waste incinerator for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of subpart O of this part; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 265, subpart O; or

(3) Burned in a boiler or industrial furnace for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of 40 CFR part 266, subpart H; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

* * * * *

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

§ 264.1082 [Amended]

6. In § 264.1082 paragraph (c)(2)(iii) is amended by revising ''removal rate (MR) for the process is greater'' to read ''removal rate (MR) for the process is equal to or greater''.

7. In § 264.1082 paragraph (d) is amended by revising ''that is not a hazardous waste but has an average VO concentration equal to or greater than 100 ppmw shall'' to read ''that is a hazardous waste shall''.

§ 264.1083 [Amended]

8. In § 264.1083 paragraph (a)(1) is amended by revising ''placed in waste management units'' to read ''placed in a waste management unit''.

9. In § 264.1083 paragraph (b)(1) is amended by revising ''placed in waste management units'' to read ''placed in a waste management unit''.

10. Section 264.1084 is amended by adding the following sentence to the end of paragraph (b)(4), and revising paragraph (c) to read as follows:

§ 264.1084 Standards: Tanks.

* * * * *

(b) * * *

(4) * * * To be considered a pressure tank for the purpose of compliance with this subpart, a unit must operate with no detectable emissions during filling to design capacity and the subsequent compression of the vapor headspace.

* * * * *

(c) As an alternative to complying with paragraph (b) of this section, an owner or operator may place hazardous waste in a tank equipped with a cover (e.g., a fixed roof) meeting the requirements specified in paragraph (c)(2) of this section when the hazardous waste is determined to meet the conditions specified in paragraph (c)(1) of this section.

(1) All of the following conditions shall be met at all times that hazardous waste is managed in the tank under normal process operations:

(i) The hazardous waste in the tank is neither mixed, stirred, agitated, nor circulated within the tank using a process that results in splashing, frothing, or visible turbulent flow on the waste surface during normal process operations;

(ii) The hazardous waste in the tank is not heated by the owner or operator except during conditions requiring that the waste be heated to prevent the waste from freezing or to maintain adequate waste flow conditions for continuing normal process operations;

(iii) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process or a process that produces an exothermic reaction; and

(iv) The maximum organic vapor pressure of the hazardous waste in the tank as determined using the procedure specified in § 264.1083(c) of this subpart is less than the following applicable value:

(A) If the tank design capacity is equal to or greater than 151 m^3, then the maximum organic vapor pressure shall be less than 5.2 kPa;

(B) If the tank design capacity is equal to or greater than 75 m^3 but less than 151 m^3, then the maximum organic vapor pressure shall be less than 27.6 kPa; or

(C) If the tank design capacity is less than 75 m^3, then the maximum organic vapor pressure shall be less than 76.6 kPa.

(2) To comply with paragraph (c)(1) of this section, the owner or operator shall design, install, operate, and maintain a cover to meet the following requirements:

(i) The cover and all cover openings (e.g. access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable organic emissions when all cover openings are secured in a closed, sealed position.

(ii) Each cover opening shall be secured in a closed, sealed position (e.g. covered by a gasketed lid or cap) at all times that hazardous waste is in the tank except as provided for in paragraphs (c)(2)(iii), (f)(1), and (f)(2) of this section.

(iii) One or more pressure relief devices which vent directly to the atmosphere may be used on the cover provided that each device remains in a closed, sealed position at all times except when tank operating conditions require that the device open for the purpose of preventing physical damage or permanent deformation of the tank or cover in accordance with good engineering design practices and the equipment manufacturer's recommendations. The device must be operated to minimize organic air emissions to the atmosphere to the extent practical, in consideration of good design and safety practices for handling hazardous materials. Examples of such devices include pressure-vacuum relief valves and conservation vents. Examples of tank operating conditions that may require the pressure relief device to open are filling and emptying of the tank, and internal pressure changes caused by diurnal temperature changes.

* * * * *

§ 264.1084 [Amended]

11. Section 264.1084(e) introductory text, is amended by revising ''or other closed-systems, EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a 'closed systems''' to read ''or other closed systems for the transfer of hazardous waste as described in paragraph (e)(1) or (e)(2) of this section. The EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a closed system.''

§ 264.1085 [Amended]

12. In § 264.1085 paragraph (d) introductory text, is amended by revising ''paragraph (b)(1)'' to read ''paragraph (b)''.

13. In § 264.1085 paragraph (f) introductory text, is amended by revising ''or other closed-systems, EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a 'closed system''' to read ''or other closed systems for the transfer of hazardous waste as described in paragraph (f)(1) or (f)(2) of this section. The EPA considers a drain system that meets the requirements of 40 CFR 61.346(a)(1) or 40 CFR 61.346(b)(1) through (b)(3) to be a closed system.''

§ 264.1086 [Amended]

14. Section 264.1086(b)(1) is amended by revising ''as required by paragraph (b)(2) to read ''in accordance with the requirements of paragraph (b)(2)''.

15. Section 264.1086 is amended by revising paragraph (b)(2)(ii)(B), adding paragraph (b)(2)(ii)(C), revising paragraph (b)(3) and revising paragraph (c) introductory text, to read as follows:

§ 264.1086 Standards: Containers.

(b) * * *

(2) * * *

(ii) * * *

(B) The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure.

(C) The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' in Appendix B of § 52.741.

* * * * *

(3) Transfer of the waste into or from a container shall be conducted in such a manner as to minimize waste exposure to the atmosphere to the extent practical, considering good engineering and safety practices for handling hazardous materials. Examples of container loading procedures that the EPA considers to meet the requirements of this paragraph include using a submerged-fill method to load liquids into the container; using a vapor-balancing or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; and transferring waste through a conveyance tube that is fitted to a container opening above the liquid level to splash-fill the material, and subsequently purging the conveyance tube with gas prior to removing it from the container opening.

(c) Each container opening shall be maintained in a closed, sealed position (e.g. covered by a gasketed lid) at all times that hazardous waste is in the container except when it is necessary to have the opening open during procedures to:

* * * * *

16. In § 264.1087 paragraph (c)(3)(ii) is revised to read as follows:

§ 264.1087 Standards: Closed-vent systems and control devices.

* * * * *

(c) * * *

(3) * * *

(ii) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of § 264.1033(m) of this part, regardless of the VO concentration of the carbon.

* * * * *

17. Section 264.1088 is amended by revising paragraph (d) to read as follows:

§ 264.1088 Inspection and monitoring requirements.

* * * * *

(d) Each control device used in accordance with the requirements of § 264.1087 of this subpart shall be inspected and monitored by the owner or operator in accordance with the procedures specified in § 264.1033(f)(2) and § 264.1033(i) of this part. The readings from each monitoring device required by § 264.1033(f)(2) shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures should be immediately implemented to ensure the control device is operated in compliance with the requirements of § 264.1087 of this subpart.

* * * * *

§ 264.1089 [Amended]

18. Section 264.1089(a)(1) is amended by revising ''40 CFR 265.1091(c)'' to read ''40 CFR 265.1091(a)''.

19. Section 264.1089(e) is amended by revising ''§ 264.1082(c)(2)(v) or § 264.1082(c)(2)(vi)'' to read § 264.1082(c)(2)(vi) or § 264.1082(c)(2)(vii)''.

§ 264.1090 [Amended]

20. Section 264.1090(a) is amended by revising ''reoccurrence'' to read ''recurrence''.

21. Section 264.1090 is amended by revising the second sentence of paragraph (c) and by revising paragraph (d) to read as follows:

§ 264.1090 Reporting requirements.

(a) * * *

(c) * * * The report shall describe each occurrence during the previous 6-month period when either:

(1) A control device is operated continuously for 24 hours or longer in noncompliance with the applicable operating values defined in § 264.1035(c)(4); or

(2) A flare is operated with visible emissions for 5 minutes or longer in a two-hour period, as defined in § 264.1033(d). * * *

(d) A report to the Regional Administrator in accordance with the requirements of paragraph (c) of this section is not required for a 6-month period during which all control devices subject to this subpart are operated by the owner or operator such that:

(1) During no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in § 264.1035(c)(4); and

(2) No flare was operated with visible emissions for 5 minutes or longer in a two-hour period, as defined in § 264.1033(d).

22. Section 264.1091 is amended by adding paragraph (a)(3) to read as follows:

§ 264.1091 Alternative control requirements for tanks.

(a) * * *

(3) The owner or operator may elect to comply with § 264.1084 (b)(2) or (b)(3) of this subpart using an alternative means of emission limitation as specified in 40 CFR 265.1091(a)(3).

* * * * *

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

23. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart B—General Facility Standards

24. Section 265.13 is amended by revising paragraph (b)(8)(i) and (ii) to read as follows:

§ 265.13 General waste analysis.

* * * * *

(b) * * *

(8) * * *

(i) If direct measurement is used for the waste determination, the procedures and schedules for waste sampling and analysis, and the results of the analysis of test data to verify the exemption.

(ii) If knowledge of the waste is used for the waste determination, any information prepared by the facility owner or operator or by the generator of the hazardous waste, if the waste is received from off-site, that is used as the basis for knowledge of the waste.

Subpart AA—Air Emission Standards for Process Vents

25. In § 265.1033 the second sentence of paragraph (a)(2) is amended, paragraph (j)(2) is revised, and paragraph (l) is revised to read as follows:

§ 265.1033 Standards: Closed-vent systems and control devices.

* * * * *

(a) * * *

(2) * * * The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup.

* * *

* * * * *

(j) * * *

(2) Closed-vent systems shall be monitored to determine compliance with this section during the initial leak detection monitoring, which shall be conducted by the date that the facility becomes subject to the provisions of this section, annually, and at other times as requested by the Regional Administrator. For the annual leak detection monitoring after the initial leak detection monitoring, the closed-vent system components which continuously operate under negative pressure or those closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of metal pipe or a bolted and gasketed pipe flange).

* * * * *

(l) The owner or operator using a carbon adsorption system shall document that all carbon that is a hazardous waste and that is removed from the control device is managed in one of the following manners, regardless of the volatile organic concentration of the carbon:

(1) Regenerated or reactivated in a thermal treatment unit for which the owner or operator has been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of 40 CFR part 264 subpart X;

(2) Incinerated in a hazardous waste incinerator for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the requirements of 40 CFR part 264 subpart O; or

(ii) Has certified compliance with the interim status requirements of subpart O of this part; or

(3) Burned in a boiler or industrial furnace for which the owner or operator either:

(i) Has been issued a final permit under 40 CFR part 270, and designs and operates the unit in accordance with the

requirements of 40 CFR part 266, subpart H; or

(ii) Has certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

* * * * *

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

26. Section 265.1081 is amended by revising the definition of *Cover*, and adding a definition for *Enclosure* to read as follows:

§ 265.1081 Definitions.

* * * * *

Cover means a device or system which is placed on or over a hazardous waste to create an air-tight barrier between the entire hazardous waste surface area and the space surrounding the unit, such that air emissions to the atmosphere are reduced. A cover may have openings such as access hatches, sampling ports, and gauge wells that are necessary for operation, inspection, maintenance, or repair of the unit on which the cover is installed provided that each opening is closed and sealed when not in use. Examples of covers include a fixed roof installed on a tank, a floating membrane cover installed on a surface impoundment, and a lid installed on a drum.

Enclosure means a structure that: (1) Surrounds a hazardous waste management unit, captures organic vapors emitted from that unit, and vents the vapors through a closed vent system to a control device; and (2) is designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' in Appendix B of § 52.741.

§ 265.1081 [Amended]

27. In § 265.1081, the definition of *Waste determination* is amended by revising ''determining the organic reduction efficiency'' to read ''the organic reduction efficiency'' and the definition of *Waste stabilization process* is amended by adding the sentence ''This does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.'' to the end of the definition.

* * * * *

§ 265.1083 [Amended]

28. In § 265.1083 paragraph (c)(2)(iii) is amended by revising ''removal rate (MR) for the process is greater'' to read ''removal rate (MR) for the process is equal to or greater''.

§ 265.1083 [Amended]

29. In § 265.1083 paragraph (d) is amended by revising ''that is not a hazardous waste but has an average VO concentration equal to or greater than 100 ppmw shall'' to read ''that is a hazardous waste shall''.

30. Section 265.1084 is amended by adding paragraph (a)(2)(iii), revising paragraph (a)(5)(iv), introductory text, revising the equation and the first definition in paragraph (a)(5)(v)(C), adding paragraph (b)(2)(iii), revising paragraph (b)(4)(iv), introductory text, revising the first sentence of paragraph (b)(6)(iii)(B), revising the definitions of Q_{aj} and C_{bj} in paragraph (b)(6)(iv), and revising the first sentence of paragraph (c)(3)(i) to read as follows:

§ 265.1084 Waste determination procedures.

(a) * * *

(2) * * *

(iii) When the hazardous waste is generated as part of a batch process that is not performed repeatedly, the owner or operator shall perform a waste determination of the VO concentration of the waste in the batch. The result of this waste determination is the average VO concentration for that waste.

* * * * *

(5) * * *

(iv) The following procedure shall be used to measure the VO concentration for each discrete quantity of material identified in paragraph (a)(5)(iii) of this section:

* * * * *

(v) * * *

(C) * * *

$$\overline{C} = \frac{1}{Q_T} \times \sum_{j=1}^{m} \left(Q_j \times C_j \right)$$

where:

$\bar{C}$=Average VO concentration of the hazardous waste, at the point of waste origination, ppmw.

* * * * *

(b) * * *

(2) * * *

(iii) When the hazardous waste is treated by a batch process that is not performed repeatedly, the owner or operator shall perform a waste determination for the treated waste in the batch. The result of this waste determination is the average VO concentration for that waste.

* * * * *

(4) * * *

(iv) The following procedure shall be used to measure the VO concentration for each discrete quantity of material identified in paragraph (b)(4)(iii) of this section:

* * * * *

(6) * * *

(iii) * * *

(B) The VO concentration of each hazardous waste stream entering the process (C_b) during the run shall be measured in accordance with the requirements of paragraph (a)(5)(iv) of this section. * * *

(iv) * * *

Q_{aj} = Mass quantity of hazardous waste exiting process during run ''j'', kg/hr. * * *

C_{bj} = Measured VO concentration of hazardous waste entering process during run ''j'' as determined in accordance with the requirements of § 265.1084(a)(5)(iv), ppmw.

* * * * *

(c) * * *

(3) * * *

(i) Unless otherwise specified in the methods referenced in paragraphs (c)(3)(ii) (A) through (E) of this section, a sufficient number of samples, but no less than three samples, shall be collected to represent the waste contained in the tank. * * *

* * * * *

31. Section 265.1085 is amended by adding the following sentence to the end of paragraph (b)(4) and revising paragraph (c) to read as follows:

§ 265.1085 Standards: Tanks.

* * * * *

(b) * * *

(4) * * * To be considered a pressure tank for the purpose of compliance with this subpart, a unit must operate with no detectable emissions during filling to design capacity and the subsequent compression of the vapor headspace.

(c) As an alternative to complying with paragraph (b) of this section, an owner or operator may place hazardous waste in a tank equipped with a cover (e.g., a fixed roof) meeting the requirements specified in paragraph (c)(2) of this section when the hazardous waste is determined to meet the conditions specified in paragraph (c)(1) of this section.

(1) All of the following conditions shall be met at all times that hazardous waste is managed in the tank, during normal process operations:

(i) The hazardous waste in the tank is neither mixed, stirred, agitated, nor circulated within the tank using a process that results in splashing, frothing, or visible turbulent flow on the waste surface during normal process operations;

(ii) The hazardous waste in the tank is not heated by the owner or operator

except during conditions requiring that the waste be heated to prevent the waste from freezing or to maintain adequate waste flow conditions for continuing normal process operations;

(iii) The hazardous waste in the tank is not treated by the owner or operator using a waste stabilization process or a process that produces an exothermic reaction; and

(iv) The maximum organic vapor pressure of the hazardous waste in the tank as determined using the procedure specified in § 265.1084(c) of this subpart is less than the following applicable value:

(A) If the tank design capacity is equal to or greater than 151 m^3, then the maximum organic vapor pressure shall be less than 5.2 kPa;

(B) If the tank design capacity is equal to or greater than 75 m^3 but less than 151 m^3, then the maximum organic vapor pressure shall be less than 27.6 kPa; or

(C) If the tank design capacity is less than 75 m^3, then the maximum organic vapor pressure shall be less than 76.6 kPa.

(2) To comply with paragraph (c)(1) of this section, the owner or operator shall design, install, operate, and maintain a cover to meet the following requirements:

(i) The cover and all cover openings (e.g. access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable organic emissions when all cover openings are secured in a closed, sealed position.

(ii) Each cover opening shall be secured in a closed, sealed position (e.g., covered by a gasketed lid or cap) at all times that hazardous waste is in the tank except as provided for in paragraphs (c)(2)(iii), (f)(1), and (f)(2) of this section.

(iii) One or more pressure relief devices which vent directly to the atmosphere may be used on the cover provided that each device remains in a closed, sealed position at all times except when tank operating conditions require that the device open for the purpose of preventing physical damage or permanent deformation of the tank or cover in accordance with good engineering design practices and manufacturers recommendations. The device must be operated to minimize organic air emissions to the atmosphere to the extent practical, in consideration of good design and safety practices for handling hazardous materials. Examples of such devices include pressure-vacuum relief valves and conservation vents. Examples of tank operating conditions that may require the pressure relief device to open are filling and emptying of the tank, and internal pressure changes caused by diurnal temperature changes.

* * * * *

§ 265.1086 [Amended]

32. Section 265.1086(d) is amended by revising ''paragraph (b)(1)'' to read ''paragraph (b)''.

§ 265.1087 [Amended]

33. Section 265.1087(b)(1) is amended by revising ''as required by paragraph (b)(2)'' to read ''in accordance with the requirements of paragraph (b)(2)''.

34. Section 265.1087 is amended by revising paragraph (b)(2)(ii)(B), adding paragraph (b)(2)(ii)(C), revising paragraph (b)(3) and revising paragraph (c), introductory text, to read as follows:

§ 265.1087 Standards: Containers.

* * * * *

(b) * * *

(2) * * *

(ii) * * *

(B) The enclosure may have permanent or temporary openings to allow worker access; passage of containers through the enclosure by conveyor or other mechanical means; entry of permanent mechanical or electrical equipment; or to direct airflow into the enclosure.

(C) The enclosure shall be designed and operated in accordance with the criteria for a permanent total enclosure as specified in ''Procedure T—Criteria for and Verification of a Permanent of Temporary Total Enclosure'' in Appendix B of Section 52.741.

* * * * *

(3) Transfer of the waste into or from a container shall be conducted in such a manner as to minimize waste exposure to the atmosphere to the extent practical, considering good engineering and safety practices for handling hazardous materials. Examples of container loading procedures that the EPA considers to meet the requirements of this paragraph include using a submerged-fill method to load liquids into the container; using a vapor-balancing or a vapor-recover system to collect and control the vapors displaced from the container during filling operations; and transferring waste through a conveyance tube that is fitted to a container opening above the liquid level to splash-fill the material, and subsequently purging the conveyance tube with gas prior to removing it from the container opening.

(c) Each container opening shall be maintained in a closed, sealed position (e.g. covered by a gasketed lid) at all times that hazardous waste is in the container except when it is necessary to have the opening open during procedures to:

* * * * *

35. In § 265.1088 paragraph (c)(3)(ii) is revised to read as follows:

§ 265.1088 Standards: Closed-vent systems and control devices.

* * * * *

(c) * * *

(3) * * *

(ii) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of § 264.1033(m) of this part, regardless of the VO concentration of the carbon.

* * * * *

36. In § 265.1089 paragraph (d) is revised to read as follows:

§ 265.1089 Inspection and monitoring requirements.

* * * * *

(d) Each control device used in accordance with the requirements of § 265.1088 of this subpart shall be inspected and monitored by the owner or operator in accordance with the procedures specified in § 265.1033(f)(2). The readings from each monitoring device required by § 265.1033(f)(2) shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures should be immediately implemented to ensure the control device is operated in compliance with the requirements of § 265.1088 of this subpart.

* * * * *

§ 265.1090 [Amended]

37. Section 265.1090(a)(1) is amended by revising ''as listed in § 265.1091(c)'' to read ''as listed in § 265.1091(a)''.

§ 265.1090 [Amended]

38. Section 265.1090(e) is amended by revising ''in accordance with § 265.1083(c)(2)(vi) or § 265.1083(c)(2)(v)'' to read ''in accordance with § 265.1083(c)(2)(vi) or § 265.1083(c)(2)(vii)''.

39. In § 265.1091 paragraph (a)(1)(i) is revised to read as follows:

§ 265.1091 Alternative tank control requirements.

(a) * * *

(1) * * *

(i) The fixed roof shall comply with the requirements of § 265.1085(d)(1) of this subpart. The internal floating roof shall rest or float on the waste surface (but not necessarily in complete contact with it) inside a tank that has a fixed roof. The internal floating roof shall be floating on the waste surface at all

times, except during initial fill and during those intervals when the tank is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be as continuous as possible, based on the amount of waste and the nature of the waste handling operation, and shall be accomplished as rapidly as possible.

* * * * *

PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE MANAGEMENT PROGRAM

40. The authority citation for Part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6925, 6927, 6939, and 6974.

Subpart B—Permit Application

§ 270.27 [Amended]

41. Section 270.27(a)(1) is amended by revising ''as listed in § 265.1091(c)'' to read ''as listed in § 265.1091(a)''.

§ 270.27 [Amended]

42. Section 270.27(a)(3) is amended by revising ''the specification listed in § 265.1087(b)(2)(ii)'' to read ''the specifications listed in § 264.1086(b)(2)(ii).''

* * * * *

[FR Doc. 96–1713 Filed 2–8–96; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 0 and 1

[ET Docket No. 93–266; FCC 95–493]

Review of the Pioneer's Preference Rules

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: By this *Memorandum Opinion and Order* (*MO&O*), the Commission denies the petition for reconsideration filed by Qualcomm Incorporated (Qualcomm) to the *Second Report and Order* (*Second R&O*) in this proceeding, and grants the petition for reconsideration filed by Celsat America, Inc. (Celsat) to the *Third Report and Order* (*Third R&O*). The Commission finds that there is no need to reconsider its determination of what constitutes innovative technology, as requested by Qualcomm; and finds that it is desirable to reconsider its decision to apply certain new pioneer's preference regulations to pioneer's preference requests accepted for filing on or before September 1, 1994, as requested by Celsat. This action is intended to affirm the Commission's pioneer's preference policies, consistent with Congressional directives.

EFFECTIVE DATE: March 11, 1996.

FOR FURTHER INFORMATION CONTACT: Rodney Small, (202) 418–2452, Office of Engineering and Technology, Federal Communications Commission, Washington, DC 20554.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's *MO&O* adopted December 8, 1995, and released January 30, 1996. This action will not add to or decrease the public reporting burden. The full text of the Commission decision is available for inspection and copying during regular business hours in the FCC Reference Center (Room 239), 1919 M Street, NW, Washington, DC. The complete text of this decision also may be purchased from the Commission's duplication contractor, International Transcription Service, Inc., (202) 857–3800, 2100 M Street, NW, Suite 140, Washington, DC 20037.

Summary of MO&O

1. The pioneer's preference program provides preferential treatment in the Commission's licensing processes for parties that make significant contributions to the development of a new service or to the development of a new technology that substantially enhances an existing service. The program was established to foster new communications services and technologies and to encourage parties to submit innovative proposals in a timely manner. Under the pioneer's preference rules, a necessary condition for the award of a preference is that an applicant demonstrate that it has developed the capabilities or possibilities of a new technology or service, or has brought the technology or service to a more advanced or effective state. The applicant must also demonstrate that the new service or technology is technically feasible by submitting either the summarized results of an experiment or a technical showing. Finally, a preference is granted only if the service rules adopted are a reasonable outgrowth of the applicant's proposal and lend themselves to grant of a preference. A pioneer's preference recipient's license application is not subject to mutually exclusive applications.

2. The *Second R&O*, 60 FR 13636 (March 14, 1995), addressed proposals set forth in the *Notice of Proposed Rule Making*, 58 FR 57578 (October 26, 1993), in this proceeding and modified certain rules regarding the Commission's pioneer's preference program. Specifically, the *Second R&O* provided pioneers with a discount on license charges in services in which licenses are awarded by competitive bidding, and it also modified several administrative rules. In addition, the *Second R&O* also held that, where an ''innovative technology'' has developed or enhanced more than one service, the grant of a pioneer's preference in only one such service is sufficient incentive to encourage pioneering proposals to be submitted.

3. Qualcomm states that the Commission should reconsider its determination of what constitutes ''innovative technology.'' Qualcomm contends that four aspects of the *Second R&O* are not clearly defined. First, Qualcomm maintains that a technology should not be considered ineligible for a pioneer's preference merely because that technology could be used in an existing service; second, it requests that the Commission clarify that an innovative technology that can be applied to more than one new service should be eligible for a preference in all services that are not existing services; third, it requests that an innovator who develops a new technology that both significantly improves an existing service and that may also be used to provide a new service in a different band be eligible for a preference in the new service; and fourth, it requests that the Commission clarify what it means by a ''new service'' operating in a higher band. Qualcomm states that there may be some confusion on this point with respect to broadband Personal Communications Services (PCS). No party filed comments on Qualcomm's petition.

4. Legislation implementing domestically the General Agreement on Tariffs and Trade (GATT) was enacted on December 8, 1994, and contained an amendment to the Communications Act relating to the pioneer's preference program. Included in this amendment was Section 309(j)(13)(D), which specified new requirements regarding criteria, peer review, and unjust enrichment for pioneer's preference requests that were accepted for filing after September 1, 1994. In the *Third R&O*, 60 FR 32116 (June 20, 1995), the Commission implemented the new requirements specified in Section 309(j)(13)(D) and extended them to pioneer's preference requests filed on or before September 1, 1994 in proceedings that have not reached the tentative decision stage. The Commission stated that such action would further its

2. Section 17.5 is amended by revising the sixth sentence to read as follows:

§ 17.5 Bids.

* * * Bids must be accompanied by certified checks, post office money orders, bank drafts, or cashier's checks made payable to the United States of America for 2 percent of the amount of the fair market value or $2,500, whichever is greater, in the case of a freehold interest or for the amount of the first year's rent in the case of a leasehold interest. * * *

3. Section 17.6 is amended by adding two sentences to the end of the section, to read as follows:

§ 17.6 Action at close of bidding.

* * * In the case of a freehold interest, the high bidder must submit the balance of the bid within 45 days of the bid award in the form of a certified check, post office money order, bank draft, or cashier's check, made payable to the United States of America. Failure to submit the full balance within 45 days will result in the forfeiture of $1,000 of bid deposit, unless the bidder has been released from the bid or an extension has been granted by the authorized officer, and the property will be awarded to the next highest bidder upon fulfillment of the requirements of this section.

Date: May 19, 1996.

George T. Frampton, Jr.,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 96–14104 Filed 6–4–96; 8:45 am]

BILLING CODE 4310–70–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264, 265, 270, and 271

[FRL–5509–4]

RIN 2060–AB94

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Amendment of final rule to postpone requirements.

SUMMARY: This document amends the EPA standards to postpone the effective date of the requirements in the December 6, 1994 final rule entitled, ''Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers'' until October 6, 1996.

DATES: These amendments are effective June 5, 1996.

ADDRESSES: Docket. The supporting information used for the final rule is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to the final rule are F–91–CESP–FFFFF, F–92–CESA–FFFFF, F–94–CESF–FFFFF, F–94–CE2A–FFFFF, F–95–CE3A–FFFFF, and F–96–CE4A–FFFFF. The RCRA docket is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Review of docket materials is conducted at the Virginia address; an appointment is required to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA Docket Office is RCRA Information Center (5305W), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: For information about this postponement contact the RCRA Hotline at (800) 424–9346 toll-free, or (703) 920–9810.

SUPPLEMENTARY INFORMATION:

1. Postponement of Effective Date for Rule Requirements

The effective date of the requirements in the final rule, originally published December 6, 1994 (59 FR 62896) and postponed November 13, 1995 (60 FR 56952), are further postponed until October 6, 1996. The requirements of these final standards were originally scheduled to become effective as of June 5, 1995. The EPA specified in the final rule a schedule that established the compliance dates by which different requirements of the final rule must be met. These compliance dates and requirements are explained further in the final rule (59 FR 62896, December 6, 1994) under **SUPPLEMENTARY INFORMATION.** Today's amendment changes only the effective date of the requirements contained in the final standards. The effective date will be October 6, 1996 for all provisions of the standards, including the applicability of 40 CFR part 265 subparts AA, BB, and CC to 90-day accumulation units at hazardous waste generators, the applicability of 40 CFR part 265 subparts AA, BB, and CC to RCRA permitted units, and the applicability of the final standards to tanks in which waste stabilization activities are performed. All other compliance dates for the final rule remain as published in the final rule (59 FR 62896.)

The EPA initially extended the effective date of the requirements in the final rule for six months to allow time to clarify certain provisions of the final rule and develop other compliance options (see 60 FR 26828, May 19, 1995). On August 14, 1995 the EPA published a Federal Register notice, ''Proposed rule; data availability'' (60 FR 41870) and opened RCRA docket F–95–CE3A–FFFFF to accept comments on revisions that the EPA is considering for the final standards. The provisions of the final rule that these revisions would affect are the waste determination procedures, the standards for containers, and the applicability of the final standards to units that operate air emission controls in accordance with certain Clean Air Act standards. In addition, these revisions would reduce the monitoring, record keeping, and reporting requirements for affected tanks, surface impoundments, and containers.

The EPA accepted public comments on the appropriateness of these revisions through October 13, 1995, and is now in the process of finalizing amendments to the final rule to incorporate the described revisions, based on the information the EPA noticed and the comments EPA received. As anticipated, the amendments will provide certain compliance options for waste determination procedures and for container standards that are not currently available in the published final rule. On November 13, 1995 (60 FR 56952) the EPA again postponed the effective date of the rule requirements until June 6, 1996 to allow time for the EPA to publish amendments to the December 6, 1994 final standards. The EPA expects to publish these amendments in the near future. Given that the EPA is in the process of amending the rule in ways that would increase compliance flexibility and possibly reduce certain regulatory requirements, the EPA considers it appropriate to delay the June 6, 1996 effective date of the rule requirements for four months. (See 5 U.S.C. 705, ''when an agency finds that justice so requires, it may postpone the effective date of action taken by it, pending judicial review.'') In particular, the EPA is not sure that it will have adequate time to promulgate the amendments before June 6, 1996 to allow facilities to avoid compliance expenditures based on the December 6, 1994 final rule, expenditures which may prove unnecessary in light of the projected amendments. This postponement will thus allow time for the EPA to publish

the amendments. The EPA anticipates that by October 6, 1996 affected sources will have had ample time to make any necessary alterations to their compliance plans in response to the amendments. Affected sources have been on notice of the final regulations since they were published in December of 1994. The EPA expects that by early 1995, most facilities had begun preparing their implementation strategies and planning for any necessary equipment modifications, in anticipation of the originally scheduled implementation date of June 6, 1995. Thus, the EPA considers today's four month extension to be sufficient time for affected facilities to become familiar with the revised requirements contained in the amended standards, and to make any necessary revisions to their implementation strategies.

The EPA has received a request to stay the rule from parties that brought judicial challenges to the December 6, 1994 published rule. In taking this action to postpone the effective date of the rule requirements, the EPA is not concurring that the criteria for a stay (such as likelihood of irreparable harm or likelihood that these parties will ultimately prevail should the rule be litigated) are met. Rather, as a prudential matter, the EPA believes that a four month delay is appropriate for the reasons explained above.

2. Retention of Final Compliance Date of December 8, 1997

The December 6, 1994 published rule set a final compliance date of December 8, 1997, by which time all required air emission control equipment must be operating (59 FR 62897). The EPA does not believe that postponing the effective date of the rule requirements necessitates any postponement of the December 8, 1997 compliance date. The final compliance date was chosen to allow time for facility modifications that may be involved in the compliance approach of certain facilities. The EPA believes that, for many air emission control applications, the required control devices can be installed and in operation within several months. However, the EPA agrees that under some circumstances, the owner's or operator's approach to complying with the air emission control requirements under the subpart CC standards may involve a major design and construction project which requires a longer time to complete. In recognition of these cases, the EPA decided that it is reasonable to allow up to December 8, 1997 for affected facilities to install and begin operation of air emission controls required by the supbart CC standards. (Hazardous Waste TSDF Background Information Document for Promulgated Organic Air Emission Standards, EPA–453/R–94–076b, page 9–7.)

The final rule requirements that may necessitate a major modification, as described above, for tanks are paragraphs (b) through (d) of 40 CFR parts 264.1084 and 265.1085. These paragraphs specify air emission control equipment that must be operated on tanks receiving affected hazardous waste. Similarly, the requirements that may necessitate such a major modification for surface impoundments are paragraphs (b) through (e) of 40 CFR parts 264.1085 and 265.1086. These paragraphs specify air emission control equipment that must be operated on surface impoundments receiving affected hazardous waste. To comply with these requirements for tanks and surface impoundments, facilities may choose to construct new hazardous waste management units to replace existing units, or may choose to modify existing hazardous waste management units. Examples of facility equipment modifications that could require an extended period of compliance would be replacing a large open surface impoundment with a series of covered tanks, or fitting an existing open tank with a fixed roof vented to a control device. The EPA recognizes that such major modifications or new construction can require several months or more, and therefore allows until December 8, 1997 for facilities to comply with the air emission control requirements of the final subpart CC standards.

In addition, certain States may require that a facility obtain a permit modification prior to performing a major modification such as those described above. The EPA recognizes that such permit modifications can be a lengthy process, and therefore felt it was appropriate to afford an extended compliance period to allow such modifications to be obtained (59 FR 62919). The EPA does not expect that such a lengthy period of implementation would be required in circumstances other than those described above, although § 264.1082(c) allows that such a period is available if necessary.

The final rule provisions that justified a compliance date of December 8, 1997 are not among those that are potentially affected by the revisions currently under EPA's consideration. Specifically, the EPA is not considering changes to the requirements for covers and air emission controls on tanks and surface impoundments. All affected facilities have been on notice of the final rule air emission control requirements for these units since the final rule publication on December 6, 1994. Therefore, the EPA does not consider it appropriate to postpone the compliance date of December 8, 1997, by which all required air emission control equipment must be operating.

3. Conclusion

The EPA is amending the final rule such that the final rule requirements are not effective until October 6, 1996. The final rule text affected by this postponement is amended as follows.

List of Subjects

40 CFR Parts 264 and 265

Air pollution control, Container, Control device, Hazardous waste, Incorporation by reference, Inspection, Miscellaneous unit, Monitoring, Reporting and recordkeeping requirements, Standards, Surface impoundment, Tank, TSDF, Waste determination.

40 CFR Part 271

Administrative practice and procedure, Air pollution control, Confidential business information, Hazardous waste, Reporting and recordkeeping requirements.

Dated: May 16, 1996.

Mary D. Nichols,

Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, title 40, chapter I, parts 264, 265, and 271 of the Code of Federal Regulations are amended as follows:

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

2. Section 264.1080 is amended by revising paragraphs (b)(1) and (c) to read as follows:

§ 264.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before October 6, 1996, and in

which no hazardous waste is added to the unit on or after this date.

* * * * *

(c) For the owner and operator of a facility subject to this subpart and who received a final permit under RCRA section 3005 prior to October 6, 1996, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 40 CFR 124.15 of this chapter or reviewed in accordance with the requirements of 40 CFR 270.50(d) of this chapter. Until such date when the owner and operator receives a final permit incorporating the requirements of this subpart, the owner and operator is subject to the requirements of 40 CFR Part 265 subpart CC.

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

4. Section 265.1080 is amended by revising paragraph (b)(1) and paragraph (c) introductory text to read as follows:

§ 265.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before October 6, 1996, and in which no hazardous waste is added to the unit on or after this date.

* * * * *

(c) For the owner and operator of a facility subject to this subpart who has received a final permit under RCRA section 3005 prior to October 6, 1996, the following requirements apply:

* * * * *

5. Section 265.1082 is amended by revising paragraphs (a) introductory text, paragraph (a)(1), (a)(2) introductory text, (a)(2)(iii), and (a)(2)(iv) to read as follows:

§ 265.1082 Schedule for implementation of air emission standards.

(a) Owners or operators of facilities existing on October 6, 1996, and subject to subparts I, J, and K of this part shall meet the following requirements:

(1) Install and begin operation of all control equipment required by this subpart by October 6, 1995, except as provided for in paragraph (a)(2) of this section.

(2) When control equipment required by this subpart cannot be installed and in operation by October 6, 1996, the owner or operator shall:

* * * * *

(iii) For facilities subject to the recordkeeping requirements of § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than October 6, 1996.

(iv) For facilities not subject to § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility no later than October 6, 1996.

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

6. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

Subpart A—Requirements for Final Authorization

7. Section 271.1(j) is amended by revising the effective date of the following entry in Table 1 to read as follows:

§ 271.1 Purpose and Scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	**Federal Register** reference	Effective date
* *	* *	* *	* *
December 6, 1994	Air Emission Standards for Tanks, Surface Impoundments, and Containers.	59 FR 62896–62953	October 6, 1996.

8. Section 271.1(j) is amended by revising the effective date of the following entry in Table 2 to read as follows:

§ 271.1 Purpose and Scope.

* * * * *

(j) * * *

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	**Federal Register** reference
* *	* *	* *	* *
October 6, 1996	Air Emission Standards for Tanks, Surface Impoundments, and Containers.	3004(n)	December 6, 1994, 59 FR 62896–62953.

[FR Doc. 96–14106 Filed 6–4–96; 8:45 am]
BILLING CODE 6560–50–P

40 CFR Part 300

[FRL–5511–9]

Substances Contingency Plan: National Priorities List Update

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of deletion of the Waste Disposal Engineering Superfund Site from the National Priorities List (NPL).

SUMMARY: The Environmental Protection Agency (EPA) announces the deletion of the Waste Disposal Engineering Inc. Site in Minnesota from the National Priorities List (NPL). The NPL is Appendix B of 40 CFR part 300 which is National Oil and Hazardous Substances Contingency Plan (NCP), which EPA promulgated pursuant to Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended. This action is being taken by EPA and the State of Minnesota, because it has been determined that Responsible Parties have implemented all appropriate response actions required. Moreover, EPA and the State of Minnesota have determined that remedial actions conducted at the site to date remain protective of public health, welfare, and the environment.

EFFECTIVE DATE: June 5, 1996.

FOR FURTHER INFORMATION CONTACT:

Larry Schmitt at (312) 353–6565 (SR–6J), Remedial Project Manager or Gladys Beard at (312) 886–7253, Associate Remedial Project Manager, Superfund Division, U.S. EPA—Region V, 77 West Jackson Blvd., Chicago, IL 60604. Information on the site is available at the local information repository located at: The Anoka County Community Health and Environmental Service, Anoka County Government Center, RM. 360, 2100 3rd Ave., Anoka, MN 55303 and Andover City Hall, 1685 Crosstown Blvd., Andover, MN 55304. Requests for comprehensive copies of documents should be directed formally to the Regional Docket Office. The contact for the Regional Docket Office is Jan Pfundheller (H–7J), U.S. EPA, Region V, 77 W. Jackson Blvd., Chicago, IL 60604, (312) 353–5821.

SUPPLEMENTARY INFORMATION: The site to be deleted from the NPL is: Waste Disposal Engineering Inc. Site located in Andover, Minnesota. A Notice of Intent to Delete for this site was published March 26, 1996 (61 FR 13131). The closing date for comments on the Notice of intent to Delete was April 26, 1996. EPA received no comments and therefore no Responsiveness Summary was prepared.

The EPA identifies sites which appear to present a significant risk to public health, welfare, or the environment and it maintains the NPL as the list of those sites. Sites on the NPL may be the subject of Hazardous Substance Response Trust Fund (Fund-) financed remedial actions. Any site deleted from the NPL remains eligible for Fund-financed remedial actions in the unlikely event that conditions at the site warrant such action. Section 300.425(e)(3) of the NCP states that Fund-financed actions may be taken at sites deleted from the NPL in the unlikely event that conditions at the site warrant such action. Deletion of a site from the NPL does not affect responsible party liability or impede agency efforts to recover costs associated with response efforts.

List of Subjects in 40 CFR Part 300

Air pollution control, Chemicals, Hazardous substances, Hazardous Waste, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

PART 300—[AMENDED]

1. The authority citation for Part 300 continues to read as follows:

Authority: 42 U.S.C. 9601–9657; 33 U.S.C. 1321(c)(2); E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp; p. 351; E.O. 12580, 52 FR 2923, 3 CFR, 1987 Comp.; p. 193.

Appendix B to Part 300 [Amended]

2. Table 1 of Appendix B to part 300 is amended by removing the Site ''Waste Disposal Engineering Inc. Site, Andover, Minnesota''.

Dated: May 14, 1996.

Valdas V. Adamkus,

Regional Administrator, U.S. EPA, Region V.

[FR Doc. 96–13985 Filed 6–4–96; 8:45 am]
BILLING CODE 6560–50–M

Federal Register

Tuesday
January 14, 1997

Part III

Environmental Protection Agency

40 CFR Part 268

Land Disposal Restrictions Phase III—Emergency Extension of the K088 Capacity Variance; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[EPA # 530–Z–96–PH3F–FFFFF; FRL–5676–4]

Land Disposal Restrictions Phase III—Emergency Extension of the K088 Capacity Variance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Under the Land Disposal Restrictions (LDR) program of the Resource Conservation and Recovery Act (RCRA), EPA is extending the current national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088) for six (6) months. Thus, K088 wastes do not have to be treated to meet LDR treatment standards until July 8, 1997, six months from the current treatment standard effective date of January 8, 1997. EPA is extending the national capacity variance due to unanticipated performance problems by the treatment technology which provides most of the available treatment capacity for these wastes. As a result, the Agency does not believe that sufficient treatment capacity which minimizes short and long-term threats to human health and the environment posed by land disposal of the potliners is presently available. The length of the extension of the national capacity variance is based on EPA's best current estimate of the time it will take to modify, evaluate, and correct the current deficiencies in treatment performance.

EFFECTIVE DATE: January 8, 1997.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–PH3F–FFFFF. The RCRA Docket is open from 9 a.m. to 4 p.m. Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at mo cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 (toll-free) or TDD (800) 553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For specific information, contact the Waste Treatment Branch (5302W), Office of Solid Waste (OSW), U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460; phone (703) 308–8434. For information on the capacity analyses, call Pan Lee or Bill Kline at (703) 308–8440. For information on the regulatory impact analyses, contact Paul Borst at (703) 308–0481. For other questions, call John Austin at (703) 308–0436 or Mary Cunningham at (703) 308–8453.

SUPPLEMENTARY INFORMATION: Today's final rule as well as the K088 Fact Sheet and the Index to the Record of materials in the docket are available on the Internet. Follow these instructions to access the information electronically:

Gopher: gopher.epa.gov
WWW: http:///www.epa.gov
Dial-up: 919 558–0335

This report can be accessed off the main EPA Gopher menu, in the directory EPA Offices and Regions/Office of Solid Waste and Emergency Response (OSWER)/Office of Solid Waste (RCRA)

FTP: ftp.epa.gov
Login: anonymous
Password: your Internet address

Files are located in /pub/gopher/OSWRCRA.

SUPPLEMENTARY INFORMATION

Table of Contents

I. Background

A. The Existing Treatment Standard and National Capacity

Variance for Spent Potliners

On April 8, 1996, EPA promulgated a prohibition on land disposing spent potliners from primary aluminum production (Hazardous Waste K088) unless the waste satisfied the treatment standards for K088 established by EPA as part of the same rulemaking. (61 FR 15566, April 8, 1996.) Spent potliners are a highly toxic hazardous waste, whose hazardous constituents include cyanide (present in concentrations between 0.1 and 1 percent, which are quite high for such a toxic constituent), toxic metals, and polycyclic aromatic hydrocarbons (PAHs). See the Final BDAT Background Document for Spent Potliners from Primary Aluminum Reduction—K088, February 29, 1995. These wastes also contain high concentrations of fluoride. See generally *id.* at 15584–585. Previous improper management of spent potliners has resulted in widespread groundwater contamination with cyanide and fluoride, and was an important factor in EPA's decision to list these materials as hazardous wastes. See 53 FR 35412, September 13, 1988. The treatment standards for K088 wastes require substantial reductions in the total concentration of organic hazardous constituents and cyanide, and substantial reductions in the leachability of toxic metals and fluoride. See 61 FR 15626, April 8, 1996. The reduction in leachability is measured by application of the Toxicity Characteristic Leaching Procedure (TCLP), SW–846 Method 1311. Id.

These treatment standards are based upon performance of combustion technology plus stabilization treatment of combustion residues. Id. at 15584. The treatment standard for fluoride is based upon the performance demonstrated by the treatment process developed by Reynolds Metals Company during studies conducted as part of their application for delisting [1] treated K088 from hazardous waste regulation. See 61 FR 15585, April 8, 1996. Although treatment standards were based upon these technologies, any treatment technology (other than impermissible dilution) may be used to achieve these established numerical standards. Data in the administrative record indicate that these treatment standards are achievable by a number of different technologies, including combustion followed by stabilization of the residue. See the Final BDAT Background Document for Spent Potliners from Primary Aluminum

[1] EPA granted a final exclusion from the lists of hazardous wastes contained in 40 CFR 261.32 —i.e., a delisting— for certain solid wastes derived from the treatment of K088 at Reynolds Metals Company, Gum Springs, Arkansas (56 FR 67197, December 30, 1991). The delisting is based on treating the same parameters covered by the LDR treatment standard, and compliance is also measured by TCLP analyses for toxic metals, PAHs, cyanide, and fluoride. The status of this delisting is discussed further in section V.A. of this Notice.

Reduction—K088, February 29, 1995, available in the docket.

Notwithstanding that a number of different treatment technologies can achieve the treatment standard, in fact, virtually all existing treatment capacity is provided by a single operation, the Reynolds treatment facility located in Gum Springs, Arkansas. See 61 FR 15589, April 8, 1996; Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III (February 1996, Volume I, pages 4–4 to 4–11). The Reynolds process entails the crushing and sizing of spent potliner materials, the addition of roughly equal portions of limestone and a particular type of brown sand as flux, and the feeding of the combined mixture to a rotary kiln for thermal destruction of cyanide and PAHs. The process also is intended to reduce the mobility of soluble fluoride through the formation of insoluble calcium fluoride. Spent potliners (SPL) are generated in large volumes ranging from 100,000 to 125,000 tons annually.[2] Of the approximate 140,000 tons of treatment capacity EPA estimated was available, 120,000 tons are provided by Reynolds.[3] Because of this potential bottleneck, EPA was concerned enough about the possibility for administrative delays in obtaining access to Reynolds' process that the Agency delayed the prohibition effective date by granting a nine-month national capacity extension, pursuant to RCRA section 3004(h)(2), to assure that logistical difficulties were resolved before the prohibition on land disposal became effective. 61 FR 15589, April 8, 1996; Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III (February 1996, Volume I, pages 4–4 to 4–11).[4] The prohibition (and applicable treatment standards) consequently is scheduled to take effect on January 8, 1997.

[2] Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III (February 1996, Volume I, pages 4–5 to 4–8). Because SPL are not generated continuously, and because the rate of generation fluctuates according to the amount of aluminum produced, it is not possible to estimate this figure with more accuracy. Theoretically, an average of approximately 110,000 tons annually may be used for purpose of assessing available treatment capacity. There are generation data submitted after LDR Phase III was published and please see the docket files: 4/10/96 letter attached to July 9, 1996 petition from aluminum smelters and Reynolds' 11/25/96 submission in the Attachment of November 25, 1996 notes.

[3] Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III (February 1996, Volume I, pages 4–9 to 4–10).

[4] Reynolds challenged EPA's decision in the D.C. Circuit and attempted to obtain expedited review of its petition, but the D.C. Circuit denied Reynolds' motion.

II. Subsequent Events

Reynolds presently uses its process to treat its own spent potliner K088 wastes and those from other sources, and disposes most of the residue in a dedicated landfill (i.e. a monofill receiving only these treatment residues) located at the treatment site. The company is also using these residues as fill material in unlined pits at a Hurricane Creek, Arkansas mining site, and as a test all-weather road surface at the mining site. (Trip Report, EPA, October 30, 1996). The treatment process appears to be destroying PAHs as predicted, and to be reducing total cyanide concentrations from initial concentrations ranging from 975 mg/kg to 6350 mg/kg to residual levels of 50 mg/kg to 150 mg/kg.[5] For over two years, however, notwithstanding that the wastes as tested by the TCLP would have complied with the land disposal restriction treatment standards for the non-wastewater forms of K088, *actual* sampling data shows potentially high concentrations of hazardous constituents in the leachate from the dedicated monofill. As measured in September 1996, total cyanide concentrations in the leachate are 46.5 mg/L (the treatment standards for K088 wastewaters specify a concentration of 1.2 mg/L); arsenic concentrations are at 6.55 mg/L (treatment standard 1.2 mg/L); and fluoride concentrations are at 2228 mg/L (treatment standard 35 mg/L). (Gum Springs Leachate Analytical Results, Reynolds Metals Company, September 26, 1996).[6] Analysis of surface water run-off from treated SPL used as test roadbeds at the Hurricane Creek Mine found total cyanide concentrations in the leachate of 2.0 mg/L (the treatment standards for K088 wastewaters specify a concentration of 1.2 mg/L); arsenic concentrations are at 1.24 mg/L (treatment standard 1.2 mg/L); and fluoride concentrations are at 229 mg/L (treatment standard 35 mg/L). (Arkansas Department of Pollution Control & Ecology, November 12, 1996). The Gum Springs monofill leachate also has a pH of 12.75 to 13.5, exceeding levels identifying a waste as hazardous due to the characteristic of corrosivity.[7]

[5] See Table 2, 56 FR 33004, July 18, 1991 and attachments to December 9, 1996 letter from Pat Grover to Mike Shapiro.

[6] EPA was not aware of these data until recently, and, in particular was not aware of these data during the rulemaking which established the K088 treatment standard. EPA notes further that the leachate from the landfill is being intercepted and collected by Reynolds, and so is not contaminating the environment at the treatment site. However, EPA also notes that there is no interception of leachate or runoff at the Hurricane Creek Mine Site.

[7] As it happens, this elevated pH could provide a clue to why the treatment process is operating less well than predicted, and could be rectifiable.

The Reynolds process thus appears to be performing significantly less well than anticipated. Indeed, it does not appear to be reducing mobility of hazardous constituents significantly more than occurs in disposal of *untreated* spent potliners. Landfill leachate data obtained from two hazardous waste landfill cells receiving approximately 40 percent untreated SPL shows cyanide concentrations of 11 and 14 mg/L, arsenic concentrations of 0.56 and 0.11 mg/L, and fluoride concentrations of 2.3 and 0.001 mg/L respectively. (Staff Communication; November 20, 1996, fax of analytical data reports for landfill cells L12 and L13, Chemical Waste Management of the Northwest, Inc., Arlington, Oregon). Toxic constituents in the untreated Oregon Landfill data are significantly lower than observed in the leachate from the treated waste in the Gum Springs landfill. The Agency notes that some dilution and neutralization probably occurs from leachate produced by other wastes in the Oregon landfill, so that a direct comparison of the two different leachate results is only partially appropriate. However, the Agency believes the comparison is still relevant in that K088 is presently being disposed in the Oregon landfill, and this same K088 stream would be diverted to the Reynolds facility if the Agency did not take action today. The data available indicate that a more concentrated and toxic leachate would result from the Reynolds facility.

The Agency believes that the increased mobility of cyanide, fluoride, and arsenic are due to the highly alkaline conditions that exist at Reynolds' Gum Springs monofill. In the case of cyanide, for example, alkali-metallic cyanide complexes are soluble,[9] and even insoluble iron cyanides can be solubilized under highly alkaline conditions.[10] While the total cyanide concentration in the treated waste has been greatly reduced by Reynolds' treatment process, cyanide remaining in the residue would be environmentally mobile and in fact does appear in high concentrations in the alkaline leachate from the Gum Springs landfill. As a result, almost all remaining cyanide is detected in the Gum Springs leachate, where at a more neutral pH, only soluble free cyanide

[9] Standard Methods for the Examination of Water and Wastewater, 16th Edition, APHA, AWWA, & WPCF, 1985, page 327.

[10] Id., page 330.

would be measured. In the case of the Oregon landfill, the leachate is of more neutral pH (i.e., pH 6.5 to pH 7.5) and only a small fraction of the constituents of concern are soluble even though the total concentration of toxics in the potliner being disposed is much higher. The Agency does not have information detailing the sources or properties of other hazardous wastes being co-disposed at the Oregon site, but again notes that their presence did not result in a more toxic leachate. EPA surmises that the co-disposed wastes provided some neutralization of the alkaline spent potliner. The extreme alkaline pH conditions that exist in the Gum Springs monofill were not anticipated by the Agency, and are not analogous to the test conditions (i.e. the TCLP) used to verify treatability and compliance with the delisting provisions.

III. EPA's Decision with Respect to Extending the National Capacity Variance

The root requirement of the land disposal restriction program is that treatment of hazardous wastes is to ''substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.'' RCRA section 3004(m)(1). To date, in the absence of a reliable means of quantifying when threats are minimized, EPA has implemented this requirement by requiring treatment to reflect the performance of Best Demonstrated Available Treatment technologies, in order to assure substantial reductions of a waste's toxicity and mobility before land disposal. See, e.g., 56 FR 6641 (Feb. 26, 1990).

There are certainly legitimate questions as to the degree of risk reduction through treatment needed to satisfy this minimize threat standard, and EPA has stated repeatedly that the statute does not require elimination of all threats or optimized treatment of each hazardous constituent in order to satisfy the requirement. See, e.g., *id.* at n. 1; 56 FR 12355, March 25, 1991. However, under the circumstances present here, EPA finds that the effectiveness of the Reynolds process, as operated, to minimize short-term or long-term threats sufficiently to satisfy the core statutory requirement must be seriously questioned. For instance, the levels of cyanide and arsenic (and also the less-toxic fluoride) in the leachate from the treated potliners is not significantly superior to that found when untreated potliners are landfilled, as explained above.

The statute further provides in section 3004(h)(2) that EPA shall establish the effective date of a land disposal prohibition on the earliest date on which ''adequate alternative treatment, recovery or disposal capacity *which protects human health and the environment* will be available''. (Emphasis added.) See also sections 3004 (d)(1), (e)(1) and (g)(5), which require that land disposal of hazardous wastes ultimately be protective if land disposal is not to be prohibited. See 60 FR at 14473 (March 2, 1995); 56 FR at 41168 (Aug. 19, 1991); *Natural Resources Defense Council* v. *EPA,* 907 F.2d 1146, 1171–72 (D.C. Cir. 1990) (dissenting opinion). EPA cannot but take notice of two facts relevant here to whether Reynolds'' process, as operated, provides treatment capacity which is protective of human health and the environment. First, because EPA has delisted the residues (see n.1 above and section V.A. below), Reynolds now disposes much of the treatment residue in a subtitle D unit. Although this unit appears to have adequate leachate collection and monitoring to prevent any immediate harm at the site, the monofill still lacks the safeguards subtitle C landfills have—such as double liners, financial responsibility, and more extensive monitoring and leachate collection. Second, Reynolds is placing some of the treatment residues as fill material in an unmonitored, unsupervised setting and no regulatory Agency has directly evaluated the potential for harm this type of disposal could be posing. While this use or disposal practice is presently legal under federal law, since the material is delisted, the Agency cannot say with any certainty (see RCRA sections (d)(1), (e)(1) and (g)(5)) that this practice protects human health and the environment. RCRA section 3004 (h)(2).[11]

EPA believes that treatment normally is adequate to be considered to be both minimizing threats to human health and the environment and to be protective of human health and the environment where there is substantial destruction of environmentally available toxics and/or substantial reduction of the mobility of toxic residuals. See 125 Cong. Rec. at S 9178 (statement of Sen. Chaffee introducing the provision which became RCRA section 3004(m) indicating that the land disposal restriction treatment standards are not to be technology forcing.) In almost all cases, simply meeting the treatment standards for the waste achieves this result. But where treatment is not operating so as to reduce environmental availability of key hazardous constituents appreciably more than disposal of untreated spent potliners, and where total and leachable arsenic may actually be increased by the treatment process, the Agency must question the adequacy of the treatment. Further, where disposal in subtitle C units may be safer than disposal of the residues in subtitle D landfills or in uncontrolled units, the Agency must seriously question the environmental consequences of expanded treatment operations at Gum Spring should the national capacity variance not be extended. The corrosivity and mobility of toxic constituents in the Gum Springs leachate, and the concentration of hazardous constituents in the leachate and runoff from the fill area, compels the Agency to find that the treatment process, as it is presently performing and as it includes disposal in non-subtitle C units, is not satisfying the requirement that threats posed by land disposal of the wastes be minimized and that the available treatment capacity be protective of human health and the environment.

In making this finding, EPA stresses that it is specific to this set of facts. The Agency does not mean to revisit the question of whether LDR standards should be technology-based or risk-based.[12] Nor should this action be read as automatically invoking risk-based levels to supplant technology-based treatment standards, or to vitiate a treatment standard whenever treatment performance turns out in practice to be less than predicted by analytic protocols such as the TCLP. Nor is land disposal

[11] As described in the text above, leachate and runoff levels of hazardous constituents from the fill area are presently significantly lower than from the landfill, although the levels are still of potential environmental concern (particularly given the unsecured disposal setting) and are higher than the K088 wastewater treatment standards. The lower levels undoubtedly result from the buffering effect of the acid mining material at the site. However, this buffering may not be permanent. In addition, it is important to evaluate total concentrations of hazardous constituents in the fill material because of the different types of exposure pathways (for example, air-borne particulate) that can result when wastes are placed in this type of uncontrolled setting. See generally 60 FR at 11732 (March 2, 1995) (proposal to prohibit use of hazardous waste as fill material). Reevaluation of this use will be one of the first matters EPA focuses on as it reexamines the decision to delist the K088 treatment residue. See section V.A. in the text.

[12] As EPA has stated many times, the Agency's ultimate preference is to develop risk-based levels that reflect levels at which threats to human health and the environment are minimized, with the reasonable degree of certainty noted by the statute (RCRA section 3004(d)(1)). See, e.g. 56 Fed. Reg. at 6641; See also 60 FR 66344, December 21, 1995, the so-called ''HWIR'' proposal. The risk-based levels would then cap technology-based standards.

typically to be taken into account in establishing an LDR treatment standard. *American Petroleum Inst.* v. *EPA,* 906 F. 2d 729, 734–37 (D.C. Cir. 1990). In fact, technology-based standards remain the best presently-available means of reducing threats posed by land disposal of hazardous wastes. Our finding here is a narrow response to particular facts: there has been on-going, consistent failure (in certain key aspects) of a treatment technology, and the failure is of a magnitude that, under the circumstances, disposal of untreated wastes in Subtitle C landfills is preferable to treatment of the wastes by this process followed by land disposal in non-subtitle C disposal units. Under these unusual circumstances, threats have not been adequately minimized and ultimate protectiveness has not yet been achieved.

A consequence of this finding is that the capacity for treatment that is protective is inadequate for spent potliners at this time. Since the Reynolds process provides virtually all available capacity, and EPA is finding that the process as it is presently performing does not protect human health and the environment (see RCRA section 3004 (h) (2)), the remaining treatment capacity is far below that needed to accommodate the volume of potliners being generated. Therefore, an extension of the existing national capacity variance is required.

IV. For How Long Should the National Capacity Variance Be Extended?

EPA continues to believe that Reynolds' process is inherently sound, and should be able to treat potliners in a manner that minimizes the threats their land disposal can pose. The process has been demonstrated to effectively destroy significant portions of the cyanide and PAHs present, and the stabilization technology has generally been effective in reducing soluble fluorides.[13] In fact, the high degree of leaching presently occurring may be due to the high pH of each of the materials being combined in the treatment process (i.e., spent potliner, limestone, and brown sand). Spent potliner alone has been found to raise the pH of deionized water to 11.2 to 12.0.[14] Brown sand is an alkaline mud produced from the extraction of alumina from bauxite ore with sodium hydroxide, and contains significant concentrations of highly caustic sodium hydroxide residuals. The high alkalinity of brown sand together with SPL and limestone provides no neutralization of the inherent alkalinity; in confirmation, the pH of deionized water leach solutions of the Reynolds' treatment residue has been found to range from 11.9 to 12.2.[15] This is a problem that may be rectified soon by using a different type of sand and keeping the pH of the treated solids within a particular range.

EPA is also aware of Reynolds' substantial investment of capital and expertise into developing this treatment process. The company also has complied with all applicable regulations in developing, implementing, and operating its process, seeking and obtaining RCRA permits for its process, and obtaining a delisting for the treatment residue. The company has also been complying with the terms of the delisting, which only require evaluation of newly-generated treatment residues for leachable cyanide, fluoride, PAHs, and TCLP metals. The Agency does not intend to take precipitous action that irrevocably undermines use of this still-promising treatment technology, or that discourages needed development of and investment in other treatment technologies (for potliners or for other hazardous wastes).

It is EPA's present judgment that the immediate problems with Reynolds' process could be resolved relatively quickly, possibly (as noted above) by substitution of different sand and other means of pH control. Brown sand functions only as a flux in the process to avoid the formation of lava like blockages in the kiln. Other high silica materials should perform equivalently as a flux, but should not contain or result in a highly alkaline treatment residue that promotes the mobility of hazardous constituents of concern. Process modifications and test trials of a sand substitute by Reynolds are planned or are underway. The Agency projects that six months may be required to complete these tests and data evaluation, and is, therefore extending the period of the national capacity variance until July 8, 1997. In the event that replacing the brown sand does not lower the pH, or that the lower pH does not eliminate the problems of the generation of a corrosive leachate high in hazardous constituents, EPA will evaluate other technical options to provide for treatment of K088 that adequately minimizes threats posed by land disposal and proves ultimately to be protective. The Agency may extend the capacity variance for up to an additional nine (9) months, should process modifications be determined to have not resulted in adequate treatment. The Agency will make available to the public for comment any data or additional information it receives in response to this capacity extension.

V. Other Issues

A. Delisting

As noted above, EPA has delisted the residues from Reynolds' treatment process, relying in significant part on use of the TCLP as a predictor of actual environmental performance. (56 FR 67197, December 30, 1991.) These predictions have proven incorrect, at least in the short-term. EPA also did not anticipate, or directly evaluate the use of the treatment residue as fill or road construction material when it granted the delisting.

Authority to evaluate delistings is presently delegated to EPA Regional offices and to authorized States. EPA's Region 6 is presently evaluating the terms of the existing delisting and plans regulatory action regarding the delisting during the spring of 1997.

EPA notes that a determination that the Reynolds process (or any other treatment process) is treating sufficiently to be considered to minimize threats to human health and the environment does not necessarily mean that the residues from the treatment process would have to remain delisted. See, e.g. the text of RCRA section 3004(m)(2) which speaks directly of treatment residues which have been treated to minimize threats then being disposed in subtitle C disposal units. Thus, should EPA find that the Reynolds process is performing sufficiently well to satisfy land disposal restriction requirements, i.e. that the potliners have been treated sufficiently to allow their land disposal, the finding would not necessarily require retention of the current delisting. Conversely, and for the same reasons, a potential finding that the treatment residues should be relisted as hazardous wastes would not preclude a finding that the treatment is nevertheless sufficient to satisfy the requirement that substantial reductions in toxicity and mobility sufficient to minimize threats occur so that land disposal of the treatment residue is permissible.

[13] EPA notes, however, that it may have to ultimately revise the treatment standard for fluoride, which is based on the performance of Reynolds' process. EPA will be seeking more information to more fully characterize the performance of the treatment process for fluoride during the extended national capacity variance period.

[14] Attachments to December 9, 1996 letter from Pat Grover of Reynolds Metal Company to Michael Shapiro, Director, Office of Solid Waste. Results cited are from the analysis of 100 grams of solid material leached with 2–Liters of deionized water (a 1:20 ratio).

[15] Id.

B. Competing Treatment Technologies as BDAT

As discussed above, treatment technologies other than Reynolds' exist which could satisfy the existing treatment standards. Other technologies are being developed, and some of these recover resources from the potliner (as well as destroying hazardous constituents). See ''Final BDAT Background Document for Spent Potliners from Primary Aluminum Reduction—K088'', dated February 1995.

EPA is presently being urged to designate these recovery technologies as exclusive BDAT. See Supplemental Submission in Support of Amendment of Land Disposal Restrictions Phase III—Spent Potliners. Although EPA is still studying these submissions, the Agency notes that it does not regard its proper role as picking winners and losers among different treatment technologies, so long as the treatment technologies are achieving substantial reductions in toxicity and mobility of hazardous constituents sufficient to find that threats are being adequately minimized. (See, for example, 57 FR 37198 (August 18, 1992), where EPA chose to base treatment standards on performance of a technology which substantially reduces concentrations of hazardous constituents but does not perform as well as certain other available treatment technologies). Further, the Agency has established the Universal Treatment Standards (268.40) and has indicated a preference to use numerical limits whenever possible, to allow any legitimate treatment process to meet the standards.

EPA notes, in addition, that the Reynolds process is presently the only treatment process offering any appreciable treatment capacity for K088. Reynolds also took the initiative and developed and marketed this technology in advance of the land disposal prohibition for spent potliners. Given these facts, plus the technology's ability to achieve substantial reductions in the waste's toxicity through destruction of hazardous constituents, EPA does not initially believe it should disallow the process as a valid treatment technology (assuming the present operational problems are resolved). EPA notes moreover that as a legal matter, the LDR treatment standards are *not* intended to be technology-forcing (see 125 Cong. Rec. S 9178 (July 25, 1984) (statement of Sen. Chaffee)), but *are* intended to force utilization of existing treatment capacity where that capacity can significantly reduce wastes' toxicity and mobility. S. Rep. No. 284, 98th Cong. 1st sess. at 19. Thus, as a matter of both policy and law, the Agency is disposed to retaining treatment standards for spent potliners that are achievable by a number of treatment technologies, and to try and hasten the use of currently existing technologies provided their performance and operation adequately minimize threats posed by land disposal of the potliners. [16]

Thus, the Agency's initial inclination is not to amend the current treatment standard for spent potliners to establish any particular technology as BDAT.

VI. Disposal of Potliners During National Capacity Variance Period

Section 3004(h)(4) states that during periods of national capacity variances (and case-by-case extensions), hazardous wastes subject to those extensions that are disposed in landfills (and surface impoundments) may only be so disposed if the landfill (or impoundment) is in compliance with the minimum technology requirements of section 3004(o). EPA has interpreted this language as requiring the individual unit receiving the waste to be in compliance with those so-called minimum technology standards, an interpretation sustained in *Mobil Oil* v. *EPA,* 871 F.2d 149 (D.C. Cir. 1989). In addition, EPA has indicated that this requirement only applies to wastes that are still hazardous when disposed. 55 Fed. Reg. at 22659–60 (June 1, 1990).

Putting this together, this means that during the extended period of the national capacity extension, generators other than Reynolds will dispose of K088 wastes in landfill units that satisfy the minimum technology requirements of section 3004(o). Reynolds' treatment residue is not subject to these requirements because it has been delisted, and so is not a hazardous waste. Should there be action reclassifying that treatment residue as a hazardous waste and should the national capacity extension still be in effect, then such residues would also be required to be disposed in landfill units satisfying minimum technology requirements (assuming that landfill disposal is utilized).

VII. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ''significant.'' The Order defines a ''significant'' regulatory action as one that ''is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The Agency and OMB consider today's final rule to be nonsignificant as defined by the Executive Order and therefore not subject to the requirement that a regulatory impact analysis has to be prepared. Today's rule delays for six months the imposition of treatment standards for spent aluminum potliners that were estimated previously by EPA to cost between $11.9 million and $47.3 million (61 FR 15566 and 15591, April 8, 1996). Thus, today's rule results in net savings over this period of time and prevents any potential hardship that would otherwise result from the lack of available thermal treatment capacity for spent aluminum potliner.

B. Unfunded Mandates Reform Act

Under Section 202 of the Unfunded Mandates Reform Act of 1995, signed into law on March 22, 1995, EPA must prepare a statement to accompany any rule where the estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, will be $100 million or more in any one year. Under Section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objective of the rule and is consistent with the statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly impacted by the rule.

EPA has presented an analysis of the costs of implementing the prior LDR Phase III rule (61 FR 15566, April 8, 1996) and has determined that this rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate. As stated above, the private sector is not expected to incur costs exceeding $100

[16] The Senate Report also states that ''[i]t is not intended, that a generating industry, for example, could be allowed to continue to have its wastes disposed of in an otherwise prohibited manner solely by binding itself to using a facility which has not been constructed.'' S. Rep. No. 284, 98th Cong. 2d sess. at 19.

million per year due to the delayed implementation of the land disposal restrictions for K088 wastes. EPA has fulfilled the requirement for analysis under the Unfunded Mandates Reform Act.

C. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's Federal Register. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VIII. Immediate Effective Date

EPA has determined to make today's action effective immediately. The Agency believes that there is good cause to do so, within the meaning of 5 U.S.C. section 553(b)(B). The current regulatory prohibition is scheduled to take effect on January 8, 1997. Should the Agency fail to act before that time, EPA believes that actions will occur which are both contrary to the objectives of the Land Disposal Restriction statutory provisions, and also environmentally worse than disposal of untreated hazardous waste in subtitle C units. Specifically, if the prohibition takes effect, virtually the entire national volume of potliners will be sent for treatment and disposal to the Reynolds facility. This is because, as set out in this Notice, the Reynolds process is presently operating poorly and because the treatment residues from that process are disposed in units other than subtitle C units. The result is treatment that does not minimize threats and disposal which could be less protective than disposal of untreated wastes in subtitle C units.

Good cause to forego notice-and-comment procedures exists where use of those procedures is contrary to the public interest. 5 U.S.C. section 553(b)(B). EPA believes it would be contrary to the public interest to force treatment of many thousands of tons of hazardous waste which could result in net environmental detriment, as set out in the preceding paragraph. For essentially the same reasons, EPA finds that use of notice-and-comment procedures would be impractical (again within the meaning of 5 U.S.C. section 553(b)(B)).

Finally, EPA notes that it has endeavored to provide actual notice and opportunity for comment on this action. EPA has held a number of meetings with both Reynolds and affected primary aluminum generators (noted in the record for this action), solicited and accepted written submissions from these entities (again part of the administrative record), and made each sides' submissions available to the other for response. The Agency has also had contacts (albeit more limited) with representatives of the hazardous waste treatment industry and the environmental community. Notice and opportunity for comment of course satisfies all procedural requirements of the Administrative Procedure Act (as to parties receiving such notice). 5 U.S.C. section 553(b).

For all of these reasons, EPA finds that this rule may be made effective immediately. In addition, because there is good cause to forego notice-and-comment procedures, the rule may take effect upon promulgation without prior submission of the rule to the Congress. 5 U.S.C. section 808. EPA will thereafter submit the rule to Congress, as required by 5 U.S.C. section 801(a).

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

Dated: January 8, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. Section 268.39 is amended by revising paragraph (c) to read as follows:

§ 268.39 Waste specific prohibitions—spent aluminum potliners; reactive; and carbamate wastes.

* * * * *

(c) On July 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal on July 8, 1997.

* * * * *

[FR Doc. 97–878 Filed 1–10–97; 9:32 am]

BILLING CODE 6560–50–P

Federal Register

Monday
May 12, 1997

Part II

Environmental Protection Agency

40 CFR Part 148, et al.

Land Disposal Restrictions Phase IV: Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions; Final Rule

Second Supplemental Proposal on Treatment Standards for Metal Wastes and Mineral Processing Wastes, Mineral Processing and Bevill Exclusion Issues, and the Use of Hazardous Waste as Fill; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261, 268, and 271

RIN 2050 AE05

[FRL 5816–5]

Land Disposal Restrictions—Phase IV: Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions

AGENCY: Environmental Protection Agency (EPA, the Agency).

ACTION: Final rule.

SUMMARY: The Agency is finalizing treatment standards for hazardous wastes generated from wood preserving operations, and is making a conforming amendment to the standard for wastes from production of chlorinated aliphatics which carry the F024 hazardous waste code. These treatment standards will minimize threats to human health and the environment posed by these wastes. In addition, this final rule revises the land disposal restrictions (LDR) program to significantly reduce paperwork requirements by 1.6 million hours. This rule also finalizes both the decision to employ polymerization as an alternative method of treatment for certain ignitable wastes as well as the decision not to ban certain wastes from biological treatment because there is no need to classify these wastes as ''nonamenable.'' It also clarifies an exception from LDR requirements for de minimis amounts of characteristic wastewaters. Finally, this rule excludes processed circuit boards and scrap metal from RCRA regulation which is intended to promote the goal of safe recycling.

EFFECTIVE DATE: This final rule is effective on August 11, 1997 except §§ 148.18(b) and 268.30(b), which are effective on May 12, 1999.

ADDRESSES: The public docket for this rulemaking is available for public inspection at EPA's RCRA Docket, located at Crystal Gateway, First Floor, 1235 Jefferson Davis Highway, Arlington, Virginia. The regulatory docket for this final rule contains a number of background materials. To obtain a list of these items, contact the RCRA Docket at 703–603–9230 and request the list of references in EPA Docket #F–97–PH4F–FFFFF.

FOR FURTHER INFORMATION CONTACT: The RCRA Hotline between 9:00 a.m.–6:00 p.m. EST, toll-free, at 800–424–9346; (703) 412–9810 from Government phones or if in the Washington, DC local calling area; or 800–553–7672 for the hearing impaired. For more detailed information on specific aspects of the rulemaking, contact the Waste Treatment Branch (5302W), Office of Solid Waste (OSW), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460; phone (703) 308–8434. For technical information on the treatment standards for wood preserving wastes, ask for Nick Vizzone; for information on paperwork reduction and clean-up of Part 268, call Rhonda Minnick at (703) 308–8771 or Nick Vizzone at (703) 308–8460. Contact Kristina Meson at (703) 308–8488 for information on the exclusions for scrap metal and shredded circuit boards. Call Pan Lee at (703) 308–8478 for information on the capacity analyses. For questions on the regulatory impact analyses, contact Paul Borst at (703) 308–0481. For other questions, call Sue Slotnick at (703) 308–8434.

SUPPLEMENTARY INFORMATION:

Availability of Rule on Internet

This rule is available on the Internet. Please follow these instructions to access the rule electronically: From the World Wide Web (WWW), type http://www.epa.gov/rules and regulations. In addition, several technical background documents contained in the docket supporting this rule will be available on the Internet at http://www.epa.gov/offices and regions/oswer.

Table of Contents

I. Background

In the 1984 Hazardous and Solid Waste Amendments (HSWA) of the Resource Conservation and Recovery Act (RCRA), Congress specified that land disposal of hazardous waste is prohibited unless the waste meets treatment standards established by EPA. HSWA requires that treatment standards must substantially diminish the toxicity or mobility of hazardous waste, so that short and long term threats to human health and the environment are minimized. The treatment standards are part of the Land Disposal Restrictions Program.

Today's final rule is one part of the collection of land disposal restrictions (LDR) rules known as ''Phase IV.'' They are the latest in a series of LDR rules that establish treatment standards for newly listed and identified wastes, and that resolve other hazardous waste matters.

EPA proposed the Phase IV rule in two proposed rules (60 FR 43654, August 22, 1995; and 61 FR 2338, January 25, 1996), and subsequently issued a Notice of Data Availability on Phase IV issues (61 FR 21418, May 10, 1996). The attached rule finalizes portions of those earlier proposals. Other proposed revisions are in a second supplemental proposed rule elsewhere in this **Federal Register**.

EPA estimates that the directly measurable benefits associated with the land disposal restrictions treatment standards in this rule are limited relative to the costs that may be incurred. Therefore, the relative priority of addressing these risks could be questioned. However, we do not believe, for this specific action, that a simple cost effectiveness measure alone provides a sufficient basis for decision-making. As discussed below, the preference for permanent treatment of hazardous wastes is part of the basic policy structure which Congress enacted when it amended RCRA in 1984, and reflects concern over the technological uncertainties regarding risks and long term protectiveness of land disposal and the intent to assure that waste management practices are protective for future generations.

The whole premise of the LDR legislation is that risks posed by land disposal of hazardous wastes are inherently uncertain to evaluate and that land-based units are incapable of long term containment. Land disposal units (such as landfills, surface impoundments, and waste piles) are engineered units that can and have failed in the past with significant consequences to human health and the environment. For this reason, Congress required that hazardous wastes be pretreated before disposal by ''treatment [which] should be the best that has been demonstrated to be achievable.'' Congressional Record of July 25, 1984 (S9178). The technology-based approach of the land disposal restrictions provides a measure of insurance against the potential for failure in these land based units.

Given these facts, and evident Congressional intent, EPA continues to believe that the LDR prohibitions and treatment standards are justified in many instances. EPA sets treatment standards that reduce toxicity and mobility of hazardous constituents (or require recycling), and EPA also requires that the treated wastes be placed in reasonably secure land disposal units. However, EPA does believe that, in some situations, the current LDR rules may not provide the optimum regulatory approach. In those situations, EPA will look to other mechanisms to address those relatively low risk scenarios.

II. Potentially Regulated Entities

Entities potentially regulated by this final rule vary according to the section of the rule. The following table breaks down the categories industries that may be regulated according to each major section. The table is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated.

TABLE OF ENTITIES—POTENTIALLY AFFECTED BY THE PHASE IV FINAL RULE

Section of the rule	Category	Examples of entities potentially affected
Addition to 40 CFR §268.40—Treatment standards for wood preserving wastes.	Wood Preserving Hazardous Waste Generators.	Any person that generates over 100kg of F032, F034, or F035.
	Hazardous Waste Treatment Facilities ..	Facilities that treat F032, F034, or F035.
Modifications to 40 CFR §268.7—Waste Analysis and Recordkeeping.	Hazardous Waste Generators	Any person who generates over 100kg of prohibited hazardous waste, or over 1 kg of acute hazardous waste in a calendar month.
	Hazardous Waste Treatment Facilities ..	Facilities permitted under 40 CFR Part 270 for incinerators, surface impoundments, and/or land treatment facilities.
	Hazardous Waste Disposal Facilities	Facilities permitted under 40 CFR Part 270 for landfills, and/or injection wells.
Addition of §§261.4(a)(12) and 261.4(a)(13)—Exclusion from the definition of solid waste for excluded scrap metal and shredded circuit boards.	Scrap Metal and/or Circuit Board Generators.	Persons who generate scrap metal, as defined under 40 CFR §261.1(c)(6) (e.g., Die Casters, Metal Stampers, Machining Parts).
	Scrap Metal Salvage and Storage Yards.	Facilities that store scrap metal, but do not generate or recycle.

TABLE OF ENTITIES—POTENTIALLY AFFECTED BY THE PHASE IV FINAL RULE—Continued

Section of the rule	Category	Examples of entities potentially affected
Point of generation; Decision not to ban nonamenable wastes.	Scrap Metal Recyclers	Facilities that process scrap metal as defined in 40 CFR § 261.1(c)(10).
	Circuit Board Shredders	Facilities that shred circuit boards.
	Hazardous Waste Generators	Any person who generates over 100kg of prohibited hazardous waste, or over 1 kg of acute hazardous waste in a calendar month.
	Hazardous Waste Treatment Facilities	Facilities that perform biological treatment in surface impoundments.

III. New Land Disposal Restrictions Treatment Standards for Wastes From Wood Preserving (Waste Codes F032, F034, and F035) and Revised Treatment Standard for Chlorinated Aliphatics Waste (F024)

A. Summary

EPA is promulgating UTS limits as the treatment standards for the hazardous constituents in wood preserving wastes F032, F034, and F035, as proposed. (See 60 FR 43654, August 24, 1995; 60 FR 546451, October 25, 1995; and 61 FR 21417, May 10, 1996.) In addition, EPA is establishing a compliance alternative for dioxin and furan (D/F) constituents in nonwastewater and wastewater forms of F032, namely allowing use of a method of treatment—combustion—for these constituents. Thus, if this method of treatment is utilized, combustion residues would not have to be analyzed for D/F constituents. The alternative is only available for F032 residues from units subject to the standards in Part 264 subpart O or Part 266 subpart H, or from interim status incinerators which have made a specific demonstration that they operate in a manner equivalent to a Part 264 or Part 266 combustion unit. EPA also is amending the treatment standard previously established for F024 wastes. EPA is adopting the alternative compliance standard for F032 as the standard for F024. The practical effect of this change will be to limit somewhat the type of facilities that can combust F024.

B. Determination of BDAT

1. General

EPA has determined that combustion (CMBST) represents BDAT for organics in nonwastewater forms of F032 and F034 (i.e., the treatment standards are based on the performance of combustion technology). For organics in wastewater forms of F032 and F034, EPA has determined that a single treatment technology or a normal wastewater treatment train can meet the treatment standards promulgated today. As explained in the *Final Best Demonstrated Available Technology Background Document for Wood Preserving Wastes—F032, F034, and F035* (Wood Preserving Background Document for this rule), EPA has determined that wastewater treatment technologies such as biological treatment, steam stripping, carbon adsorption, or combinations of these technologies can treat organics regulated in F032 and F034 to the concentration levels promulgated today. These wastewater treatment technologies are available to, or in use at, existing wood preserving facilities.

For metals in nonwastewater forms of F032, F034, and F035, EPA has determined that the promulgated treatment standards can be based on (slag) vitrification for arsenic and on stabilization for chromium (total). The treatment standard for arsenic also can be achieved using stabilization treatment (see the Wood Preserving Background Document). For wastewater forms of F032, F034, and F035, EPA has determined that treatment levels can be achieved by lime addition followed by sedimentation and filtration for arsenic, and by chemical precipitation followed by sedimentation for chromium. (Of course, since no method of treatment is required to be used under the promulgated treatment standards, any type of treatment other than impermissible dilution may be used to achieve these concentration levels.)

2. F032 Wastewaters

Some commenters felt that the limits proposed for D/F in F032 wastewaters, namely the existing UTS limits, were not achievable. Commenters felt that EPA's own wastewater characterization data showed that the D/F concentrations in untreated F032 wastewaters were orders of magnitude higher than the untreated concentrations in the wastewater samples used in establishing the UTS limits. They also emphasized that biological treatment normally removes D/F constituents in the order of 78% of influent pollutants and thus, may yield an effluent with higher concentrations than those proposed by EPA.

EPA has examined the available data on the characterization of F032, prevailing management practices for wastewaters as difficult to treat as F032, and for wastewaters managed by biological treatment systems. EPA acknowledges that the concentrations of D/F in F032 wastewaters, as generated, are much higher than those treated by the biological treatment system supporting the existing UTS limits for D/F. However, based on the available data on wastewater treatment practices at wood preserving facilities, EPA believes that prevailing wastewater treatment practices can be optimized or upgraded to meet the D/F limits promulgated for F032 wastewaters. As explained in the BDAT Background Document, pretreatment steps can be, and are, used to reduce influent concentrations to biotreatment units to levels comparable to those on which the treatment standards are based, and EPA believes the same level of performance is achievable for wood preservers. (See the wood preserving background document and the BDAT response to comments document for additional discussion on EPA's rationale and data review.)

Another commenter asked EPA to withdraw its proposal for the regulation of D/F constituents in F032 wastewaters. The commenter believes that the regulation of PCP and polynuclear aromatic hydrocarbons (PAH) can ensure the reduction of D/F in F032 wastewaters. The commenter also submitted data with regard to concentrations of D/F, PCP, and PAH analytes in two effluent F032 wastewaters treated by activated carbon adsorption. These data appear to support the commenter's statement that monitoring of PCP and PAHs may serve as a surrogate candidate for the reduction of D/F levels in these particular effluent wastewaters. However, EPA lacks data to determine if the alternative surrogate constituents

proposed for regulation can also serve as surrogates for monitoring the treatment of D/F in wastewater treatment effluents resulting from other treatment technology trains that may achieve the proposed UTS, and has therefore chosen not to adopt this suggestion.

3. F034 Wastes

Some commenters objected to EPA's proposed regulation of arsenic and chromium in F034 wastes, but their arguments were not persuasive. One argument was that F034 wastes typically do not contain arsenic and chromium and that they should only be regulated if chromated copper arsenate (CCA) is used at the facility generating F034 at concentrations exceeding treatment standards. EPA's data supporting the listing of F034 wastes in fact show that arsenic and chromium are frequently present in F034. (See *Background Document Supporting the Final Listing for Wastes from Wood Preserving Processes,* November, 1990.) Further, EPA determined that these two metal constituents are toxic and that their concentrations in untreated F034 wastes also supported the listing of these wastes as RCRA hazardous waste F034. (See *Background Document Supporting the Final Listing for Wood Preserving Wastes from Wood Preserving,* November, 1990; 55 FR 50458–59, December 6, 1990; and 53 FR 53299–300, Table 13, December 30, 1988.) Because treatment of organic constituents in F034 may not reduce the mobility of these metals, EPA is promulgating treatment standards that will assure that the mobility of these metal constituents is reduced prior to disposal, consistent with a core LDR requirement to develop treatment standards which ''substantially reduce the likelihood of migration of hazardous constituents from the waste * * *''. RCRA section 3004(m)(1). Furthermore, EPA points out that treaters of this waste can address the monitoring of these metal constituents in their permit Waste Analysis Plans (WAP). See 55 FR at 22669, June 1, 1990; *Chemical Waste Management* v. *EPA,* 976 F.2d 2, 31 (D.C. Cir. 1992); cert. denied 113 S.Ct. 1961 (1993).

4. F035 Wastes

Other commenters were concerned with the achievability of arsenic limits in wastewater and nonwastewater forms of F035. One commenter was concerned that EPA was mandating the use of vitrification as opposed to setting a numerical limit. Other commenters felt that vitrification is an inappropriate technology for setting arsenic treatment limits and that EPA should set, instead, UTS limits that are based on the performance of stabilization technologies.

None of these commenters have submitted treatment performance data supporting their inability to meet the proposed UTS limits, nor have they documented that their waste will behave differently when treated by stabilization or vitrification practices. The treatment technology supporting numerical limits for arsenic in nonwastewater forms of F032 is vitrification. However, EPA believes that arsenic limits can also be achieved via stabilization based on treatment data supporting the promulgation of the UTS limit for arsenic (see *Final Best Demonstrated Available Technology (BDAT) Background Document for Universal Standards Volume A: Universal Standards for Nonwastewater Forms of Listed Hazardous Wastes*). In addition, today's promulgated treatment levels do not preclude the use of other treatment alternatives such as stabilization, as long as such alternatives do not constitute land disposal or impermissible dilution. As a result, EPA is promulgating treatment limits for arsenic as proposed.

C. Alternative Combustion Treatment Standard for Dioxins and Furans in F032

1. Today's Action

This notice establishes combustion (defined at 40 CFR 268.42, Table 1, CMBST) as an alternative compliance treatment standard option for D/F in F032. Combustion is the basis for the D/F numerical limits, and properly conducted combustion should effectively destroy D/F constituents, If this method of treatment is used to treat F032 in certain specified combustion devices, there is no need to monitor compliance with the D/F numerical limits established for D/F constituents. However, all other organic and metal constituents will require monitoring prior to disposal. This approach is patterned after EPA's promulgation of a similar alternative treatment standard for D/F in F024 (wastes from production of chlorinated aliphatics). See 55 FR 22580–81, June 1, 1990. EPA discussed this approach in detail in a Notice of Data Availability (NODA) that appeared in the **Federal Register** on May 10, 1996 (61 FR 21418).

In general, EPA is providing a method of treatment as an alternative to actual D/F measurement that will be equally protective, and will assure availability of effective treatment for these wastes. The alternative, namely not providing the alternative treatment standard, leaves open the real possibility of these wastes being refused treatment, an environmentally worse result. EPA also notes that its experience with F024 waste treatment, for which there is a parallel treatment regime, has been satisfactory: these wastes are effectively treated by combustion technology, and sufficient treatment capacity has remained available once EPA promulgated the alternative treatment standard which did not require analysis of D/F in treatment residues.

2. Background

EPA proposed numerical treatment standards for F032 constituents on August 22, 1995. Several members of the regulated community expressed concern that EPA's proposal to regulate D/F constituents in F032 may result in problems finding treatment facilities willing to accept the waste. D/F are very controversial hazardous waste constituents that often trigger public opposition if documented at any concentrations regardless of the estimated risks presented. D/F monitoring also adds significantly to monitoring costs. See generally, 55 FR at 22580–81. Commenters emphasized that owners and operators of combustion devices had informed them that their combustion facilities will not accept F032 if EPA requires the monitoring of D/F in combustion residues. Further, commenters noted that if combustion is conducted properly, analysis of D/F is unnecessary.

The American Wood Preservers Institute (AWPI) and the Penta Task Force asked EPA to consider establishing an alternative treatment standard that sets a method of treatment as an alternative to the numerical limits for D/F in F032.

The Penta Task Force submitted data to show that the concentrations of D/F in F032 are substantially lower than those EPA reported in the F032 Listing Background Document. They stated their belief, along with AWPI, that D/F in F032 should be regulated like D/F in F024.

3. Summary of Phase IV NODA for F032

EPA examined these new data and concerns and proposed in the NODA to codify combustion (CMBST) as an alternative method of treatment for D/F in F032. EPA also requested comments on potential regulatory controls on combustion devices to assure that D/F destruction is conducted only in well-designed and well-operated combustion devices. EPA proposed three regulatory suboptions for implementing a CMBST standard. One suboption was to merely apply the existing F024 alternative

combustion treatment standard to F032 with applicable regulatory controls in Part 264, 265, or 266. The second suboption was to revise the alternative D/F standard for F024, and establish for F024 and F032, a CMBST standard alternative, that would limit the combustion of F032 and F024 to RCRA permitted or interim status combustion devices which have demonstrated the ability to achieve a dioxin toxicity equivalent (TEQ) air emission discharge limit of 0.2 ng/dscm. The third suboption was to revise the F024 standard, and to establish an alternative standard for F024 and F032 that limits the combustion of F024 and F032 to RCRA permitted combustion devices. (In all of these options, and in today's final rule, the restriction on types of devices applies only to facilities opting to comply with the D/F standard without analyzing treatment residues.)

4. Review of Major Comments on Phase IV NODA and Promulgation of A Modified Version of Suboption Three

The majority of commenters supported the proposed compliance alternative setting CMBST as a method of treatment for D/F. In addition, the majority of commenters preferred suboption 1 (i.e., allow combustion in a RCRA interim status or permitted device) to ensure that combustion is conducted in well-designed and well-operated devices. A significant number of commenters also were concerned that adoption of suboption 3 may have excluded the use of well-designed and well-operated interim status combustion devices operated under the Part 266 rules applicable to boilers and industrial furnaces.

The majority of commenters argued that it would be premature for the Agency to adopt suboption 2 whereby a D/F emission limit of 0.2 ng/dscm TEQ would be established given that the Agency has only recently proposed such an emission standard for hazardous waste burning incinerators, cement, and lightweight aggregate kilns under the maximum achievable control technology (MACT) rule. See 61 FR 17358 (April 19, 1996).[1] The Agency believes that this concern is warranted given that EPA has received substantial comments on whether that standard is appropriate for those devices and has not made a final decision as to an appropriate standard.

The Agency believes that suboption 3 (i.e., allow combustion of FO24 and FO32 only in RCRA-permitted devices), as proposed, was too restrictive. EPA agrees with the commenters that interim status boilers and industrial furnaces operated under Part 266 should qualify for the proposed alternative CMBST compliance standard as well. These devices are subject to interim status combustion controls which limit carbon monoxide (CO) or total hydrocarbon levels (THC) in combustion gases, thus ensuring that the devices operate under good combustion conditions. The standards also can include explicit control of D/F under specified conditions (see section 266.103 (c)(1)). Although these controls do not provide the explicit demonstration of destruction of toxic organics in the waste feed that the DRE (Destruction and Removal Efficiency) for permitted combustion devices standard provides, the Agency believes that they establish good combustion, and may, in some cases, provide even better assurance of operations under good combustion conditions than the bare DRE standard.

Accordingly, the Agency believes that it is not necessary to restrict burning to RCRA-permitted devices because boilers and industrial furnaces operating under interim status are required to operate under good combustion conditions which should ensure destruction of toxic organic compounds in the waste feed.

The Agency acknowledges that ensuring that the combustion device operates under good combustion conditions (i.e., either under a DRE standard or by limiting carbon monoxide (CO) and total hydrocarbon levels (THC) in stack gas) may not necessarily ensure control of D/F emissions. This is because D/F can be formed in the post-combustion zone of the device—in the duct work and particulate matter control devices that operate at temperatures above 350°F. Boilers and industrial furnaces operating under these conditions must comply with specific D/F emission standards. (See 40 CFR 266.103(c)(1) and 266.104(e).) In addition, under existing Omnibus permit authority, permit writers have the authority, if the permitting authority demonstrates that it is necessary to protect human health and the environment (RCRA section 3005(c)(3)), to impose operating requirements more stringent than those authorized by regulations. This authority could be invoked (assuming the requisite showing is made) to justify controls on permitted hazardous waste incinerators.

EPA currently lacks similar Omnibus permit authorities for incinerators regulated under Part 265, Subpart O. In addition, unlike the standards for interim status boilers and industrial furnaces, the interim status standards for hazardous waste incinerators do not contain controls on good combustion (i.e., CO or THC controls), a DRE requirement, or explicit standards for D/F. EPA is concerned, therefore, that the combustion of F032 and F024 in Part 265 incinerators may not consistently achieve the treatment objectives sought by the alternative combustion compliance treatment standard. As a result, EPA cannot support the promulgation of suboption 1 for incinerators operated under Part 265. (See also 265.352(a), forbidding combustion of the acutely hazardous D/F-containing wastes in interim status hazardous waste incinerators.)

Although EPA's finding here is that the interim status incinerator standards may be inadequate for qualifying for a CMBST treatment standard for D/F, EPA believes that on an ad-hoc basis, a site-specific determination can be made pursuant to 40 CFR Part 268.42(b) to extend the availability of a ''CMBST'' treatment standard to an individual interim status incinerator. The availability of a CMBST treatment standard to a facility combusting F032 or F024 in a Part 265 incinerator will require the accomplishment of a two-step process. One step is for the facility to demonstrate to a regional or state official that the combustion of D/F in F032 (or F024, if applicable) at the facility uses controls to assure good combustion and control of D/F. These would typically be the CO/THC standards and D/F standards found in Part 266. The second step is that the facility solicits from EPA's Headquarters an equivalent treatment determination under Part 268.42(b). (EPA believes both steps are necessary because normally some type of direct interaction with the Region or State with the facility is needed to evaluate performance of the combustion process, and the treatment equivalency administrative process remains an EPA Headquarters task.)

5. Revised Treatment Standard for F024 Wastes

The current F024 treatment standard requires CMBST as a method of treatment, which, under the definition at 268.42, Table 1, allows combustion in Part 265 Subpart O interim status incinerator (along with other types of combustion devices). Today's rule makes the treatment standard for F024 identical to today's alternative combustion standard for F032. The existing standard allows combustion in permitted units or interim status incinerators (Part 265 subpart O). The new standard would require that an interim status incinerator receive a

[1] Also available via Internet: ''http://www.epa.gov/epaoswer/cmbust.htm''.

determination of equivalent treatment under 268.42(b), as described for the F032 standard above. As described above, this restricts the burning to facilities with combustion controls that ensure proper destruction of D/F.

D. Soil and Debris Contaminated With Wood Preserving Wastes

1. Summary of Comments

Several commenters asked EPA to revise its policy that media contaminated with hazardous listed wastes is subject to the treatment standard for the contaminated waste, and to set instead risk-based treatment levels. They asked EPA to delay the applicability of the Phase IV final rule until the Hazardous Waste Identification Rule for contaminated hazardous media is promulgated in order to lessen potential disruptions to ongoing remediation activities. In addition, other commenters argued that the proposed treatment standards for organics and D/F were unachievable by remediation technologies.

2. LDR Requirements Do Apply to Contaminated Media

Commenters stated that hazardous media should be exempt from LDR requirements until EPA finalizes HWIR for contaminated media. This issue was settled in the Phase II final rule (50 FR at 47986–7, September 19, 1994) if not before, and it is not being reopened in this final rule.

3. Technology-versus Risk-based Treatment Limits

The principal objection to the proposed treatment standards was that the values do not reflect risk, that is, the standards are based on performance of a treatment technology rather than on assessment of risks to the human health and the environment posed by the waste. The question of technology-versus risk-based treatment standards has been raised throughout the development of the land disposal restrictions program. The Agency is not reopening this issue in this final rule. See, instead discussion in the Phase II final rule (59 FR at 47986, September 19, 1994). EPA does specifically find, however, that the treatment standards for these contaminated media are not established below levels at which threats to human health and the environment are minimized. In part, this finding turns on the Agency's present inability to quantify this level. In addition, for these wastes, the presence of extremely toxic hazardous constituents (arsenic, D/F, PCP), plus the widespread contamination already caused by past land disposal of these wastes (see, e.g. the background documents to the Listing rules for F032, F034, and F035) warrant treatment which effectively destroys, removes, or immobilizes hazardous constituents to the promulgated levels.

4. UTS Limits and the Performance of Remedial Treatment Technologies

The third issue raised by the commenters is whether or not the UTS limits promulgated for organics can be achieved by all remediation technologies currently being used at wood preserving facilities. The UTS limits promulgated for organics and D/F regulated in nonwastewater forms of wood preserving wastes are based on the performance of (and are routinely achievable by) combustion technologies. EPA does not have to set treatment standards that are achievable by all, or even several, treatment technologies. The treatment limits promulgated for D/F constituents in nonwastewater forms of F032 are based on the combustion of solids, liquids, and soils contaminated with D/F constituents, namely acutely hazardous wastes F020, F022, F023, F026, and F027 (see 51 FR 1733, January 14, 1986). EPA's existing technical guidance documents describing technological options for treating contaminants found at wood preserving facilities often recommend incineration as a viable technology for cleaning up ''hot spots'' of organics and D/F contaminants. These guidance documents also emphasize that incineration is usually able to treat below cleanup levels and LDR treatment limits. (See *Presumptive Remedies for Soils, Sediments, and Sludges at Wood Treater Sites*, Directive 9200.5–162, NTIS #PB–95–963410; *Technology Selection Guide for Wood Treater Sites*, EPA 540–F–93–020 or Pub.9360.0–46FS; and *Contaminants and Remedial Options at Wood Preserving Sites*, EPA/600/R–92/182.)

Available data on the performance of noncombustion technologies such as thermal desorption and chemical dehalogenation also do not necessarily support the commenters' claim that other remedial technologies will fail to meet the treatment limits promulgated today. Based on the available information, EPA believes that chemical dehalogenation (for D/F and chlorinated organic constituents) and thermal desorption (for organics and D/F constituents) generally can be optimized to meet the UTS limits promulgated today. (See Wood Preserving Background Document and Technical Guidance documents cited above.) Furthermore, it may be necessary to use two or more treatment technologies to achieve the limits, as EPA's Technical Guidance documents point out. This is, however, a site-specific determination, and the ability of a treatment train to meet or fail UTS or cleanup limits can only be assessed through the findings of a feasibility study.

IV. Improvements to the Land Disposal Restrictions Program

A. Significant Reduction in LDR Paperwork

Summary: The LDR regulations heretofore required hazardous waste handlers to include LDR notifications with each shipment of waste sent to treaters or disposers. Today EPA is amending the rule to require only a one-time notification, rather than with each shipment of hazardous waste. The one-time notification would apply to shipments of all restricted hazardous wastes, and so would include lab packs. No new notification would be required unless there were a change in the waste, process, or receiving facility. This amendment will save approximately 1,630,000 hours spent by the private sector on paperwork. EPA is also promulgating other paperwork reduction actions, as proposed.

1. Background

In January 1995, EPA announced a goal to reduce the reporting and record keeping burden imposed by its regulations by 25 percent by June 30, 1996. This announcement initiated implementation of one of the reinvention projects set forth in the President's March 16, 1995, report, ''Reinventing Environmental Regulations.'' The baseline from which the 25 percent reduction was to be calculated was the reporting and record keeping burden hours as described in the Information Collection Request (ICR) documentation as of January 1, 1995.

2. Discussion of Specific Paperwork Changes

The LDR program imposes a significant reporting and record keeping burden that is being decreased significantly by changes being made in today's rule. It is estimated that the changes being made today result in a reduction of over 1.6 million hours per year of paperwork burden. Furthermore, these changes are not likely to compromise the protectiveness or enforceability of the LDR regulations.

Most commenters on this issue supported the proposed paperwork changes. Almost all commenters addressing this issue agreed that the proposed changes made sense, and that

it would be beneficial to the regulated community to reduce the paperwork burden. A few commenters expressed concern that the reductions in LDR paperwork could be an incentive for mismanagement of hazardous wastes. The Agency acknowledges that although the potential for mismanagement is real, inspection and enforcement efforts have been, and will continue to be, a disincentive to facilities to provide false or misleading information about the hazardous wastes at their sites. This disincentive is believed to be far more important than the frequency with which the regulated community must create notification and certifications. The Agency, therefore, is promulgating the paperwork reductions despite this concern.

Much of the language specifying what must be included on LDR notifications has been rewritten to include reductions in paperwork burden and to make it easier for the regulated community to understand the requirements to which it must adhere. Rewriting this section has resulted in the renumbering of the regulatory paragraphs. The new numbering for this section is used in this discussion. Also, the generator paperwork requirements are consolidated into a table at § 268.7(a)(4).

Under the requirements of § 268.7(a), generators managing restricted hazardous wastes must determine whether their wastes meet the applicable treatment standards at the point of generation, or are otherwise exempt from those standards. Generators then must notify, in writing, either the treatment or disposal facility about their waste. The Agency is changing the notification requirement under § 268.7(a)(2) from one requiring a notice accompany each waste shipment to one allowing an one-time notification that would accompany the first waste shipment and would also be placed in the generator's files. If a generator repeatedly generates wastes which do not meet the applicable treatment standards, but the composition of these wastes, or the process generating the wastes, or the treatment facility receiving the wastes does not change, then the generator is only required to submit a one-time notification to the receiving treatment facility and to place a copy in their files. If the waste, process, or the receiving treatment facility changes, the generator is required to send a new notice to the receiving facility, and place a copy of this new notice in their files. One commenter stated that the concept of what constituted a change in one's waste was vague and should be clarified so that a new notification would be required only when a change in the waste affects the determination of which treatment standards apply. The Agency agrees that only when a change in the waste affects the determination of which treatment standards apply must the generator create a new LDR notification.

The Agency proposed that the one-time notification requirement would not apply to lab packs. Under the LDR program, a generator of a lab pack can either meet the treatment standards and paperwork requirements for all the hazardous wastes included in the lab pack, or meet the streamlined lab pack requirements of § 268.42 and the paperwork requirements of § 268.7(a)(9) (old § 268.7(a)(8)). Several commenters disagreed with the proposed approach, stating that while lab packs can be highly variable in hazardous waste content, there are instances where routine and consistent lab packs are shipped by generators on a regular basis. It was also pointed out that if the lab pack generator decided to meet the treatment standards of each waste in the lab pack rather than the § 268.42 alternative lab pack standards, it would be allowable to produce a one-time notification for each waste the lab pack contained. Therefore, it did not seem equitable to make a lab pack generator that chose to use the alternative lab pack standards produce a notification for each shipment, while a lab pack generator meeting the treatment standards for each hazardous waste in the lab pack could produce one-time notifications for each waste, so long as their waste, process or receiving facility did not change. Therefore, EPA has decided to change its proposed approach, and is including generators of lab packs in the one-time notification provisions of this final rule.

Furthermore, the lab pack notification requirements of § 268.7(a)(8) are streamlined in today's rule to include only the requirements of §§ 268.7(a)(2), 268.7(a)(6), and 268.7(a)(7). This is possible because the alternative treatment standard for lab packs specifies a method of treatment rather than concentration levels that would have to be monitored after treatment. There is, therefore, no need to know whether the wastes in the lab packs are wastewaters or nonwastewaters or are hazardous debris (these are the data items being deleted from the lab pack notification).

In § 268.7(a)(3), the Agency is changing the notification requirement so that a generator whose waste meets the appropriate treatment standards as generated is only required to submit a one-time notification and certification to the receiving facility. The requirements for this one-time notification and certification are much the same as those discussed above.

In § 268.7(a)(5), EPA is removing the requirement that generators treating on-site in tanks or containers have to submit waste analysis plans to States and Regions. Instead, the plans must merely be kept in their on-site files, as proposed.

The Agency is changing the record retention time period in § 268.7(a)(8) from five to three years, in order to make LDR requirements consistent with other RCRA record retention periods.

Under § 268.7(b)(4), the treatment facility is only required to submit a one-time notification and certification to the receiving facility, rather than submit one with each shipment of waste. A copy of the notification and certification must be kept in the treatment facility's files. If the waste, treatment system, or the receiving land disposal facility changes, the treatment facility must send a new notification and certification to the land disposal facility, and place a copy of these records in their files. Furthermore, the treatment facility notification requirements have been consolidated into a table at § 268.7(b)(4).

Finally, the Agency wishes to clarify that any records kept in connection with the LDR program may be stored electronically, eliminating the need to actually maintain paper copies. EPA wants to encourage electronic storage of LDR notifications. However, because of the complex issues involved in electronic data interchange (EDI), EPA cannot at this time include standards for electronic storage of LDR notifications in this final rule. The Agency may develop those standards at a future date. Until such general standards for allowing electronic storage of information are developed, EPA would note that it has, on one occasion, confirmed that the use of an image scanning system developed by Safety Kleen Corporation was sufficient to meet hazardous waste manifest recordkeeping requirements (see attachment to the letter to Catherine A. McCord in the docket). This system was used to scan, store, and retrieve images of original hazardous waste manifests with handwritten signatures. Although the letter confirmed only that Safety Kleen's system met these requirements, the Agency noted that similar systems used by others might also be able to meet RCRA requirements.

B. Clean-up of LDR Requirements in 40 CFR 268

EPA is rewriting portions of the LDR regulations to help the regulated community understand better what they

are required to do to comply with today's rule. Clean-up tasks such as removing extraneous cross references, eliminating unneeded language, removing unneeded appendices, and other similar actions have been taken to eliminate confusion for the regulated community. A noteworthy change is the elimination of the California List requirements that were promulgated in 1987, because they have been superseded by more specific treatment standards. In addition, a clarification has been made at 40 CFR 268.1(e) that the *de minimis* provision applies to characteristic wastes as well as commercial chemical products and intermediates.

1. Section 268.1

Section 268.1(e)(4) is clarified so that the *de minimis* provision applies to minor losses of characteristic wastes as well as to minor releases of commercial chemical products and intermediates. EPA actually made this clarification already in the Phase III final rule (see 61 FR at 15597), but inadvertently omitted it from the Phase III withdrawal notice (see 61 FR 15662). The withdrawal notice should have removed paragraph 268.1(e)(4)(ii) only, because it dealt with the special *de minimis* provisions for characteristic wastes being injected into Class I injection wells (and thus, subject to the Land Disposal Program Flexibility Act of 1996, the impetus for the withdrawal notice. See 61 FR 15661). A typographical error made it appear that the entire paragraph (e) was being withdrawn, which was not the intention of the Agency. Therefore, today's regulatory language contains the text of 268.1(e) in its entirety, and clarifies that the *de minimis* provision applies to characteristic wastes.

2. Section 268.4

Section 268.4(a)(2)(iv) is changed to read, ''Recordkeeping. The sampling, analysis, and recordkeeping provisions of §§ 264.13 and 265.13 apply.'' Referencing the §§ 264.13 and 265.13 requirements in § 268.4 clarifies that there are no additional recordkeeping requirements at § 268.4; the general facility recordkeeping requirements apply, thus the LDR program does not add additional burden.

3. Section 268.5

The Agency proposed to amend § 268.5(e) so that an applicant could apply for and be granted additional time (up to one year) when first applying for a case-by-case extension of the effective date. Commenters argued, however, that it would be inappropriate for EPA to grant what would be, in effect, a ''two-year'' case-by-case capacity variance. Some commenters stated that the proposed change would hinder necessary treatment capacity from being brought on-line expeditiously, and that requiring a renewal application for a second-year extension allows the Agency to evaluate whether the applicant has made a good-faith effort to develop or locate hazardous waste treatment capacity. The Agency is persuaded by the commenter's concerns and is, therefore, not making the proposed change to § 268.5. As has always been the case in the LDR program, case-by-case extension applicants must make a separate application for a renewal of their case-by-case extension if the initial one-year period is not sufficient to develop treatment capacity.

4. Section 268.7

In section 268.7(c)(2), the sentence, ''* * * test method described in appendix I of this part or using any methods required by generators under § 268.32 of this part * * *'' is changed to read, ''* * * test method described in 'Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,' EPA Publication SW–846.'' Specific reference to EPA Publication SW–846 for the Toxicity Characteristic Leaching Procedure gives the regulated community a more direct reference for details of the test method.

5. Section 268.9

In § 268.9, paragraph (a) has been clarified to better describe how wastes should be identified for purposes of the LDR program when they are both listed and characteristic hazardous wastes.

In § 268.9(d)(1)(ii), the language has been edited to clarify that if all underlying hazardous constituents reasonably expected to be present in a characteristic waste will be monitored, then the generator need not list any of them on the LDR notification. If, on the other hand, a subset of all underlying hazardous constituents will be monitored, they must be included on the LDR notification.

6. References to Section 268.32

References to § 268.32 and RCRA 3004(d), California List wastes, are removed, because the treatment standards for the these wastes have been superseded by subsequent treatment standards. See generally 55 FR at 22675 (June 1, 1990) noting the general principle that California list prohibitions no longer apply once a more specific treatment standard applies, and noting the handful of situations where California list prohibitions would continue to apply. With the advent of the requirement to treat for underlying hazardous constituents reasonably expected to be present in characteristic wastes, there no longer are any situations where California list prohibitions could create an exclusive treatment standard. Consequently, there is no need to retain any reference to California list prohibitions in the regulations.

7. Sections 268.34–268.37

The information about the dates of waste prohibition provided in §§ 268.34–268.37 is removed because the treatment standards for the wastes are all now in effect, eliminating any need to retain the dates.

8. References to Sections 268.41–268.43

References in Part 268 to LDR treatment standards that have previously been found in tables in §§ 268.41, 268.42, and 268.43, are changed to refer to the consolidated table in 268.40.

9. Appendices

Appendix I is removed and reserved because the TCLP test method reference to SW–846 will be incorporated into the text of the regulatory language.

Appendix II to Part 268 is also removed and reserved because it incorrectly refers to treatment standards in §§ 268.41, 268.42, and 268.43 (they are now in § 268.40); furthermore, there is no longer a need for a reference to the solvent treatment standards.

Appendix III is removed and reserved because the California List treatment standards have been superseded by Universal Treatment Standards plus the requirement to treat underlying hazardous constituents in characteristic hazardous wastes. Thus, there is no need for a listing of halogenated organic compounds under the California List.

Appendix VI is amended to clarify that land disposed characteristic wastes that also contain underlying hazardous constituents must be treated not only by a ''deactivating'' technology to remove the characteristic, but also treated to achieve the Universal Treatment Standard for underlying hazardous constituents.

Appendix VII has been updated to include all the effective dates of all surface disposed hazardous wastes for which there are treatment standards. Likewise, Appendix VIII has been updated.

Appendix X is removed and reserved because it summarized paperwork requirements that are clarified in tables in today's rule at sections 268.7(a) and (b).

The Agency is committed to identifying new ways the LDR program can be simplified, and will continue to seek additional opportunities for such streamlining efforts in the future.

C. Clarifications of Point of Generation

Summary: EPA is identifying the point of generation of wastes from boiler cleanout and for certain ignitable wastes treated in tanks. The significance of this action is to define the point at which a determination is made as to whether or not the LDR prohibitions attach to the wastes generated from these activities. In some cases, the broader question of whether a hazardous waste is even generated also can be presented. A waste which is not identified or listed as hazardous at the point LDR prohibitions would attach, the so-called ''point of generation'' is not prohibited from land disposal. Conversely, if a waste is hazardous (i.e. identified or listed) at that point, LDR prohibitions typically do attach notwithstanding that the waste may no longer be ''hazardous'' at the point it is land disposed. EPA is not finalizing options discussed in the Phase III LDR rule (60 FR 11715, March 2, 1995) which discussed more far-reaching alternatives for defining the point at which LDR prohibitions can attach, but is issuing interpretations applicable to several discrete fact situations involving questions implicating this issue.

1. General Discussion

Since November 1986, EPA has required determinations as to whether LDR prohibitions attach to be made at the point when hazardous wastes are generated (51 FR 40620). This issue took on critical import in the so-called Third Third rule when EPA addressed the issue of treatment standards for wastes that exhibit a hazardous waste characteristic, and whether LDR prohibitions could apply to wastes that initially exhibit a characteristic but no longer do so (i.e. are ''non-hazardous'' in that they are no longer identified or listed as hazardous) at the point they are land disposed. By adhering to the principle that LDR prohibitions attach at the point of waste generation, EPA maintained that these de-characterized wastes must still be treated to satisfy EPA-established treatment standards, notwithstanding that the wastes are no longer identified as hazardous. 55 FR at 22651–52. The D.C. Circuit sustained this interpretation as permissible in *Chemical Waste Management* v. *EPA*, 976 F.2d 2, 13–14 (D.C. Cir. 1992) cert. denied 113 S. Ct. 1961 (1993).

In the Phase III LDR rule, EPA solicited comment on the issue of possibly redefining the point at which LDR prohibitions attach. EPA presented three options: (1) when there are similar wastewater streams generated by similar processes; (2) when there are waste streams from a single process; and (3) at a point of aggregation called ''battery limits.'' 60 FR 11715–717.

EPA considered these options because of the potential reach of the *Chemical Waste Management* opinion on generally successful wastewater management operations carried out pursuant to the Clean Water Act (i.e. treatment of aggregated wastewaters, some of which at one time exhibited a hazardous waste characteristic, pursuant to the National Pollutant Discharge Elimination System regulations for direct dischargers and pretreatment regulations for indirect dischargers) and the Safe Drinking Water Act (injection of decharacterized wastewaters into Class I non-hazardous injection wells under the Underground Injection Control program). However, on March 26, 1996, President Clinton signed into law the Land Disposal Program Flexibility Act of 1996. This Act provided, among other things, that decharacterized wastes managed in the types of wastewater management systems described above are no longer prohibited from land disposal so long as they are not hazardous wastes at the point they are land disposed. See generally 61 FR 61660 (April 8, 1996). As a result, EPA no longer believes there is any need to fundamentally reexamine the issue of where LDR prohibitions attach, and is not acting on these parts of the Phase III proposal.

However, the Agency has identified specific issues which may be considered ''point of generation'' issues, and which were not addressed by the Land Disposal Program Flexibility Act of 1996. In today's rule, EPA is addressing these specific issues. In each case discussed below, the Agency believes that the existing regulatory language is adequate, but clarification is necessary to prevent inappropriate interpretations. In making these interpretations, EPA is in some cases clarifying not only LDR applicability, but also generally where the determination as to whether a waste is hazardous must be made.

2. Boiler Cleanout

Power plant boilers are generally taken out of service and cleaned out once every 3 years (an average of one unit every year per facility). The cleaning process generally consists of an initial rinse of an acid cleaning solution and one or two rinses of water, generating an average of several hundred thousand gallons of acid wash/rinse water during each cleaning. The initial rinsate stream frequently is characteristically hazardous, exhibiting the TC for lead and chromium plus the characteristic of corrosivity.

The rinsate from this process is combined in a tank (or potentially, several tanks), usually temporary tanks brought on-site for the cleaning process, and then either discharged to surface impoundments prior to NPDES discharge (which commingled wastes would normally be exempt from RCRA Subtitle C by virtue of the Bevill Amendment) or directly fed to the boilers (a practice typically raising no issues of LDR applicability since no land disposal is involved). The issue in question is whether waste is considered generated after each rinse (acid and water) or at the end of the cleaning of the boiler when the rinsates have been combined; in other words, whether a determination is made for each rinse or for combined rinses. If the latter, then the rinsate would be hazardous waste (and as one consequence, potentially prohibited from land disposal) only if the combined rinsates exhibit a characteristic. Note that this is not strictly an LDR issue but presents the issue of whether a unit is regulated, in this case the tank that receives the rinsate.

The Agency is today clarifying that, specific to power plant boiler cleanout (and potentially, to other sporadic cleaning activities involving multiple rinses), generation is at the completion of the entire cleanout process. EPA believes that the mass loading of hazardous constituents from the process to the environment will not be affected by this determination, since a given amount of cleanout fluid and water is needed to complete the task in every case. Cf. 60 FR at 11716 noting that in such situations the underlying policy of the prohibition on dilution is not implicated. The agency views the cleanout of the boilers as one process and therefore does not consider the mixing of acid rinse and water rinse as impermissible dilution but as a single waste rinsate resulting from the single cleanout process. This waste is subject to regulation if it exhibits a characteristic, and subject to LDR prohibitions if it exhibits a characteristic and is going to be land disposed.

Today's clarification of the point of generation for boiler cleanout is limited to the situation in which the entire quantity of boiler cleanout rinses are contained in a single container so that hazardous waste and LDR determinations can be made based upon the commingling of all the rinses

together. If, for example, a temporary tank is brought on-site but does not have sufficient capacity to handle the estimated several hundred thousand gallons of rinsate at once, the waste will likely have to be managed in separate loads. In such instances, the generator will still be required to make hazardous waste and LDR determinations for each separate load.

In adopting today's interpretation, EPA emphasizes that this type of cleaning is a batch operation occurring at widely-spaced intervals and involving temporary storage units (i.e. units that are removed from the premises after receiving the rinsate). Thus, the interpretation does not ever apply where a surface impoundment receives rinsate (see, e.g., *Chemical Waste Management* v. *EPA*, 976 F. 2d at 20 n. 4 (placement of any amount of characteristic waste in a surface impoundment makes the unit a regulated unit even if diluted to non-characteristic levels afterwards)). The interpretation also does not apply where there are permanent storage units involved. EPA also notes the evident point that if commingled rinses still exhibit a hazardous waste characteristic, the receiving tank is a regulated unit. Persons owning or operating such tanks have the same obligations as other generators to determine whether the waste exhibits a characteristic. See 262.11.

3. Sludge From High TOC (Total Organic Carbon) D001 Treated in Tank Based Systems

Many generators introduce waste into tank-based wastewater treatment systems where the resulting effluent is discharged to a POTW or to navigable waters, and the resulting wastewater treatment sludge is land disposed. At times, the waste that is placed in the tank-based system exhibits the ignitable characteristic. If the organic content of the wastewater is sufficiently high, the liquid waste—when first released—can meet the definition of nonwastewater found in 40 CFR Part 268.2(d).

The fact situation of concern can involve releases of high TOC ignitable wastes (which have a designated method of treatment), raising a question of whether that treatment standard for high TOC waste still applies to sludge generated from the wastewater treatment, even if the sludge is not itself high TOC ignitable waste.

It is EPA's view that the sludge in this situation should be viewed as a new treatability group. Put another way, the change of treatability group principle applies to situations where liquid wastes which are technically nonwastewaters are inadvertently placed in wastewater treatment systems in small quantities, for legitimate wastewater treatment, thereupon becoming wastewaters (as defined in 268.2(f) of the rules), and subsequently generating a sludge. See 58 FR 29871, May 24, 1993 (''In the Third Third final rule, EPA stated that for characteristic wastes, each change of treatability group in a treatment train marked a new point of generation for determining if a characteristic waste was prohibited from land disposal''). Consequently, because the sludge generated from the tank-based wastewater treatment system is a different treatability group from the wastewater from which it is generated, it would be considered to be a newly generated waste that should be evaluated at its point of generation to determine if it is hazardous, and if so, to then determine the appropriate LDR standard. (Also, please note that elsewhere in today's notice the Agency clarifies that the LDR *de minimis* exemption applies to small, inadvertent, releases of characteristic waste into wastewater treatment systems. As a practical matter, the *de minimis* exemption probably makes the question moot, because larger releases would not typically occur since they would likely interfere with wastewater treatment systems operation.)

4. Tank Rinsate

An issue arises when high-TOC ignitable wastes are stored in tanks, and some residue from these wastes remains in the tanks after the tanks are emptied and rinsed. The initial high-TOC ignitable waste is considered a nonwastewater with the treatment standard of CMBST (combustion) or RORG (recovery of organics). However, it is EPA's view that the rinsate from an empty tank (see 47 FR 1250, January 11, 1982, for guidance on empty waste tanks) is a newly generated wastewater and the high-TOC ignitable waste treatment standards do not attach. The rinsate must be evaluated at its point of generation, i.e., after the complete rinsing of the empty tank, and, if it exhibits a characteristic (or for some reason is listed independently) it is subject to treatment standards for that characteristic (or listed waste), rather than to the form of the waste from which it originated. This determination also applies to tanks that are used to collect wastewaters that are listed solely because they exhibit a characteristic (i.e., ignitability, corrosivity, or reactivity). EPA has stated that the existing rule, which provides that the dilution prohibition does not apply to wastewaters listed solely because they exhibit a characteristic, remains in effect. See 61 FR 15662.

D. POLYM Method of Treatment for High-TOC (Total Organic Carbon) Ignitable D001 Wastes

Summary: Today's rule establishes an alternative treatment standard of POLYM (polymerization) for high-TOC D001 wastes originally intended as chemical components in the commercial manufacture of plastics. In the polymerization treatment process (POLYM), the wastes are reacted to produce a chemically stable plastic in the same manner that commercial plastics are formed.

Discussion: The National Marine Manufacturer's Association contacted EPA with concerns that the May 1993 Interim Final Rule prohibited the practice of polymerizing excess polyester/styrene waste left over from the manufacture of modular shower stalls and recreational boats, among other things. EPA proposed to add polymerization (POLYM) to the set of required methods of treatment designated as BDAT for high-TOC ignitable (D001) wastes resulting from commercial polymerization processes. (60 FR 43679, August 22, 1995.) In these manufacturing processes, polyester/styrene reacts with methyl ethyl ketone (MEK) peroxide in a mold to form fiberglass. The ignitable waste polyester/styrene and MEK peroxide are the wastes of concern.

Small quantities of polyester/styrene monomers and MEK peroxide wastes can be reacted together to create fiberglass scraps. The scraps are inert and do not exhibit the hazardous waste characteristics of toxicity, ignitability, corrosivity, or reactivity. It is this practice that is referred to as polymerization for the purposes of this rule. The waste polyester/styrene monomers and MEK peroxide are currently regulated as high-TOC ignitable wastes (40 CFR 268.9) for which the current standard is treatment by CMBST (combustion) or by RORGS (recovery of organics) before land disposal. Neither CMBST nor RORGS allows for polymerization (as an exclusive treatment method) of high-TOC ignitable wastes. The Agency believes that the practice of polymerizing high-TOC ignitable waste polymers and monomers which are chemical components in the manufacture of plastics to a noncharacteristic inert mass adequately minimizes threats posed by disposal of the waste.

Today EPA is establishing POLYM as an alternative to CMBST or RORGS only for those high-TOC D001 wastes

originally intended as chemical components in the commercial manufacture of plastics. POLYM requires the addition of the same polymerizing component or catalyst to the deactivated high-TOC D001 monomer stream intended for land disposal. POLYM is defined as ''formation of complex high-molecular weight solids through polymerization of monomers with high-TOC D001 nonwastewaters which are chemical components in the manufacture of plastics.''

EPA acknowledges that POLYM is not as effective at destroying all of the hazardous constituents of the materials as CMBST, the specified treatment standard for high-TOC D001 nonwastewaters. However, as defined, POLYM is the same process that is used in the actual manufacturing of plastic products such as water pipe and watercraft. To allow materials and a process to be used to construct water pipe and boat hulls, but prohibit the same process to be used to treat excess materials from those same processes does not make sense. In addition, the treatment of these chemical components using POLYM does convert an ignitable waste into a non-ignitable solid prior to disposal. Treatment occurs as the organic materials react to form a hard, inert material. Data submitted by the Composites Institute (see CI Memo 20 DEC 96) show that of the Appendix VIII constituents that are present in scrap uncured polyester resins, greater than 50% of the constituents are chemically converted by the polymerization process to form a part of the solid polymer. The remaining constituents are physically bound in the solid polymer matrix. The Agency believes that the low quantities of Appendix VIII constituents are sufficiently bound in the polymer matrix so as to minimize the threats posed by disposal of the noncharacteristic inert mass of scrap material. Below is a table showing the Appendix VIII constituents typically found in scrap uncured polyester resins:

Appendix VIII constituents	Maximum % in uncured resin
Methyl methacrylate	10.0
Antimony trioxide	3.0
Dibutyl phthalate	1.8
Butyl benzyl phthalate	1.05
Dimethyl phthalate	1.05
Methyl ethyl ketone peroxide	1.05
Dioctyl phthalate	0.75
Methyl ethyl ketone	0.09
P-benzoquinone	0.05
Maleic anhydride	(1)
phthalic acid esters NOS	(1)
phthalic anhydride	(1)

[1] Trace.

Of the constituents listed in the table above, methyl methacrylate (a monomer) and methyl ethyl ketone peroxide (a catalyst), are chemically converted by the polymerization process and form part of the solid polymer.

EPA has decided to promulgate POLYM as a treatment standard rather than dealing with this issue on an individual basis via Determination of Equivalent Treatment (DET) petitions. As defined, equivalency need not remove every single molecule of constituents as the comparison technology to be considered equivalent. A similar issue involving high-TOC ignitable waste was addressed in a Determination of Equivalent Treatment (see DET IBM Essex Junction, VT). In that determination, the high-TOC waste was being treated to a slightly lower level than combustion. EPA did so, in part, because the treatment process was achieving very substantial destruction of hazardous constituents, and otherwise assuring that the special concerns regarding treatment of high-TOC ignitable wastes, such as interference with wastewater treatment systems, were not present. Similarly, in this instance, POLYM will destroy most of the hazardous constituents present and substantially immobilize those that remain. In addition, there is no possibility that this treatment method will interfere with wastewater treatment. Finally, EPA notes that the POLYM process appears to be as efficient as the other type of allowable treatment method for high-TOC ignitable wastes, namely RORGS (recovery of organics). Thus, EPA believes that the POLYM process evaluated here, along with CMBST and REORG, satisfies the section 3004(m) requirement that threats be minimized by treatment, and also could satisfy the equivalency standard in 268.42(b).

A number of commenters have solicited EPA to expand the definition of POLYM to include other types of polymerization processes. EPA appreciates the suggestions of the commenters. However, the Agency does not currently have enough data to evaluate the effects of expanding the definition. The Agency will consider the idea of expanding the definition of POLYM and solicits any data that commenters may have regarding additional methods of polymerization. Further, under 268.42(b), persons may petition the Agency for a determination of equivalent treatment for their specific polymerization process, if it is not included in today's rule.

Finally, in response to inquiries, EPA notes that POLYM treatment (or for that matter, most types of treatment) can occur at the site of generation without having to obtain a RCRA permit, provided treatment occurs in tanks, containers or containment buildings and these units comply with the substantive standards set out in 40 CFR 262.34 (standards for so-called 90-day generator tanks, containers, and containment buildings). See 51 FR at 10168 (March 24, 1986). EPA notes further that these standards for 90-day units may include compliance with the RCRA air emission standards set out in subparts AA, BB, and CC of part 265 (assuming the waste satisfies the applicability criteria set out in these rules). See generally, 61 FR at 59934–35 (Nov. 25, 1996) and 59 FR 62896 (Dec. 6, 1994). In addition, POLYM treatment occurring in units requiring a permit could be subject to the corresponding standards for air emissions found in Part 264 subparts AA, BB and CC.

E. Decision To Retain Current Treatment Standard for Multi-Source Leachate (Waste Code F039)

In the Phase IV proposed rule, EPA suggested that with the promulgation of the Universal Treatment Standards (UTS), there was no longer a need for the separate list of constituents for multisource leachate (F039) in the Treatment Standards for Hazardous Wastes table at 40 CFR 268.40. EPA proposed that F039 would be treated to meet all the UTS for the constituents at § 268.48, with the exceptions of fluoride, vanadium, and zinc, which are not underlying hazardous constituents.

Several commenters, however, pointed out that such an action would be more than a simplification of existing treatment standards. Rather, it would add several constituents to those for which EPA has set treatment standards in F039, without notice and an opportunity for comment. The Agency has reexamined the F039 list of constituents and agrees with commenters that changing F039 to cross reference the UTS constituents at § 268.48 would add regulated constituents to F039. This was not the intent of the proposed change. Therefore, the Agency is not promulgating any change to F039 in this final rule. The treatment standard levels for the hazardous constituents in F039 are identical to the UTS for those constituents, so retaining the current

treatment standard constituent list for F039 does not decrease environmental protection in comparison with changing the standard.

V. Status of Proposed Provisions on Leaks, Sludges, and Air Emissions From RCRA-Equivalent Treatment of Decharacterized Wastewaters in Clean Water Act Surface Impoundments

In the August 22, 1995 Phase IV proposal, EPA discussed three options for ensuring that underlying hazardous constituents in decharacterized wastes were not released to the environment via leaks, sludges, and air emissions from surface impoundments in systems regulated by the Clean Water Act or Safe Drinking Water Act (60 FR 43655). (Decharacterized wastes are wastes which initially exhibited a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity when generated but are no longer characteristic). On March 16, 1996, the President signed the Land Disposal Program Flexibility Act of 1996, which provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. As a result, on April 8, 1996, EPA withdrew its treatment standards for these wastes (61 FR 15660). Today EPA announces that it will not finalize, at this time, the provisions for leaks, sludges, and air emissions that EPA proposed on August 22, 1995 (60 FR 43655–43677). Furthermore, the treatment standards for TC metal wastes discussed in the proposal accompanying today's rule do not apply to TC metal wastes if the characteristic is removed and the wastes are subsequently treated in a unit whose discharge is regulated by the Clean Water Act or, for underground injection wells, the Safe Drinking Water Act.

However, the Land Disposal Flexibility Act does mandate EPA to undertake a study to determine any potential risks posed by cross-media transfer of hazardous constituents from these surface impoundments. The findings of this study, begun by the Agency in April, 1996, may result in proposed regulations for these units, if risks are in fact found that would warrant such regulation.

VI. Decision Not To Ban Nonamenable Wastes From Biological Treatment

EPA is not prohibiting certain decharacterized wastes from land-based wastewater treatment systems on the basis of whether the constituents in those wastes are ''amenable'' to biological treatment. As is discussed in the April 8, 1996 partial withdrawal notice to the LDR Phase III final rule (61 FR 15660), the Land Disposal Program Flexibility Act of 1996, signed by the President on March 26, 1996, provides that the wastes in question are no longer prohibited from land disposal once rendered nonhazardous. Because they are decharacterized before they enter the impoundment, these wastes are no longer prohibited wastes under RCRA.

VII. Capacity Determinations for Wood Preserving Wastes

A. Introduction

This section summarizes the results of the capacity analysis for the wastes covered by this rule. For background information on data sources, methodology, and details of the capacity analysis for each group of wastes covered in this rule, see ''Background Document for Capacity Analysis for Land Disposal Restrictions, Phase IV—Wood Preserving Wastes (Final Rule).''

In general, EPA's capacity analysis focuses on the amount of waste to be restricted from land disposal that is currently managed in land-based units and that will require alternative treatment as a result of the LDRs. The quantity of wastes that are not managed in land-based units (e.g., wastewater managed only in RCRA exempt tanks, with direct discharge to a Publicly Owned Treatment Works (POTW)) is not included in the quantities requiring alternative treatment as a result of the LDRs. Also, wastes that do not require alternative treatment (e.g., those that are currently treated using an appropriate treatment technology) are not included in these quantity estimates.

EPA's decisions on whether to grant a national capacity variance are based on the availability of alternative treatment or recovery technologies. Consequently, the methodology focuses on deriving estimates of the quantities of waste that will require either commercial treatment or the construction of new on-site treatment as a result of the LDRs. EPA attempts to subtract from the required capacity estimates the quantities of waste that will be treated adequately either on site in existing systems or off site by facilities owned by the same company as the generator (i.e., captive facilities).

B. Available Capacity

Available capacity was estimated for the three treatment technology categories: combustion, stabilization, and wastewater treatment that are expected to be used for the wastes in today's rule. (Numerous other types of treatment also can meet the treatment standards for much of these wastes, although the Agency did not find it necessary to estimate the available capacity of these treatments. See the Background Document for further information.)

1. Thermal Treatment

EPA estimates that there are less than 50,000 tons per year of soil combustion capacity, approximately 144,000 tons per year of commercial sludge/solid combustion capacity, and 886,000 tons per year of commercial liquid combustion capacity available for Phase IV Wood Preserving Wastes. This accounts for treatment facilities without updated permits for the newly listed wastes or that likely will not wish to accept the wastes for other reasons (e.g. dioxin/furan monitoring requirements, low BTU, or other undesirable waste characteristics).

2. Stabilization

EPA estimates that there are approximately 1.1 million tons of available stabilization capacity, with most of it able to meet the treatment requirements for the newly listed wood preserving wastes.

3. Wastewater Treatment

EPA estimates that there are approximately 37 to 47 million tons per year of available wastewater treatment capacity. The various treatment technologies that form the basis of this capacity are routinely able to meet the treatment standards of the wood preserving wastewaters.

C. Required Capacity and Comparison With Available Capacity

EPA estimates that very small quantities of wood preserving wastewater (approximately 440 tons of organic wastewater and 13,000 tons of inorganic wastewater) will require alternative treatment capacity in order to comply with the LDRs. EPA estimates that less than 10,000 tons of nonwastewaters (8,700 tons of organic nonwastewaters and 1,300 tons of inorganic nonwastewaters) will require alternative treatment as a result of the LDRs.

EPA believes that combustion, combustion followed by stabilization, or stabilization will meet the treatment standards for nonwastewaters of wood preserving wastes. For wastes with arsenic, although the basis of the treatment for arsenic is vitrification, EPA believes that the standard can also be met by stabilization. Also, in general, chemical precipitation will meet the treatment standards for the inorganic wastewater. EPA identified specific wastewater treatment technologies that support UTS for these wastes and concluded that the wastewater

treatment practices at the wood preserving facilities can be optimized to meet the proposed limits. (Please see BDAT Background Document for details.) There is sufficient liquid and sludge/solid combustion capacity for both the organic wood preserving wastewaters and nonwastewaters. In addition, EPA believes that there is sufficient chemical precipitation capacity for the inorganic wastewater. Finally, ample stabilization capacity exists for the inorganic nonwastewaters. Therefore, EPA is not granting a variance for the newly listed wood preserving wastes.

Some commenters provided data on soil and debris contaminated with wood preserving wastes. The regulated communities are quite concerned about the availability of treatment capacity using established technologies as well as the potential for innovative technologies to provide additional treatment capacity. EPA has examined the available data and information submitted by commenters and from other sources such as Superfund Record of Decisions. The Agency estimated that combustion capacity available to treat soils and debris contaminated with newly listed wood preserving wastes is less than 50,000 tons per year. In contrast, EPA estimates that well over 100,000 tons per year of soil and debris may require additional combustion capacity. Furthermore, logistics issues may severely hamper the ability of site managers to obtain adequate alternative treatment in the near term. Therefore, given the lack of available capacity and other issues associated with soil and debris contaminated with F032, F034, and F035 wood preserving wastes, EPA is granting a two-year extension of the effective date for these wastes.

D. Mixed Radioactive Wastes

Despite the uncertainty about quantities of mixed radioactive wastes that will require treatment as a result of today's rule, any new commercial capacity that becomes available will be needed for mixed radioactive wastes that were regulated in previous LDR rulemakings and whose capacity extensions have already expired. Thus, EPA has determined that sufficient alternative treatment capacity is not available, and is granting a two-year national capacity extension of the effective date for radioactive wastes mixed with RCRA wastes for which standards are being promulgated today, including soil and debris.

E. Phase IV Wood Preserving Wastes Injected Into Underground Injection Control (UIC) Class I Wells Injected Into Class I Wells

EPA estimated the volume of waste regulated in today's rule that is currently injected into UIC wells. This volume is a conservative estimate based on highly complex non-segregable waste stream mixtures, and it may be that the actual volume injected is less. A very small volume of newly listed wood preserving wastes (F032, F034 and F035) may be injected into Class I Wells. These wastes are either injected at wells located at the site of generation, or are sent off-site for injection in commercial Class I wells.

These wells have existing no-migration determinations. However, even if an injection well has received a no-migration petition, it can inject a newly prohibited waste only if the waste is similar to wastes included in the initial no-migration petition. The new wastes must behave hydraulically and chemically in a similar manner to those already included in the initial petition demonstration such that they will not interfere with the containment capability of the injection zone and the location of the waste plume will not significantly differ from the initial demonstration. (See 40 CFR 148.20 (f) , and UIC Guidance No. 74.) Based on these principles, EPA has investigated whether the no-migration determination for the wells injecting these wood preserving wastes allow continued injection. If injection is not presently allowed due to the need to amend a petition, the well would not be providing any capacity, because none of these facilities operate treatment processes capable of achieving the treatment standard for these wastes.

EPA has determined that at least six commercial injection well facilities with no-migration petitions would be allowed to inject wood preserving wastewaters without needing to amend their petitions. The rationale for this determination is located in the RCRA docket. EPA has further determined that these wells have unused injection capacity exceeding the amount of wood preserving waste generated annually (EPA Regional communications in the RCRA docket). Thus, even if all wood preserving wastewaters presently injected would have to find new capacity, sufficient capacity exists. In addition, there is commercial wastewater treatment capacity that could accommodate some of this volume.

Based on this information, the Agency has reassessed its position since the proposed rule and decided not to grant a two-year national capacity extension of the effective date for wood preserving waste being injected at Class I facilities. As discussed above, there appears to be sufficient protective disposal capacity (i.e. approved no-migration disposal capacity) which can accommodate all of the currently-injected wood preserving wastewaters, even if all this wastewater will be diverted from injection wells currently used.

EPA notes further that commenters did not claim that there was insufficient capacity to manage these wastes. However, it should be noted that RCRA section 3004(h)(3) provides individual facilities opportunity to demonstrate that inadequate protective treatment or disposal capacity is available. Substantive standards are set out in 40 CFR § 268.5 and in UIC Guidance No. 69.

F. Summary of Variance Determinations

Table 1 lists each category of RCRA wastes for which EPA is today setting LDR standards. For each category, this table indicates whether EPA is granting a national capacity extension of the effective date for land-disposed wastes or injected wastes managed by UIC Class I injection wells.

TABLE 1.—NATIONAL CAPACITY EXTENSIONS OF THE EFFECTIVE DATE FOR NEWLY LISTED AND IDENTIFIED WASTES

Waste description	Surface-disposed wastes	Deep well-injected wastes
Newly Listed Wood Preserving Wastes (F032, F034, F035)	No.	No.
Soil and Debris Contaminated with Newly Listed Wood Preserving Wastes	Two-year.	N/A
Mixed Wood Preserving and Radioactive Wastes, Including Soil and Debris	Two-year	Two-year

VIII. Changes to Definition of Solid Waste to Exclude Processed Scrap Metal and Shredded Circuit Boards From RCRA Jurisdiction

Summary: As proposed on January 25, 1995 (FR 61 2338), EPA is today amending the definition of solid waste to exclude from RCRA jurisdiction two types of materials: processed scrap metal and containerized shredded circuit boards.

A. Processed Scrap Metal

1. Summary of Proposal

The Agency proposed the exclusion of processed scrap metal and shredded circuit boards being recycled from the Definition of Solid Waste in the January 25, 1996 proposed Phase IV LDR supplemental rulemaking. Currently, scrap metal being reclaimed is a solid waste, but completely exempt from RCRA Subtitle C regulations. The proposal would have amended the definition of solid waste to exclude processed scrap metal and containerized shredded circuit boards that are being recycled from RCRA jurisdiction. In the proposal, the Agency did not propose to make changes to the current definition of scrap metal: ''bits and pieces of metal parts (e.g., bars, turnings, rods, sheets, wire) or metal pieces that are combined together with bolts and soldering (e.g., radiators, scrap automobiles, railroad box cars), which when worn or superfluous can be recycled.''

The proposal defined processed scrap metal as ''scrap metal which has been manually or mechanically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes but is not limited to scrap metal which has been bailed, shredded, sheared, melted, agglomerated (for fines, drosses and related materials which are not scrap metal prior to agglomeration) or separated by metal type.'' The Agency believes that processed scrap metal being recycled is distinct from other secondary materials defined as wastes when recycled due to established markets for the material's utilization, inherent positive economic value of the material, the physical form of the material, and absence of damage incidents attributable to the material, and is therefore sufficiently product-like that maintaining RCRA regulatory jurisdiction over this material is not necessary. A summary of the proposed exclusion from the definition of solid waste for shredded circuit boards being recycled follows the discussion of the exclusion from the definition of solid waste for processed scrap metal being recycled.

2. Modifications to the Proposal

The Agency received approximately twenty-five comments concerning the proposed scrap metal and shredded circuit board exclusions. The comments were generally supportive of the exclusions. A background document, the major comments received, and Agency responses on the proposed processed scrap metal exclusion can be found in the docket for this rulemaking. Comments on the shredded circuit board exclusion can also be found in this background document.

In response to comment on the proposed exclusion to the definition of solid waste for processed scrap metal being recycled, the Agency has made several modifications to the exclusion in the final rule. First, the Agency has expanded the exclusion to cover unprocessed home and unprocessed prompt scrap metal being recycled. Home scrap is scrap metal generated by steel mills, foundries, and refineries such as turnings, cuttings, punchings, and borings. Prompt scrap, also known as industrial or new scrap metal, is generated by the metal working/fabrication industries and includes such scrap metal as turnings, cuttings, punchings, and borings. These categories of scrap metal do not fit the definition of processed scrap metal found in the proposal because they often do not require a processing step before being sent for recycling. The Agency evaluated unprocessed home scrap and prompt scrap metal and found that these categories of scrap metal are substantially similar to processed scrap metal due to established markets for the material's utilization, inherent positive economic value of the material, the physical form of the material, and absence of damage incidents attributable to the material. Based on this analysis, the Agency has expanded scope of the exclusion to include both unprocessed home and unprocessed prompt scrap metal. In the final rule, the term ''excluded scrap metal'' will be used to reflect this decision. Commenters also suggested the Agency evaluate obsolete scrap metal (scrap which is composed of worn out metal or a metal product that has outlived it original use, such as automobile hulks, railroad cars, aluminum beverage cans, steel beams from torn down buildings, and household appliances) using the same factors. The Agency has not found sufficient data to fully evaluate unprocessed obsolete scrap metal. Therefore, in today's final rule the Agency is not expanding the scope of the exclusion from the definition of solid waste to include obsolete scrap metal. Providing an exclusion from the definition of solid waste for obsolete scrap metal at this time would be premature and is better addressed in the Definition of Solid Waste rulemaking, due to be proposed in the near future.

Second, the Agency clarifies that the exclusion for processed scrap metal being recycled applies to scrap metal that has undergone a processing step (as defined in the preamble to the proposed rule) regardless of who does the processing. In other words, a processing step may be performed by the generator, an intermediate scrap handler (e.g. broker, scrap processor), or a scrap recycler. Once the scrap metal has undergone a processing step, it may qualify for today's exclusion.

Third, the Agency has added chopping, crushing, flattening, cutting and sorting, processes typically used in the processing of scrap metal for recycling, to the definition of processed scrap metal in today's final rule. In today's final rule, the definition of processing reads: ''manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Additionally, to avoid confusion, the definition of processed scrap metal has been reworded to clarify the status of agglomerated fines, drosses and other related materials. Therefore, in today's final rule, the category of processed scrap metal now includes but is not limited to scrap metal which has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted), and, fines, drosses and related materials which have been agglomerated.'' Note that circuit boards that are shredded and being sent for recycling are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (261.4(a)(13)) see discussion following) and are not covered under the definition of excluded scrap metal.

B. Shredded Circuit Boards

1. The Proposal

In the proposed rule, EPA proposed to exclude shredded circuit boards being reclaimed from the definition of solid waste in order to facilitate their recovery. 61 F.R. 2339, 2361. The proposed exclusion was conditioned on the storage of the shredded circuit boards in containers prior to recovery that would be adequate to prevent a release of the boards to the environment. This condition was

specified as a performance standard rather than a design standard to allow the handler maximum flexibility in selecting the method of containment. Today, EPA is finalizing this exclusion as proposed with an additional limitation that shredded circuit boards excluded from RCRA jurisdiction be free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries.

2. Exclusion for Shredded Circuit Boards Conditioned on Containerized Storage Prior to Recovery

EPA explained in the proposal that shredded circuit boards merit exclusion from RCRA regulation in order to facilitate their recovery when they are properly stored in containers to prevent their release to the environment. As presented in the proposal, the necessity for the proposed exclusion for shredded circuit boards is that the process of shredding the circuit boards causes the boards to lose the scrap metal exemption (see 40 CFR § 261.6(a)(3)(ii)) that currently applies to used whole circuit boards. This scrap metal exemption allows used whole circuit boards being recycled to be shipped in commerce without being subject to RCRA regulation including generator manifesting and export requirements. The process of shredding the boards produces small fines from the whole board which are dispersible and do not meet the RCRA regulatory definition of scrap metal. The application of RCRA regulatory provisions to shredded boards may present serious disincentives to their recovery. As explained in the proposal, generator manifesting and export requirements may result in significant delays in shipments of shredded boards to recovery operations such as smelters. Many intermediate precious metal reclaimers, e.g. shredders, operate on a short cash flow and depend on prompt payment for shipments of shredded circuit boards in order to pay the generators of the used circuit boards for supplying them to the intermediate reclaimers.

For the following reasons, EPA believes that shredded circuit boards destined for reclamation when properly containerized and free of mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries are an appropriate secondary material to be excluded from RCRA regulation. As discussed in the proposal, shredding is beneficial to the recovery process. Shredding improves the recovery of the boards by improving handling of shredded boards through increasing the bulk density of the boards in the container during shipment. Shredding also improves the assaying of the shipment for base metal and precious metal content by homogenizing the load thus assuring a representative sample is taken for the assay. Shredding also destroys proprietary information from generators or manufacturers of the boards thus better assuring confidentiality to the generator or manufacturer when making a decision to recycle. Some generators may be concerned about proprietary information contained in used whole circuit boards being transferred to competitors once the boards are out of the generator's control.

Second, shredded boards have qualities which are similar to primary materials such as virgin mineral concentrates that are processed and refined for base metal and precious metal values. These qualities satisfy the criteria EPA considers when evaluating whether a partially-reclaimed solid waste is commodity-like and is not part of the waste management problem and thus is appropriate to exclude from RCRA subtitle C jurisdiction through issuance of a variance. EPA believes that these criteria are relevant in determining whether a general exclusion is justified. See 40 CFR 261.30(c)& 261.31(c). These criteria are: (1) The degree of processing the material has undergone and the degree of further processing that is required, (2) the value of the material after it has been reclaimed, (3) the degree to which the reclaimed material is like an analogous raw material, (4) the extent to which an end market for the reclaimed material is guaranteed, (5) the extent to which a material is managed to minimize loss and (6) other relevant factors (such as the presence of cyanide or other foreign materials).

Regarding the first criterion, shredded circuit boards have been processed through shredders, hammer mills and similar devices to decrease their size. Value is added to the boards, as indicated above, because the boards are easier to handle, assay and ship without concerns of generator confidentiality that might exist if the boards were shipped to the smelters as whole boards. Further processing for the shredded boards includes both smelting and refining to extract base metals such as copper and precious metals such as gold, silver and platinum group metals. And while a substantial amount of further processing remains, EPA believes that shredded circuit boards can be thought of as secondary feedstocks similar to primary ore concentrates that have undergone beneficiation and are destined for primary mineral processing and refining.

Regarding the second criterion of the value of the material after it has been reclaimed, shredded circuit boards generally have positive economic value (i.e., the smelter pays the shredder for the assayed base and precious metal value of the shipment). The typical price range for shredded circuit boards is between a negative $0.25 per lb. and $5 per lb. One recycling company reported an annual average price of shredded circuit boards of $1.50 per pound which is greater than the current market price for refined copper metal.

Regarding the third criterion of how the partially reclaimed material compares to the analogous raw material, recyclers have indicated that shredded circuit boards typically have assays of that average 10 percent copper, between one-half and one-third that of primary copper concentrates. Shredded circuit board copper assays reported in literature evaluated in completion of this rule ranged between 11 percent and 18 percent copper. Shredded circuit boards also frequently contain precious metal values such as gold, silver or platinum that enhance the economic value of the material. Moreover, the reported recycling efficiency for copper, gold, silver and platinum exceeds 90 percent for this type of material.

Although toxic metal content for primary copper concentrates is variable depending on the ore body it comes from, reported assays for circuit boards are comparable in lead and lower in arsenic content than reported primary copper concentrate assays. Although shredded circuit boards are comparatively dispersible in comparison to primary copper concentrates, the conditional requirement for the exclusion stipulates that the shredded circuit boards must be stored in containers sufficient to prevent a release to the environment prior to recovery reduces any greater likelihood of release from shredded boards in comparison to primary copper concentrates.

The fourth criterion EPA uses to evaluate partially-reclaimed secondary materials is the extent to which an end market is guaranteed for the material. Continuous demand from primary smelters for base metals and precious metals from shredded circuit boards should result from the positive economic value of the boards, the relative ease of handling and assaying of the boards and the diminishing quantities of primary copper ore concentrates. According to the Bureau of Mines Mineral Commodity Summaries 1994, reported and apparent

consumption for copper, silver and platinum group metals has either remained constant or increased between 1989 and 1993. Reported consumption of gold decreased slightly between 1989 and 1993 from 115 metric tons and 100 metric tons. Secondary gold production decreased slightly over the same period from 158 metric tons to 130 metric tons. The price of gold declined over the same period from $382 per troy ounce to $355 per troy ounce. By 1996, the price of gold has increased to over $380 per troy ounce.

The fifth criterion EPA uses to evaluate partially-reclaimed materials is the extent to which the material is managed to minimize loss. The proposed exclusion is conditioned on the proper storage of shredded circuit boards in containers prior to recovery. As mentioned in the proposal, the shredded boards are usually stored in super sacks (sacks that are reinforced woven resin and designed to accommodate bulk shipments), gaylord containers (also known as tri-wall boxes composed of three layers of cardboard with two layers of corrugation) and 55 gallon drums. Open bulk shipments of board by rail, truck or barge are not within the scope of this exclusion. In addition to the storage requirement, the economic value of the boards also provides an incentive for handlers to prevent releases to the environment. At an average market value of $1.50 per pound for one recycler, the incentive to prevent releases is substantial. The Agency notes that containerization in and of itself was not the only reason the Agency concluded that shredded circuit boards should be excluded from the definition of solid waste. The other five factors supported this determination as well.

Finally, EPA considers other relevant factors when evaluating the exclusion of partially-reclaimed materials from RCRA jurisdiction through the variance. In the context of shredded circuit boards, other relevant factors include: (1) The presence of both materials possibly attached to printed circuit boards that are ordinarily outside of the definition of scrap metal such as mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries, and (2) the frequency of foreign materials mixed with but not part of the circuit board itself. EPA's concern about these materials is discussed below.

3. Limitation on Mercury Switches, Mercury Relays, Nickel-Cadmium Batteries and Lithium Batteries

Printed circuit boards may contain or be incorporated into electronic products which contain mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries. EPA is concerned about the potential environmental impact of these materials that are associated with printed circuit board production and management after the boards are spent. Ordinarily, commercial printed circuit board recyclers, both intermediate processors (e.g. shredders) and smelters, do not want mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries in shipments of shredded boards sent from the intermediate processor to the smelter. However, because these items may be very small, they may, on occasion, escape visual inspection and become shredded along with printed circuit boards. When this happens, EPA is concerned about the potential release of mercury or cadmium to the environment. For this reason, EPA is limiting the scope of the exclusion for shredded boards to shipments that are free of mercury switches, mercury relays, nickel-cadmium batteries or lithium batteries. Free of these materials means that mercury switches, mercury relays, nickel-cadmium batteries and lithium batteries are not or have not been part of the batch of circuit boards shredded to add value. In addition, EPA reiterates that in enforcement actions that it is the respondent in the action who bears the burden of proof in documenting that a material for which an exclusion is claimed from the definition of solid waste meets the appropriate regulatory definition or exclusion. 40 CFR 261.2(f). Shredded circuit boards that are not free of mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries when reclaimed are solid wastes. This is so because these used shredded circuit boards are spent materials. Spent materials being reclaimed are solid wastes that, when they exhibit a characteristic or are listed, are also hazardous wastes. 40 CFR 261.1(b)(1), 261.2(c)(3). As stated in the proposal, EPA established in 1992 that whole used circuit boards could be considered scrap metal. The whole used circuit boards are therefore exempt from RCRA regulation. See 40 CFR 261.6(a)(3)(ii) stating scrap metal being recycled is exempt from RCRA regulation. (Please note that whole used circuit boards which contain mercury switches, mercury relays, nickel-cadmium batteries, or lithium batteries also do not meet the definition of scrap metal because mercury (being a liquid metal) and batteries are not within the scope of the definition of scrap metal. See 50 F.R. 614, 624 (January 4, 1985).) As stated in the proposal shredded circuit boards do not meet the definition of scrap metal because the shredded material contains fines which are too small to qualify as scrap metal. Shredded circuit boards that are not free of mercury switches, mercury relays, nickel-cadmium batteries, and lithium batteries would be subject to applicable parts of RCRA regulation, 40 CFR Parts 260 through 266, Part 268, Part 270, Part 273 and Part 124. Shredded circuit boards with economically recoverable quantities of precious metals are still eligible for conditional exemption from regulation under 40 CFR Part 266 Subpart F. This provision allows recyclable materials containing an economically recoverable amount of precious metals to be exempt from many RCRA regulatory provisions. However, these materials are still subject to manifesting, export and speculative accumulation requirements. 40 CFR 266.70.

4. Clarification of Regulatory Status of Secondary Materials Associated With the Generation or Management of Circuit Boards

Several commenters requested clarification in today's rule about the current regulatory status of secondary materials associated with the generation or management of printed circuit boards. These materials include: spent solder baths (pot dumps), sweeps, baghouse dust, and solder dross. These commenters also requested exclusion of these materials from RCRA jurisdiction in today's rule.

Spent solder baths, also known as pot dumps, are solidified pieces of tin-lead solder baths used in the production of printed circuit boards. Prior to 1993, EPA had classified spent solder baths as spent materials, which, absent the scrap metal designation, would be fully regulated under RCRA hazardous waste regulation. In 1993, EPA issued a letter to the Lead Industries Association stating that spent solder baths meet the definition of scrap metal and are therefore exempt from RCRA regulation under the regulatory exemption for scrap metal being recycled. This interpretation continues to be the Agency view.

Sweeps refer alternatively to a powdered material that is a residue of thermal recovery of precious metal-bearing secondary material (often ash that is crushed into particulate form in a ball mill or similar device) or particulate material that is collected from firms handling precious metals such as jewelers and metal finishers. Sweeps have been previously classified

by EPA as a by-product.[2] As such, when sent for reclamation, sweeps are not solid waste and are excluded from RCRA jurisdiction regulation when considered hazardous solely by exhibiting a characteristic. Characteristic by-products are not solid wastes when reclaimed. 40 CFR 261.2(c)(3). In contrast, when sweeps are derived from source material that meets the description of a listed hazardous waste, the sweeps are solid wastes that are also hazardous wastes and are regulated under the appropriate RCRA regulation provisions. 40 CFR 261.2(c)(3). For example, often combustible material such as a rag, filter or paper is used to clean up a secondary material such as a spent solvent that may: (1) contain precious metals and (2) meets one of the F001 through F005 listing descriptions for solvents. The rag, filter or paper will be burned to an ash that it homogenized in order to assay its precious metal content. The ash when crushed is turned into a sweep. The sweep carries the F-listed hazardous waste code that was associated with the original source material (i.e., solvent). Listed by-products, in contrast to characteristic by-products, are solid and hazardous wastes when reclaimed.

EPA has classified baghouse dust from precious metal recovery furnaces as a sludge.[3] As with the by-product classification for sweeps, baghouse dust is not a solid and hazardous waste when it would be considered hazardous only for exhibiting a characteristic such as toxicity. However, if the source material to the furnace contained a listed hazardous waste, then the baghouse dust would be considered a solid and hazardous waste due to its classification as a listed sludge being reclaimed. Also as with the sweeps, even if the baghouse dust is a listed sludge, it may still be conditionally exempt from RCRA regulation under 40 CFR Part 266 Subpart F if it contains economically recoverable levels of precious metals.

Finally, EPA currently classifies solder dross as a characteristic by-product when reclaimed. As such, this material is already excluded from the definition of solid waste and not regulated under the RCRA regulations. Therefore, including solder dross in today's final rule would be duplicative.

[2] August 26, 1992 memorandum from Sylvia K. Lowrance, Director, U.S.E.P.A., Office of Solid Waste to Waste Management Division Directors U.S.E.P.A., Regions I–X on the Regulatory Status of Printed Circuit Boards.

[3] *Ibid.*

IX. State Authority

A. Applicability of Rules in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR Part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Today's treatment standards for wood preserving wastes are being promulgated pursuant to sections 3004 (d) through (k), and 3004(m), of RCRA (42 U.S.C. 6924 (d) through (k), and 6924(m)). Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate that this rule is a self-implementing provision of HSWA.

B. Abbreviated Authorization Procedures

In the August 22, 1995, LDR Phase IV proposed rule, EPA proposed a set of streamlined authorization procedures that would apply to new rules that were minor or routine in nature. This procedure was designed to expedite the authorization process by reducing the scope of a State's submittal, for authorization, to a State certification and copies of applicable regulations and statutes. EPA would then conduct a short review of the State's request, primarily consisting of a completeness check (see 60 FR 43686 for a full description of the proposed procedures). In the HWIR-Media proposed rule, EPA proposed another set of abbreviated authorization procedures for more significant rulemakings, called Category 2 (see 61 FR 18780, April 29, 1996). In this latter proposal, EPA designated the procedures outlined in the Phase IV proposal as Category 1. In that proposal, EPA also presented an expanded discussion on the need for and the intent of the streamlined procedures. EPA also proposed a set of modified Category 1 procedures for the authorization of a proposed rule for mineral processing wastes on January 25, 1996 (see 62 FR 2338).

Although EPA is firmly committed to streamlining the RCRA State authorization procedures, the Agency has decided not to finalize the proposed Category 1 authorization procedures in today's notice. EPA believes that public comments from the August 22, 1995, and January 25, 1996, proposals and comments submitted for the recent HWIR-contaminated media proposal should all be considered before finalizing new procedures for authorization. This full consideration will enable EPA to make the best decision regarding how the authorization process should work. EPA intends to address all significant public comments for all three notices and finalize streamlined authorization procedures when the HWIR-Media rule is promulgated.

C. Effect on State Authorization

Because today's Phase IV LDR rule is being promulgated under HSWA authority, those sections of today's rule that expand the coverage of the LDR program (e.g., to newly listed wood preserving wastes) would be implemented by EPA on the effective date of today's rule in authorized States until their programs are modified to adopt these rules and the modification is approved by EPA. These new treatment standards also result in a more stringent Federal program than before. Therefore States are required to adopt them in accordance with the requirements below.

Because today's rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of

requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire January 1, 2003. (See § 271.24 and 57 FR 60132, December 18, 1992.)

Section 271.21(e)(2) requires that States with final authorization must modify their programs to reflect Federal program changes and to subsequently submit the modification to EPA for approval. The deadline by which the State would have to modify its program to adopt these regulations is specified in section 271.21(e). This deadline can be extended in certain cases (see section 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, states with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In most cases, EPA expects that it will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

States that submit official applications for final authorization less than 12 months after the effective date of these regulations may, but are not required to include standards equivalent to these regulations in their application. However, the State must modify its program by the deadline set forth in § 271.21(e). States that submit official applications for final authorization 12 months after the effective date of these regulations must include standards equivalent to these regulations in their application. The requirements a State must meet when submitting its final authorization application are set forth in 40 CFR 271.3.

D. Less Stringent Requirements

Section 3009 of RCRA allows States to impose standards that are more stringent than the Federal program (see 40 CFR 270.1(i)). Thus, for those Federal changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. EPA views the parts of today's rule other than the new treatment standards for newly listed wood preserving wastes to be less stringent. However, since these other parts of today's final rule make significant improvements to the LDR program, EPA strongly encourages States to adopt and become authorized for them.

X. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ''significant.'' The Order defines a ''significant'' regulatory action as one that ''is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The Agency estimated the costs of today's final rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considered compliance cost and economic impacts for newly listed and identified wastes affected by this rule. This rule covers three wood preserving wastes (F032, F034, and F035). EPA has determined that this rule is significant according to the definition in Executive Order 12866. Accordingly, this rule has been reviewed by the Office of Management and Budget.

Detailed discussions of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's final rule, followed by a presentation of the cost, economic impact and benefit results may be found in the background document, ''Regulatory Impact Analysis of the Final Phase IV Land Disposal Restrictions Rule,'' which was placed in the docket for today's final rule.

1. Methodology Section

The Agency estimated the volumes of waste affected by today's rule to determine the national level incremental costs (for both the baseline and post-regulatory scenarios), economic impacts (defined as the difference between the industrial activity under post-regulatory conditions and the industrial activity in the absence of regulation), and benefits (including estimation of pollutant loadings reductions, estimation of reductions in exceedences of health-based levels, and qualitative description of the potential benefits.) The procedure for estimating the volumes of newly listed wood preserving wastes affected by today's final rule is detailed in the background document ''Regulatory Impact Analysis of the Final Phase IV Land Disposal Restrictions Rule for Wood Preserving Wastes, F032, F034 and F035,'' which was placed in the docket for today's final rule.

2. Volume Results

The Agency has estimated that 469 active facilities generate an estimated range of 3,860 tons to 18,808 tons annually of newly listed wood preserving wastes including F032, F034, and F035 nonwastewaters. The Agency has estimated that active 469 facilities generate an estimated range of 3,860 tons to 18,808 tons annually of newly listed wood preserving wastes including F032, F034, and F035 nonwastewaters. In addition the Agency has estimated that there are approximately 1000 inactive or abandoned wood preserving sites that have contaminated soil and debris that may require some type of remediation. One Agency estimate for the total volume of wood preserving contaminated soil and debris requiring either in-situ or ex-situ treatment is 37 million tons based on an extrapolation of the average quantity of excavated soils from wood preserving Superfund sites. For purposes of the capacity analysis in today's rule, the Agency is using an alternate estimate of over 100,000 tons as the basis of setting the national capacity variance for wood preserving soil and debris.

3. Cost Results

EPA estimated the incremental treatment cost attributable to Phase IV LDRs to total between $3.1 million and $17.7 million per year for generators of newly listed wood preserving wastes. In addition, EPA has estimated that administrative requirements for reporting and record keeping from today's rule will result in a cost of $0.2 million per year for owners and

operators of inactive and abandoned wood preserving sites. This estimate is based on the costs of thermal destruction and stabilization of F032 and F034 non-wastewaters; the costs of stabilization of F035 non-wastewaters; and the incremental cost of disposing of the residuals from the treatment of the 3,860–18,808 tons of waste.

Today's final rule provides a two year capacity variance during which cleanups of these sites may continue without being affected by the Land Disposal Restriction treatment standards promulgated in today's rule. This provision will reduce the costs of managing media contaminated by these listed wastes to the extent that facility operators and site managers take advantage of it. Also, many sites are using in-situ remedies where no soil is excavated at the site. This type of remediation does not trigger any of the requirements promulgated in today's rule.

Prospectively, future rulemakings such as the Hazardous Waste Indentification Final Rule for contaminated media may result in quantities of contaminated soil being removed from RCRA jurisdiction or subject to less rigorous cleanup levels than the current universal treatment standards. Inactive and abandoned wood preserving sites may avail themselves of exemptions from today's promulgated treatment standards such as a no-migration petition (40 CFR Part 268.6) or site specific treatability variances (40 CFR Part 268.44(h)). Further reductions in treatment cost will accrue to the extent that (1) EPA acts to remove media contaminated with these listed wastes from RCRA jurisdiction and (2) facility operators and site managers petition for, and EPA grants, these no-migration petitions and treatability variances. For the foregoing reasons, EPA does not believe that incremental treatment costs will accrue to contaminated media cleanups at inactive or abandoned wood preserving sites. Accordingly, EPA has not estimated incremental treatment costs that would result from the selection of a more expensive remedy in order to avoid triggering LDR treatment requirements. Although EPA believes that this scenario is unlikely, such costs are possible.

With respect to media contaminated with listed wood preserving wastes, EPA's estimate of the costs of today's final rule includes only the administrative costs of applying for treatability variances which the Agency has the discretion to grant subsequent to this action. EPA estimates that there are 35 million tons of such contaminated media that incur administrative costs for treatability variances, waste analysis plans, and other RCRA activities. The Agency will estimate the volume and cost of remediating contaminated media as affected by the HWIR Contaminated Media final rule. This will include the evaluation of all soils and sludges that would otherwise have been treated in-situ whose management and treatment costs could change, either because of provisions of the HWIR Contaminated Media final rule; changes in relative prices for alternative treatment technologies; or increases in market prices of treatment resulting from such shifts in demand. EPA will use the same baseline for estimating these costs that the Agency uses to estimate cost savings.

4. Economic Impact Results

The Agency has estimated the economic impacts of today's final rule to be small. EPA conducted an initial screening analysis of the impacts of the Phase IV LDR rule on small wood preserving facilities. Results of the initial screening analysis indicate that the cost of compliance for the majority of active wood preserving facilities that use inorganic wood preservatives and generate F035 wastes is less than one percent of total their estimated revenues. In contrast, active wood preserving facilities that use creosote and pentachlorophenol as a preservatives and generated F032 and F034 wastes have been estimated to incur upper bound compliance costs that may exceed one percent of this subsector's revenues.

Some active wood preserving facilities that use creosote and pentachlorophenol as preservatives may incur upper bound compliance costs that will exceed one percent of their estimated revenues. EPA believes, however, that in looking at the affected universe of active wood preserving facilities, today's final rule will not constitute a significant impact to a substantial number of them. First, only 18 or roughly 4 percent of over 469 wood preserving facilities are expected to incur compliance costs that exceed 2 percent of their revenues or more than 25 percent of their long run profits. Of the remaining 49 facilities or 10 percent with upper bound estimated compliance costs exceeding 1 percent of their revenue, none are expected to incur compliance costs exceeding 2 percent of firm revenues or 25 percent of long term profits. Second, industry information suggests that there is a trend within the wood preserving industry away from using pentachlorophenol as a preservative. Product substitution to other nontoxic or toxic preservatives resulting in less expensive treatment of wastes may result in lower costs to these wood preserving facilities. Finally, data collected to estimate the upper bound quantity of F032 generated at these facilities included values for mixed F032/F034/F035 wastes (meaning that the generator reported combined volumes for F032 and other wood preserving wastes) such that the total volume of F032 is probably much lower than the data suggests.

For inactive and abandoned wood preserving sites that require remediation, EPA believes that there should not be a significant economic impact resulting from today's rule. Of the estimated 1000 sites, based on the frequency of wood preserving Superfund cleanups, EPA projects that over 200 inactive and abandoned sites will use in-situ remedies and thus not incur any costs under today's rule. In addition, EPA projects that the remaining 800 sites will incur only administrative costs associated with recordkeeping and reporting requirements that average $240 in annualized cost per site. Given that the reported average cost of cleaning up wood preserving Superfund sites is $9.3 million,[4] EPA believes that these administrative costs should not significantly affect remedial activities at inactive and abandoned wood preserving sites.

5. Benefit Estimate Results

EPA has not performed analysis sufficient to estimate risks to actual individuals or populations exposed to these listed wastes under conditions of Subtitle C management without LDRs. However, EPA has completed a qualitative benefits analysis of the types of benefits that may result from today's rule. This analysis is described in greater detail in the regulatory impact analysis for newly identified listed wood preserving hazardous waste placed in today's docket. Benefits for this final rule as measured by individual or population risk reduction require substantially more information than the Agency has available now. Further, site specific information on waste characterization, hydrogeological parameters, meteorological conditions and demographic patterns would be needed for a representative number of facilities before national estimates of

[4] Shreekant Gupta, George Van Houtven, and Maureen L. Cropper, ''Do Benefits and Costs Matter in Environmental Regulation?'', in *anaylzing Superfund, Economics, Science and Law*, ed. Richard L. Revesz and Richard B. Stewart (Washington, D.C.: Resources for the Future, 1996), p. 97.

population risk could be calculated. The Agency does not have sufficient information to complete a quantitative individual or population risk estimate.

While waste management rules to protect ground water have been promulgated in the past to control otherwise unacceptable individual risks, it is unusual to predict high 'population risks' unless there is an unusually large water supply well impacted by the facility, simply because ground water contamination generally moves slowly and locally. It has been the agency's experience that regulations with land disposal restrictions have been found to produce relatively small, quantifiable population risk reductions to individuals exposed to contaminated groundwater via private wells. For example, in the analysis of Land Disposal Restrictions Phase II (40 CFR Parts 148, et al.) for organic toxicity wastes, some of the individual risk were in the range of 10^{-4}, the population risk reductions were found to be only about 0.22 cases of cancer per year.

If population densities and prevalence of private ground water wells around wood preserving facilities are similar to other waste management facilities, it is the Agency's expectation that land disposal restrictions for hazardous wood preserving wastes would also achieve relatively small, quantifiable population risk reductions. For these reasons and the data limitations cited above, the Agency has not attempted to address the quantification of population risk reduction for this final rule.

Nevertheless, the Agency has concluded that LDR rules like today's rule may produce benefits in the area of ecological risk reduction and reduced natural resource damage. EPA has not developed a quantitative assessment of these benefits categories because of budgetary and data limitations.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 *et seq.*, when an agency publishes a notice of rulemaking, for a rule that will have a significant effect on a substantial number of small entities, the agency must prepare and make available for public comment a regulatory flexibility analysis that considers the effect of the rule on small entities (i.e.: small businesses, small organizations, and small governmental jurisdictions).

In assessing the regulatory approach for dealing with small entities in today's proposed rule, the Agency had to consider that due to the statutory requirements of the RCRA LDR program, no legal avenues exist for the Agency to provide relief from the LDR's for small entities. The only relief available for small entities is the existing small quantity generator provisions and conditionally exempt small quantity generator exemptions found in 40 CFR 262.11–12, and 261.5, respectively. These exemptions basically prescribe 100 kilograms (kg) per calendar month generation of hazardous waste as the limit below which one is exempted from complying with the RCRA standards.

Given this statutory constraint, the Agency was unable to frame a series of small entity options from which to select the lowest cost approach; rather, the Agency was legally bound to regulate the land disposal of the hazardous wastes covered in today's rule without regard to the size of the entity being regulated. For the reasons stated above in the economic impact discussion of section X.A, I hereby certify that today's final rule will not have a significant impact on a substantial number of small entities in the wood preserving sector.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMBRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, Tribal, and local governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and Tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. When a written statement is needed for an EPA rule, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including Tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, giving them meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising them on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and Tribal governments, in the aggregate, or the private sector in any one year. EPA has estimated that the total potential cost to State, local, and Tribal governments would not exceed approximately $200,000 per year over ten years. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA.

D. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA: OSWER ICR No. 1442.14 would amend the existing ICR approved under OMB Control No. 2050–0085. This ICR has not been approved by OMB and the information collection requirements, although they are less stringent than those previously required by the EPA, are not enforceable until OMB approves the ICR. EPA will publish a document in the **Federal Register** when OMB approves the information collection requirements showing the valid OMB control number. Until then, persons are not required to respond to collections of information in this ICR.

Copies of this ICR may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, D.C. 20460 or by calling (202) 260–2740. Include the ICR number in any request.

The annual public reporting and recordkeeping burden for this collection of information is estimated to be reduced by 8 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and comply with any previously applicable instructions and requirements, train personnel to be able to respond to a

collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Send comments on the Agency's burden reduction, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection of techniques to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, D.C. 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence.

XI. Environmental Justice

A. Applicability of Executive Order 12898

EPA is committed to address environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agencies goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities, and all people live in clean and sustainable communities.

B. Potential Effects

Today's rule is intended to reduce risks of disposing hazardous wastes, and to benefit all populations. This rule is not expected to cause any disproportionate impacts to minority or low income communities versus affluent or non-minority communities.

XII. Submission to Congress and General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: April 18, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, Title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for Part 148 continues to read as follows:

Authority: Section 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*

2. Section 148.18 is amended by revising the heading, redesignating paragraphs (a) through (c) as (c) through (e) respectively, and by adding paragraphs (a) and (b) to read as follows:

§ 148.18 Waste specific prohibitions—newly listed and identified wastes.

(a) Effective August 11, 1997, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers F032, F034, F035 are prohibited from underground injection.

(b) Effective May 12, 1999, the wastes specified in 40 CFR part 261 as EPA Hazardous waste numbers F032, F034, F035 that are mixed with radioactive wastes are prohibited from underground injection.

* * * * *

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Subpart A—General

3. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

4. Section 261.1 is amended by adding paragraphs (c) (9) through (12) to read as follows:

§ 261.1 Purpose and scope.

* * * * *

(c) * * *

(9) ''Excluded scrap metal'' is processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal.

(10) ''Processed scrap metal'' is scrap metal which has been manually or physically altered to either separate it into distinct materials to enhance economic value or to improve the handling of materials. Processed scrap metal includes, but is not limited to scrap metal which has been baled, shredded, sheared, chopped, crushed, flattened, cut, melted, or separated by metal type (i.e., sorted), and, fines, drosses and related materials which have been agglomerated. (Note: shredded circuit boards being sent for recycling are not considered processed scrap metal. They are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (§ 261.4(a)(13)).

(11) ''Home scrap metal'' is scrap metal as generated by steel mills, foundries, and refineries such as turnings, cuttings, punchings, and borings.

(12) ''Prompt scrap metal'' is scrap metal as generated by the metal working/fabrication industries and includes such scrap metal as turnings, cuttings, punchings, and borings. Prompt scrap is also known as industrial or new scrap metal.

5. Section 261.2(c) is amended by revising table 1 to read as follows:

§ 261.2 Definition of solid waste.

* * * * *

(c) * * *

TABLE 1

	Use constituting disposal (§ 261.2(c)(1)) (1)	Energy recovery/fuel (§ 261.2(c)(2)) (2)	Reclamation (§ 261.2(c)(3)) (3)	Speculative accumulation (§ 261.2(c)(4)) (4)
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)		(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)		(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)		
Scrap metal other than excluded scrap metal (see 261.1(c)(9))	(*)	(*)	(*)	(*)

Note: The terms ''spent materials'', ''sludges'', ''by-products'', and ''scrap metal'' and ''processed scrap metal'' are defined in § 261.1.

* * * * *

6. Section 261.4(a) is amended by adding paragraphs (a) (13) and (14) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(13) Excluded scrap metal (processed scrap metal, unprocessed home scrap metal, and unprocessed prompt scrap metal) being recycled.

(14) Shredded circuit boards being recycled provided that they are:

(i) Stored in containers sufficient to prevent a release to the environment prior to recovery; and

(ii) Free of mercury switches, mercury relays and nickel-cadmium batteries and lithium batteries.

* * * * *

7. Section 261.6 is amended by revising paragraph (a)(3)(ii) to read as follows:

§ 261.6 Requirements for recyclable materials.

(a) * * *

(3) * * *

(ii) Scrap metal that is not excluded under § 261.4(a)(13);

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

8. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

9. Section 268.1 is amended by revising paragraph (e) to read as follows:

§ 268.1 Purpose, scope and applicability.

* * * * *

(e) The following hazardous wastes are not subject to any provision of part 268:

(1) Waste generated by small quantity generators of less than 100 kilograms of non-acute hazardous waste or less than 1 kilogram of acute hazardous waste per month, as defined in § 261.5 of this chapter;

(2) Waste pesticides that a farmer disposes of pursuant to § 262.70;

(3) Wastes identified or listed as hazardous after November 8, 1984 for which EPA has not promulgated land disposal prohibitions or treatment standards;

(4) *De minimis* losses of characteristic wastes to wastewaters are not considered to be prohibited wastes and are defined as losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; rinsate from empty containers or from containers that are rendered empty by that rinsing; and laboratory wastes not exceeding one per cent of the total flow of wastewater into the facility's headworks on an annual basis, or with a combined annualized average concentration not exceeding one part per million in the headworks of the facility's wastewater treatment or pretreatment facility.

* * * * *

10. Section 268.4 is amended by revising paragraphs (a)(2)(iv), and (a)(4) introductory text to read as follows:

§ 268.4 Treatment surface impoundment exemption.

(a) * * *

(2) * * *

(iv) *Recordkeeping:* Sampling and testing and recordkeeping provisions of §§ 264.13 and 265.13 of this chapter apply.

* * * * *

(4) The owner or operator submits to the Regional Administrator a written certification that the requirements of § 268.4(a)(3) have been met. The following certification is required:

* * * * *

11. Section 268.7 is amended by revising the section heading: revising paragraph (a); by removing paragraph (b)(2) and redesignating paragraphs (b)(3) through (b)(7) as (b)(2) through (b)(6) respectively; and by revising the introductory text of paragraph (b), and revising paragraphs (b)(1), newly designated paragraphs (b)(2) through (b)(4), (c)(1), and (c)(2) to read as follows:

§ 268.7 Testing, tracking, and recordkeeping requirements for generators, treaters, and disposal facilities.

(a) *Requirements for generators:* (1) Determine if the waste has to be treated before being land disposed, as follows: A generator of a hazardous waste must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in § 268.40 or § 268.45. This determination can be made in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using test method 1311 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, as referenced in § 260.11 of this chapter, depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste's extract. In addition, some hazardous wastes must be treated by particular treatment methods before they can be land disposed. These treatment standards are also found in § 268.40, and are described in detail in § 268.42, Table 1. These wastes do not need to be tested (however, if they are

in a waste mixture, other wastes with concentration level treatment standards would have to be tested). If a generator determines they are managing a waste that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of § 268.9 of this part in addition to any applicable requirements in this section.

(2) If the waste does not meet the treatment standard: With the initial shipment of waste to each treatment or storage facility, the generator must send a one-time written notice to each treatment or storage facility receiving the waste, and place a copy in the file. The notice must include the information in column ''268.7(a)(2)'' of the Generator Paperwork Requirements Table in § 268.7(a)(4). No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the generator's file.

(3) If the waste meets the treatment standard at the original point of generation:

(i) With the initial shipment of waste to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each treatment, storage, or disposal facility receiving the waste, and place a copy in the file. The notice must include the information indicated in column ''268.7(a)(3)'' of the Generator Paperwork Requirements Table in § 268.7(a)(4) and the following certification statement, signed by an authorized representative:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

(ii) If the waste changes, the generator must send a new notice and certification to the receiving facility, and place a copy in their files. Generators of hazardous debris excluded from the definition of hazardous waste under § 261.3(f) of this chapter are not subject to these requirements.

(4) For reporting, tracking and recordkeeping when exceptions allow certain wastes that do not meet the treatment standards to be land disposed: There are certain exemptions from the requirement that hazardous wastes meet treatment standards before they can be land disposed. These include, but are not limited to case-by-case extensions under § 268.5, disposal in a no-migration unit under § 268.6, or a national capacity variance or case-by-case capacity variance under subpart C of this part. If a generator's waste is so exempt, then with the initial shipment of waste, the generator must send a one-time written notice to each land disposal facility receiving the waste. The notice must include the information indicated in column ''268.7(a)(4)'' of the Generator Paperwork Requirements Table below. If the waste changes, the generator must send a new notice to the receiving facility, and place a copy in their files.

GENERATOR PAPERWORK REQUIREMENTS TABLE

Required information	§ 268.7 (a)(2)	§ 268.7 (a)(3)	§ 268.7 (a)(4)	§ 268.7 (a)(9)
1. EPA Hazardous Waste and Manifest numbers	✔	✔	✔	✔
2. Statement: this waste is not prohibited from land disposal			✔	
3. The waste is subject to the LDRs. The constituents of concern for F001–F005, and F039, and underlying hazardous constituents (for wastes that are not managed in a Clean Water Act (CWA) or CWA-equivalent facility), unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice	✔	✔		
4. The notice must include the applicable wastewater/ nonwastewater category (see §§ 268.2(d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)	✔	✔		
5. Waste analysis data (when available)	✔	✔	✔	
6. Date the waste is subject to the prohibition			✔	
7. For hazardous debris, when treating with the alternative treatment technologies provided by § 268.45: the contaminants subject to treatment, as described in § 268.45(b); and an indication that these contaminants are being treated to comply with § 268.45	✔		✔	
8. A certification is needed (see applicable section for exact wording)		✔		✔

(5) If a generator is managing and treating prohibited waste in tanks, containers, or containment buildings regulated under 40 CFR 262.34 to meet applicable LDR treatment standards found at § 268.40, the generator must develop and follow a written waste analysis plan which describes the procedures they will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1, § 268.45, however, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

(i) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain all information necessary to treat the waste(s) in accordance with the requirements of this part, including the selected testing frequency.

(ii) Such plan must be kept in the facility's on-site files and made available to inspectors.

(iii) Wastes shipped off-site pursuant to this paragraph must comply with the notification requirements of § 268.7(a)(3).

(6) If a generator determines that the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. If a generator determines that the waste is restricted based on testing this waste or an extract developed using the test method 1311 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, as referenced in § 260.11 of this chapter, and all waste analysis data must be retained on-site in the generator's files.

(7) If a generator determines that he is managing a restricted waste that is

excluded from the definition of hazardous or solid waste or exempt from Subtitle C regulation, under 40 CFR 261.2 through 261.6 subsequent to the point of generation (including deactivated characteristic hazardous wastes managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR 261.4(a)(2), or are CWA-equivalent), he must place a one-time notice stating such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from RCRA Subtitle C regulation, and the disposition of the waste, in the facility's file.

(8) Generators must retain on-site a copy of all notices, certifications, waste analysis data, and other documentation produced pursuant to this section for at least three years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal. The three year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator. The requirements of this paragraph apply to solid wastes even when the hazardous characteristic is removed prior to disposal, or when the waste is excluded from the definition of hazardous or solid waste under 40 CFR 261.2 through 261.6, or exempted from Subtitle C regulation, subsequent to the point of generation.

(9) If a generator is managing a lab pack containing hazardous wastes and wishes to use the alternative treatment standard for lab packs found at § 268.42(c):

(i) With the initial shipment of waste to a treatment facility, the generator must submit a notice that provides the information in column ''§ 268.7(a)(9)'' in the Generator Paperwork Requirements Table of paragraph (a)(4) of this section, and the following certification. The certification, which must be signed by an authorized representative and must be placed in the generator's files, must say the following:

I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under appendix IV to 40 CFR part 268 and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at 40 CFR 268.42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

(ii) No further notification is necessary until such time that the wastes in the lab pack change, or the receiving facility changes, in which case a new notice and certification must be sent and a copy placed in the generator's file.

(iii) If the lab pack contains characteristic hazardous wastes (D001–D043), underlying hazardous constituents (as defined in § 268.2(i)) need not be determined.

(iv) The generator must also comply with the requirements in paragraphs (a)(6) and (a)(7) of this section.

(10) Small quantity generators with tolling agreements pursuant to 40 CFR 262.20(e) must comply with the applicable notification and certification requirements of paragraph (a) of this section for the initial shipment of the waste subject to the agreement. Such generators must retain on-site a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the Administrator.

(b) Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans as required by 40 CFR 264.13 (for permitted TSDs) or 40 CFR 265.13 (for interim status facilities). Such testing must be performed as provided in paragraphs (b)(1), (b)(2) and (b)(3) of this section.

(1) For wastes with treatment standards expressed as concentrations in the waste extract (TCLP), the owner or operator of the treatment facility must test an extract of the treatment residues, using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 as incorporated by reference in § 260.11 of this chapter), to assure that the treatment residues extract meet the applicable treatment standards.

(2) For wastes with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to assure that they meet the applicable treatment standards.

(3) A one-time notice must be sent with the initial shipment of waste to the land disposal facility. A copy of the notice must be placed in the treatment facility's file.

(i) No further notification is necessary until such time that the waste or receiving facility change, in which case a new notice must be sent and a copy placed in the treatment facility's file.

(ii) The one-time notice must include these requirements:

TREATMENT FACILITY PAPERWORK REQUIREMENTS TABLE

Required information	§ 268.7(b)
1. EPA Hazardous Waste and Manifest numbers	✔
2. The waste is subject to the LDRs. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents (for wastes that are not managed in a Clean Water Act (CWA) or CWA-equivalent facility), unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.	✔
3. The notice must include the applicable wastewater/ nonwastewater category (see §§ 268.2(d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)	✔
4. Waste analysis data (when available)	✔
5. A certification statement is needed (see applicable section for exact wording)	✔

(4) The treatment facility must submit a one-time certification signed by an authorized representative with the initial shipment of waste or treatment residue of a restricted waste to the land disposal facility. The certification must state:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR 268.40 without impermissible dilution of the

prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(i) A copy of the certification must be placed in the treatment facility's on-site files. If the waste or treatment residue changes, or the receiving facility changes, a new certification must be sent to the receiving facility, and a copy placed in the file.

(ii) Debris excluded from the definition of hazardous waste under § 261.3(e) of this chapter (i.e., debris treated by an extraction or destruction technology provided by Table 1, § 268.45, and debris that the Director has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of paragraph (d) of this section rather than the certification requirements of this paragraph.

(iii) For wastes with organic constituents having treatment standards expressed as concentration levels, if compliance with the treatment standards is based in whole or in part on the analytical detection limit alternative specified in § 268.40(d), the certification, signed by an authorized representative, must state the following:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in 268.42, Table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good-faith efforts to analyze for such constituents. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

* * * * *

(c) * * *

(1) Have copies of the notice and certifications specified in paragraph (a) or (b) of this section.

(2) Test the waste, or an extract of the waste or treatment residue developed using test method 1311 (the Toxicity Characteristic Leaching Procedure), described in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 as incorporated by reference in § 260.11 of this chapter), to assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in subpart D of this part. Such testing must be performed according to the frequency specified in the facility's waste analysis plan as required by § 264.13 or § 265.13 of this chapter.

* * * * *

12. Section 268.9 is amended by revising paragraph (a) and (d)(1)(ii) to read as follows:

§ 268.9 Special rules regarding wastes that exhibit a characteristic.

(a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subpart D of this part. For purposes of part 268, the waste will carry the waste code for any applicable listed waste (Part 261, Subpart D). In addition, where the waste exhibits a characteristic, the waste will carry one or more of the characteristic waste codes (Part 261, Subpart C), except when the treatment standard for the listed waste operates in lieu of the treatment standard for the characteristic waste, as specified in paragraph (b) of this section. If the generator determines that their waste displays a hazardous characteristic (and is not D001 nonwastewaters treated by CMBST, RORGS, OR POLYM of § 268.42, Table 1), the generator must determine the underlying hazardous constituents (as defined at § 268.2(i)) in the characteristic waste.

* * * * *

(d) * * *

(1) * * *

(ii) A description of the waste as initially generated, including the applicable EPA hazardous waste code(s), treatability group(s), and underlying hazardous constituents (as defined in § 268.2(i)), unless the waste will be treated and monitored for all underlying hazardous constituents. If all underlying hazardous constituents will be treated and monitored, there is no requirement to list any of the underlying hazardous constituents on the notice.

* * * * *

Subpart C—Prohibitions on Land Disposal

13. Section 268.30 is revised to read as follows:

§ 268.30 Waste specific prohibitions—wood preserving wastes.

(a) Effective August 11, 1997, the following wastes are prohibited from land disposal: the wastes specified in 40 CFR part 261 as EPA Hazardous Waste numbers F032, F034, and F035.

(b) Effective May 12, 1999, the following wastes are prohibited from land disposal: soil and debris contaminated with F032, F034, F035; and radioactive wastes mixed with EPA Hazardous waste numbers F032, F034, and F035.

(c) Between May 12, 1997 and May 12, 1999, soil and debris contaminated with F032, F034, F035; and radioactive waste mixed with F032, F034, and F035 may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in § 268.5(h)(2) of this part.

(d) The requirements of paragraphs (a) and (b) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in Subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under § 268.44; or

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to those wastes covered by the extension.

(e) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Universal Treatment Standard levels of § 268.48 of this part, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.

§§ 268.32, 268.33, 268.34, 268.35 and 286.36 [Removed and Reserved]

14. Sections 268.32, 268.33, 268.34, 268.35, and 268.36 are removed and reserved.

Subpart D—Treatment Standards

15. In § 268.40 the Table of Treatment Standards is amended by adding, in alpha-numerical order, entries for F032, F034, and F035, and revising entries for D001, F024 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
D001 [9]	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1)—Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only.).	NA	NA	NA	RORGS; CMBST; OR POLYM
*	*	* *	*	*	*
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).	All F024 wastes	NA	CMBST [11]	CMBST [11]
		2-Chloro-1,3-butadiene	126–99–8	0.057	0.28
		3-Chloropropylene	107–05–1	0.036	30
		1,1-Dichloroethane	75–34–3	0.059	6.0
		1,2-Dichloroethane	107–06–2	0.21	6.0
		1,2-Dichloropropane	78–87–5	0.85	18
		cis-1,3-Dichloropropylene	10061–01–5	0.036	18
		trans-1,3-Dichloropropylene	10061–02–6	0.036	18
		bis(2-Ethylhexyl) phthalate	117–81–7	0.28	28
		Hexachloroethane	67–72–1	0.055	30
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
		Nickel	7440–02–0	3.98	5.0 mg/l TCLP
*	*	* *	*	*	*
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with § 261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Acenaphthene	83–32–9	0.059	3.4
		Anthracene	120–12–7	0.059	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k) fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b) fluoranthene).	207–08–9	0.11	6.8
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		2-4-Dimethyl phenol	105–67–9	0.036	14
		Fluorene	86–73–7	0.059	3.4
		Hexachlorodibenzo-p-dioxins	NA	0.000063 or CMBST [11] ..	0.001 or CMBST [11]
		Hexachlorodibenzofurans	NA	0.000063 or CMBST [11] ..	0.001 or CMBST [11]
		Indeno (1,2,3-c,d) pyrene	193–39–5	0.0055	3.4
		Naphthalene	91–20–3	0.059	5.6
		Pentachlorodibenzo-p-dioxins	NA	0.000063 or CMBST [11] ..	0.001 or CMBST [11]
		Pentachlorodibenzofurans	NA	0.000035 or CMBST [11] ..	0.001 or CMBST [11]
		Pentachlorophenol	87–86–5	0.089	7.4
		Phenanthrene	85–01–8	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyrene	129–00–0	0.067	8.2
		Tetrachlorodibenzo-p-dioxins	NA	0.000063 or CMBST [11] ..	0.001 or CMBST [11]
		Tetrachlorodibenzofurans	NA	0.000063 or CMBST [11] ..	0.001 or CMBST [11]
		2,3,4,6-Tetrachlorophenol	58–90–2	0.030	7.4
		2,4,6-Trichlorophenol	88–06–2	0.035	7.4
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/lTCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Acenaphthene	83–32–9	0.059	3.4
		Anthracene	120–12–7	0.059	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene).	205–99–2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene).	207–08–9	0.11	6.8
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Fluorene	86–73–7	0.059	3.4
		Indeno (1,2,3-c,d) pyrene	193–39–5	0.0055	3.4
		Naphthalene	91–20–3	0.059	5.6
		Phenanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Arsenic	7440–38–2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440–47–3	2.77	0.86 mg/l TCLP
*	*	*	*	*	*

FOOTNOTES TO TREATMENT STANDARDS TABLE 268.40:

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in § 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O, or part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in § 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[6] Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[8] These wastes, when rendered nonhazardous and then subsequently managed in CWA, or CWA-equivalent systems are not subject to treatment standards. (See § 268.1(c) (3) and (4)).

[9] These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well are not subject to treatment standards. (See 40 CFR part 148.1(d)).

[10] Between August 26, 1996, and August 26, 1997, the treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technolgy code CMBST at § 268.42 Table 1 of this part, for nonwastewaters; and, biodegradation as defined by the technolgy code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technolgy code CMBST at § 268.42 Table 1 of this part, for wastewaters.

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code

[11] For these wastes, the definition of CMBST is limited to: (1) combustion units operating under 40 CFR 266, (2) combustion units permitted under 40 CFR Part 264, Subpart O, or (3) combustion units operating under 40 CFR 265, Subpart O, which have obtained a determination of equivalent treatment under 268.42(b).

* * * * *

§ 268.42 [Amended]

16. Section 268.42 is amended by adding the entry ''POLYM'' into Table 1.— Technology Codes and Description of Technology-Based Standards, in alphabetical order, to read as follows:

* * * * *

TABLE 1.—TECHNOLOGY CODES AND DESCRIPTION OF TECHNOLOGY-BASED STANDARDS

Technology code	Description of technology-based standards
* *	* * * * *
POLYM:	Formation of complex high-molecular weight solids through polymerization of monomers in high-TOC D001 non-wastewaters which are chemical components in the manufacture of plastics.
* *	* * * * *

* * * * *

17. Section 268.44 is amended by revising both entries in the ''see also'' column of the table in paragraph (o) to read ''§ 268.40'' and by revising the introductory language of paragraph (o) and the heading of the table in paragraph (o) to read as follows:

§ 268.44 Variance from a treatment standard.

* * * * *

(o) The following facilities are excluded from the treatment standards under § 268.40 and are subject to the following constituent concentrations:

Table—Wastes Excluded from the Treatment Standards Under § 268.40.

* * * * *

Appendices I, II, III, and X to Part 268 [Removed and Reserved]

18. Appendices I, II, III, and X to part 268 are removed and reserved.

19. The introductory language of appendix VI to part 268 is revised to read as follows:

Appendix VI to Part 268—Recommended Technologies to Achieve Deactivation of Characteristics in Section 268.42

The treatment standard for many characteristic wastes is stated in the § 268.40 Table of Treatment Standards as ''Deactivation and meet UTS.'' EPA has determined that many technologies, when used alone or in combination, can achieve the deactivation portion of the treatment standard. Characteristic wastes that are not managed in a facility regulated by the Clean Water Act (CWA) or in a CWA-equivalent facility, and that also contain underlying hazardous constituents (see § 268.2(i)) must be treated not only by a ''deactivating'' technology to remove the characteristic, but also to achieve the universal treatment standards (UTS) for underlying hazardous constituents. The following appendix presents a partial list of technologies, utilizing the five letter technology codes established in 40 CFR 268.42 Table 1, that may be useful in meeting the treatment standard. Use of these specific technologies is not mandatory and does not preclude direct reuse, recovery, and/or the use of other pretreatment technologies, provided deactivation is achieved and underlying hazardous constituents are treated to achieve the UTS.

* * * * *

20. Appendix VII to Part 268 is revised to read as follows:

Appendix VII to Part 268—LDR Effective Dates of Surface Disposed Prohibited Hazardous Wastes

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST

Waste code	Waste category	Effective date
D001 [c]	All (except High TOC Ignitable Liquids)	Aug. 9, 1993.
D001	High TOC Ignitable Liquids	Aug. 8, 1990.
D002 [c]	All	Aug. 9, 1993.
D003 [e]	All	July 8, 1996.
D004	Nonwastewater	May 8, 1992.
D004	Wastewater	Aug. 8, 1992.
D005	All	Aug. 8, 1990.
D006	All	Aug. 8, 1990.
D007	All	Aug. 8, 1990.
D008	Lead materials before secondary smelting	May 8, 1992.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
D008	All others	Aug. 8, 1990.
D009	Nonwastewater	May 8, 1992.
D009	All others	Aug. 8, 1990.
D010	All	Aug. 8, 1990.
D011	All	Aug. 8, 1990.
D012 (that exhibit the toxicity characteristic based on the TCLP) [d].	All	Dec. 14, 1994.
D013 (that exhibit the toxicity characteristic based on the TCLP) [d].	All	Dec. 14, 1994.
D014 (that exhibit the toxicity characteristic based on the TCLP) [d].	All	Dec. 14, 1994.
D015 (that exhibit the toxicity characteristic based on the TCLP) [d].	All	Dec. 14, 1994.
D016 (that exhibit the toxicity characteristic based on the TCLP) [d].	All	Dec. 14, 1994.
D017 (that exhibit the toxicity characteristic based on the TCLP) [d].	All	Dec. 14, 1994.
D018	Mixed with radioactive wastes	Sept. 19, 1996.
D018	All others	Dec. 19, 1994.
D019	Mixed with radioactive wastes	Sept. 19, 1996.
D019	All others	Dec. 19, 1994.
D020	Mixed with radioactive wastes	Sept. 19, 1996.
D020	All others	Dec. 19, 1994.
D021	Mixed with radioactive wastes	Sept. 19, 1996.
D021	All others	Dec. 19, 1994.
D022	Mixed with radioactive wastes	Sept. 19, 1996.
D022	All others	Dec. 19, 1994.
D023	Mixed with radioactive wastes	Sept. 19, 1996.
D023	All others	Dec. 19, 1994.
D024	Mixed with radioactive wastes	Sept. 19, 1996.
D024	All others	Dec. 19, 1994.
D025	Mixed with radioactive wastes	Sept. 19, 1996.
D025	All others	Dec. 19, 1994.
D026	Mixed with radioactive wastes	Sept. 19, 1996.
D026	All others	Dec. 19, 1994.
D027	Mixed with radioactive wastes	Sept. 19, 1996.
D027	All others	Dec. 19, 1994.
D028	Mixed with radioactive wastes	Sept. 19, 1996.
D028	All others	Dec. 19, 1994.
D029	Mixed with radioactive wastes	Sept. 19, 1996.
D029	All others	Dec. 19, 1994.
D030	Mixed with radioactive wastes	Sept. 19. 1996.
D030	All others	Dec. 19, 1994.
D031	Mixed with radioactive wastes	Sept. 19, 1996.
D031	All others	Dec. 19, 1994.
D032	Mixed with radioactive wastes	Sept. 19, 1996.
D032	All others	Dec. 19, 1994.
D033	Mixed with radioactive wastes	Sept. 19, 1996.
D033	All others	Dec. 19, 1994.
D034	Mixed with radioactive wastes	Sept. 19, 1996.
D034	All others	Dec. 19, 1994.
D035	Mixed with radioactive wastes	Sept. 19, 1996.
D035	All others	Dec. 19, 1994.
D036	Mixed with radioactive wastes	Sept. 19, 1996.
D036	All others	Dec. 19, 1994.
D037	Mixed with radioactive wastes	Sept. 19, 1996.
D037	All others	Dec. 19, 1994.
D038	Mixed with radioactive wastes	Sept. 19, 1996.
D038	All others	Dec. 19, 1994.
D039	Mixed with radioactive wastes	Sept. 19, 1996.
D039	All others	Dec. 19, 1994.
D040	Mixed with radioactive wastes	Sept. 19, 1996.
D040	All others	Dec. 19, 1994.
D041	Mixed with radioactive wastes	Sept. 19, 1996.
D041	All others	Dec. 19, 1994.
D042	Mixed with radioactive wastes	Sept. 19, 1996.
D042	All others	Dec. 19, 1994.
D043	Mixed with radioactive wastes	Sept. 19, 1996.
D043	All others	Dec. 19, 1994.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
F001	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	Nov. 8, 1988.
F001	All others	Nov. 8, 1986.
F002 (1,1,2-trichloroethane)	Wastewater and Nonwastewater	Aug. 8, 1990.
F002	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	Nov. 8, 1988.
F002	All others	Nov. 8, 1986.
F003	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	Nov. 8, 1988.
F003	All others	Nov. 8, 1986.
F004	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	Nov. 8, 1988.
F004	All others	Nov. 8, 1986.
F005 (benzene, 2-ethoxy ethanol, 2-nitropropane)	Wastewater and Nonwastewater	Aug. 8, 1990.
F005	Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids.	Nov. 8, 1988.
F005	All others	Nov. 8, 1986.
F006	Wastewater	Aug. 8, 1990.
F006	Nonwastewater	Aug. 8, 1988.
F006 (cyanides)	Nonwastewater	July 8, 1989.
F007	All	July 8, 1989.
F008	All	July 8, 1989.
F009	All	July 8, 1989.
F010	All	June 8, 1989.
F011 (cyanides)	Nonwastewater	Dec. 8, 1989.
F011	All others	July 8, 1989.
F012 (cyanides)	Nonwastewater	Dec. 8, 1989.
F012	All others	July 8, 1989.
F019	All	Aug. 8, 1990.
F020	All	Nov. 8, 1988.
F021	All	Nov. 8, 1988.
F025	All	Aug. 8, 1990.
F026	All	Nov. 8, 1988.
F027	All	Nov. 8, 1988.
F028	All	Nov. 8, 1988.
F032	Mixed with radioactive wastes	May 12, 1999
F032	All others	May 12, 1997
F033	Mixed with radioactive wastes	May 12, 1999
F033	All others	May 12, 1997
F034	Mixed with radioactive wastes	May 12, 1999
F034	All others	May 12, 1997
F037	Not generated from surface impoundment cleanouts or closures	June 30, 1993.
F037	Generated from surface impoundment cleanouts or closures	June 30, 1994.
F037	Mixed with radioactive wastes	June 30, 1994.
F038	Not generated from surface impoundment cleanouts or closures	June 30, 1993.
F038	Generated from surface impoundment cleanouts or closures	June 30, 1994.
F038	Mixed with radioactive wastes	June 30, 1994.
F039	Wastewater	Aug. 8, 1990.
F039	Nonwastewater	May 8, 1992.
K001 (organics) [b]	All	Aug. 8, 1988.
K001	All others	Aug. 8, 1988.
K002	All	Aug. 8, 1990.
K003	All	Aug. 8, 1990.
K004	Wastewater	Aug. 8, 1990.
K004	Nonwastewater	Aug. 8, 1988.
K005	Wastewater	Aug. 8, 1990.
K005	Nonwastewater	June 8, 1989.
K006	All	Aug. 8, 1990.
K007	Wastewater	Aug. 8, 1990.
K007	Nonwastewater	June 8, 1989.
K008	Wastewater	Aug. 8, 1990.
K008	Nonwastewater	Aug. 8, 1988.
K009	All	June 8, 1989.
K010	All	June 8, 1989.
K011	Wastewater	Aug. 8, 1990.
K011	Nonwastewater	June 8, 1989.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
K013	Wastewater	Aug. 8, 1990.
K013	Nonwastewater	June 8, 1989.
K014	Wastewater	Aug. 8, 1990.
K014	Nonwastewater	June 8, 1989.
K015	Wastewater	Aug. 8, 1988.
K015	Nonwastewater	Aug. 8, 1990.
K016	All	Aug. 8, 1988.
K017	All	Aug. 8, 1990.
K018	All	Aug. 8, 1988.
K019	All	Aug. 8, 1988.
K020	All	Aug. 8, 1988.
K021	Wastewater	Aug. 8, 1990.
K021	Nonwastewater	Aug. 8, 1988.
K022	Wastewater	Aug. 8, 1990.
K022	Nonwastewater	Aug. 8, 1988.
K023	All	June 8, 1989.
K024	All	Aug. 8, 1988.
K025	Wastewater	Aug. 8, 1990.
K025	Nonwastewater	Aug. 8, 1988.
K026	All	Aug. 8, 1990.
K027	All	June 8, 1989.
K028 (metals)	Nonwastewater	Aug. 8, 1990.
K028	All others	June 8, 1989.
K029	Wastewater	Aug. 8, 1990.
K029	Nonwastewater	June 8, 1989.
K030	All	Aug. 8, 1988.
K031	Wastewater	Aug. 8, 1990.
K031	Nonwastewater	May 8, 1992.
K032	All	Aug. 8, 1990.
K033	All	Aug. 8, 1990.
K034	All	Aug. 8, 1990.
K035	All	Aug. 8, 1990.
K036	Wastewater	June 8, 1989.
K036	Nonwastewater	Aug. 8, 1988.
K037 [b]	Wastewater	Aug. 8, 1988.
K037	Nonwastewater	Aug. 8, 1988.
K038	All	June 8, 1989.
K039	All	June 8, 1989.
K040	All	June 8, 1989.
K041	All	Aug. 8, 1990.
K042	All	Aug. 8, 1990.
K043	All	June 8, 1989.
K044	All	Aug. 8, 1988.
K045	All	Aug. 8, 1988.
K046 (Nonreactive)	Nonwastewater	Aug. 8, 1988.
K046	All others	Aug. 8, 1990.
K047	All	Aug. 8, 1988.
K048	Wastewater	Aug. 8, 1990.
K048	Nonwastewater	Nov. 8, 1990.
K049	Wastewater	Aug. 8, 1990.
K049	Nonwastewater	Nov. 8, 1990.
K050	Wastewater	Aug. 8, 1990.
K050	Nonwastewater	Nov. 8, 1990.
K051	Wastewater	Aug. 8, 1990.
K051	Nonwastewater	Nov. 8, 1990.
K052	Wastewater	Aug. 8, 1990.
K052	Nonwastewater	Nov. 8, 1990.
K060	Wastewater	Aug. 8, 1990.
K060	Nonwastewater	Aug. 8, 1988.
K061	Wastewater	Aug. 8, 1990.
K061	Nonwastewater	June 30, 1992.
K062	All	Aug. 8, 1988.
K069 (Non-Calcium Sulfate)	Nonwastewater	Aug. 8, 1988.
K069	All others	Aug. 8, 1990.
K071	All	Aug. 8, 1990.
K073	All	Aug. 8, 1990.
K083	All	Aug. 8, 1990.
K084	Wastewater	Aug. 8, 1990.
K084	Nonwastewater	May 8, 1992.
K085	All	Aug. 8, 1990.
K086 (organics) [b]	All	Aug. 8, 1988.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
K086	All others	Aug. 8, 1988.
K087	All	Aug. 8, 1988.
K088	Mixed with radioactive wastes	Apr. 8, 1998.
K088	All others	Jan. 8, 1997.
K093	All	June 8, 1989.
K094	All	June 8, 1989.
K095	Wastewater	Aug. 8, 1990.
K095	Nonwastewater	June 8, 1989.
K096	Wastewater	Aug. 8, 1990.
K096	Nonwastewater	June 8, 1989.
K097	All	Aug. 8, 1990.
K098	All	Aug. 8, 1990.
K099	All	Aug. 8, 1988.
K100	Wastewater	Aug. 8, 1990.
K100	Nonwastewater	Aug. 8, 1988.
K101 (organics)	Wastewater	Aug. 8, 1988.
K101 (metals)	Wastewater	Aug. 8, 1990.
K101 (organics)	Nonwastewater	Aug. 8, 1988.
K101 (metals)	Nonwastewater	May 8, 1992.
K102 (organics)	Wastewater	Aug. 8, 1988.
K102 (metals)	Wastewater	Aug. 8, 1990.
K102 (organics)	Nonwastewater	Aug. 8, 1988.
K102 (metals)	Nonwastewater	May 8, 1992.
K103	All	Aug. 8, 1988.
K104	All	Aug. 8, 1988.
K105	All	Aug. 8, 1990.
K106	Wastewater	Aug. 8, 1990.
K106	Nonwastewater	May 8, 1992.
K107	Mixed with radioactive wastes	June 30, 1994.
K107	All others	Nov. 9, 1992.
K108	Mixed with radioactive wastes	June 30, 1994.
K108	All others	Nov. 9, 1992.
K109	Mixed with radioactive wastes	June 30, 1994.
K109	All others	Nov. 9, 1992.
K110	Mixed with radioactive wastes	June 30, 1994.
K110	All others	Nov. 9, 1992.
K111	Mixed with radioactive wastes	June 30, 1994.
K111	All others	Nov. 9, 1992.
K112	Mixed with radioactive wastes	June 30, 1994.
K112	All others	Nov. 9, 1992.
K113	All	June 8, 1989.
K114	All	June 8, 1989.
K115	All	June 8, 1989.
K116	All	June 8, 1989.
K117	Mixed with radioactive wastes	June 30, 1994.
K117	All others	Nov. 9, 1992.
K118	Mixed with radioactive wastes	June 30, 1994.
K118	All others	Nov. 9, 1992.
K123	Mixed with radioactive wastes	June 30, 1994.
K123	All others	Nov. 9, 1992.
K124	Mixed with radioactive wastes	June 30, 1994.
K124	All others	Nov. 9, 1992.
K125	Mixed with radioactive wastes	June 30, 1994.
K125	All others	Nov. 9, 1992.
K126	Mixed with radioactive wastes	June 30, 1994.
K126	All others	Nov. 9, 1992.
K131	Mixed with radioactive wastes	June 30, 1994.
K131	All others	Nov. 9, 1992.
K132	Mixed with radioactive wastes	June 30, 1994.
K132	All others	Nov. 9, 1992.
K136	Mixed with radioactive wastes	June 30, 1994.
K136	All others	Nov. 9, 1992.
K141	Mixed with radioactive wastes	Sep. 19, 1996.
K141	All others	Dec. 19, 1994.
K142	Mixed with radioactive wastes	Sep. 19, 1996..
K142	All others	Dec. 19, 1994.
K143	Mixed with radioactive wastes	Sep. 19, 1996.
K143	All others	Dec. 19, 1994.
K144	Mixed with radioactive wastes	Sep. 19, 1996.
K144	All others	Dec. 19, 1994.
K145	Mixed with radioactive wastes	Sep. 19, 1996.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
K145	All others	Dec. 19, 1994.
K147	Mixed with radioactive wastes	Sep. 19, 1996.
K147	All others	Dec. 19, 1994.
K148	Mixed with radioactive wastes	Sep. 19, 1996.
K148	All others	Dec. 19, 1994.
K149	Mixed with radioactive wastes	Sep. 19, 1996.
K149	All others	Dec. 19, 1994.
K150	Mixed with radioactive wastes	Sep. 19, 1996.
K150	All others	Dec. 19, 1994.
K151	Mixed with radioactive wastes	Sep. 19, 1996.
K151	All others	Dec. 19, 1994.
K156	Mixed with radioactive wastes	Apr. 8, 1998.
K156	All others	July 8, 1996.
K157	Mixed with radioactive wastes	Apr. 8, 1998.
K157	All others	July 8, 1996.
K158	Mixed with radioactive wastes	Apr. 8, 1998.
K158	All others	July 8, 1996.
K159	Mixed with radioactive wastes	Apr. 8, 1998.
K159	All others	July 8, 1996.
K160	Mixed with radioactive wastes	Apr. 8, 1998.
K160	All others	July 8, 1996.
K161	Mixed with radioactive wastes	Apr. 8, 1998.
K161	All others	July 8, 1996.
P001	All	Aug. 8, 1990.
P002	All	Aug. 8, 1990.
P003	All	Aug. 8, 1990.
P004	All	Aug. 8, 1990.
P005	All	Aug. 8, 1990.
P006	All	Aug. 8, 1990.
P007	All	Aug. 8, 1990.
P008	All	Aug. 8, 1990.
P009	All	Aug. 8, 1990.
P010	Wastewater	Aug. 8, 1990.
P010	Nonwastewater	May 8, 1992.
P011	Wastewater	Aug. 8, 1990.
P011	Nonwastewater	May 8, 1992.
P012	Wastewater	Aug. 8, 1990.
P012	Nonwastewater	May 8, 1992.
P013 (barium)	Nonwastewater	Aug. 8, 1990.
P013	All others	June 8, 1989.
P014	All	Aug. 8, 1990.
P015	All	Aug. 8, 1990.
P016	All	Aug. 8, 1990.
P017	All	Aug. 8, 1990.
P018	All	Aug. 8, 1990.
P020	All	Aug. 8, 1990.
P021	All	June 8, 1989.
P022	All	Aug. 8, 1990.
P023	All	Aug. 8, 1990.
P024	All	Aug. 8, 1990.
P026	All	Aug. 8, 1990.
P027	All	Aug. 8, 1990.
P028	All	Aug. 8, 1990.
P029	All	June 8, 1989.
P030	All	June 8, 1989.
P031	All	Aug. 8, 1990.
P033	All	Aug. 8, 1990.
P034	All	Aug. 8, 1990.
P036	Wastewater	Aug. 8, 1990.
P036	Nonwastewater	May 8, 1992.
P037	All	Aug. 8, 1990.
P038	Wastewater	Aug. 8, 1990.
P038	Nonwastewater	May 8, 1992.
P039	All	June 8, 1989.
P040	All	June 8, 1989.
P041	All	June 8, 1989.
P042	All	Aug. 8, 1990.
P043	All	June 8, 1989.
P044	All	June 8, 1989.
P045	All	Aug. 8, 1990.
P046	All	Aug. 8, 1990.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
P047	All	Aug. 8, 1990.
P048	All	Aug. 8, 1990.
P049	All	Aug. 8, 1990.
P050	All	Aug. 8, 1990.
P051	All	Aug. 8, 1990.
P054	All	Aug. 8, 1990.
P056	All	Aug. 8, 1990.
P057	All	Aug. 8, 1990.
P058	All	Aug. 8, 1990.
P059	All	Aug. 8, 1990.
P060	All	Aug. 8, 1990.
P062	All	June 8, 1989.
P063	All	June 8, 1989.
P064	All	Aug. 8, 1990.
P065	Wastewater	Aug. 8, 1990.
P065	Nonwastewater	May 8, 1992.
P066	All	Aug. 8, 1990.
P067	All	Aug. 8, 1990.
P068	All	Aug. 8, 1990.
P069	All	Aug. 8, 1990.
P070	All	Aug. 8, 1990.
P071	All	June 8, 1989.
P072	All	Aug. 8, 1990.
P073	All	Aug. 8, 1990.
P074	All	June 8, 1989.
P075	All	Aug. 8, 1990.
P076	All	Aug. 8, 1990.
P077	All	Aug. 8, 1990.
P078	All	Aug. 8, 1990.
P081	All	Aug. 8, 1990.
P082	All	Aug. 8, 1990.
P084	All	Aug. 8, 1990.
P085	All	June 8, 1989.
P087	All	May 8, 1992.
P088	All	Aug. 8, 1990.
P089	All	June 8, 1989.
P092	Wastewater	Aug. 8, 1990.
P092	Nonwastewater	May 8, 1992.
P093	All	Aug. 8, 1990.
P094	All	June 8, 1989.
P095	All	Aug. 8, 1990.
P096	All	Aug. 8, 1990.
P097	All	June 8, 1989.
P098	All	June 8, 1989.
P099 (silver)	Wastewater	Aug. 8, 1990.
P099	All others	June 8, 1989.
P101	All	Aug. 8, 1990.
P102	All	Aug. 8, 1990.
P103	All	Aug. 8, 1990.
P104 (silver)	Wastewater	Aug. 8, 1990.
P104	All others	June 8, 1989.
P105	All	Aug. 8, 1990.
P106	All	June 8, 1989.
P108	All	Aug. 8, 1990.
P109	All	June 8, 1989.
P110	All	Aug. 8, 1990.
P111	All	June 8, 1989.
P112	All	Aug. 8, 1990.
P113	All	Aug. 8, 1990.
P114	All	Aug. 8, 1990.
P115	All	Aug. 8, 1990.
P116	All	Aug. 8, 1990.
P118	All	Aug. 8, 1990.
P119	All	Aug. 8, 1990.
P120	All	Aug. 8, 1990.
P121	All	June 8, 1989.
P122	All	Aug. 8, 1990.
P123	All	Aug. 8, 1990.
P127	Mixed with radioactive wastes	Apr. 8, 1998.
P127	All others	July 8, 1996.
P128	Mixed with radioactive wastes	Apr. 8, 1998.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
P128	All others	July 8, 1996.
P185	Mixed with radioactive wastes	Apr. 8, 1998.
P185	All others	July 8, 1996.
P188	Mixed with radioactive wastes	Apr. 8, 1998.
P188	All others	July 8, 1996.
P189	Mixed with radioactive wastes	Apr. 8, 1998.
P189	All others	July 8, 1996.
P190	Mixed with radioactive wastes	Apr. 8, 1998.
P190	All others	July 8, 1996.
P191	Mixed with radioactive wastes	Apr. 8, 1998.
P191	All others	July 8, 1996.
P192	Mixed with radioactive wastes	Apr. 8, 1998.
P192	All others	July 8, 1996.
P194	Mixed with radioactive wastes	Apr. 8, 1998.
P194	All others	July 8, 1996.
P196	Mixed with radioactive wastes	Apr. 8, 1998.
P196	All others	July 8, 1996.
P197	Mixed with radioactive wastes	Apr. 8, 1998.
P197	All others	July 8, 1996.
P198	Mixed with radioactive wastes	Apr. 8, 1998.
P198	All others	July 8, 1996.
P199	Mixed with radioactive wastes	Apr. 8, 1998.
P199	All others	July 8, 1996.
P201	Mixed with radioactive wastes	Apr. 8, 1998.
P201	All others	July 8, 1996.
P202	Mixed with radioactive wastes	Apr. 8, 1998.
P202	All others	July 8, 1996.
P203	Mixed with radioactive wastes	Apr. 8, 1998.
P203	All others	July 8, 1996.
P204	Mixed with radioactive wastes	Apr. 8, 1998.
P204	All others	July 8, 1996.
P205	Mixed with radioactive wastes	Apr. 8, 1998.
P205	All others	July 8, 1996.
U001	All	Aug. 8, 1990.
U002	All	Aug. 8, 1990.
U003	All	Aug. 8, 1990.
U004	All	Aug. 8, 1990.
U005	All	Aug. 8, 1990.
U006	All	Aug. 8, 1990.
U007	All	Aug. 8, 1990.
U008	All	Aug. 8, 1990.
U009	All	Aug. 8, 1990.
U010	All	Aug. 8, 1990.
U011	All	Aug. 8, 1990.
U012	All	Aug. 8, 1990.
U014	All	Aug. 8, 1990.
U015	All	Aug. 8, 1990.
U016	All	Aug. 8, 1990.
U017	All	Aug. 8, 1990.
U018	All	Aug. 8, 1990.
U019	All	Aug. 8, 1990.
U020	All	Aug. 8, 1990.
U021	All	Aug. 8, 1990.
U022	All	Aug. 8, 1990.
U023	All	Aug. 8, 1990.
U024	All	Aug. 8, 1990.
U025	All	Aug. 8, 1990.
U026	All	Aug. 8, 1990.
U027	All	Aug. 8, 1990.
U028	All	June 8, 1989.
U029	All	Aug. 8, 1990.
U030	All	Aug. 8, 1990.
U031	All	Aug. 8, 1990.
U032	All	Aug. 8, 1990.
U033	All	Aug. 8, 1990.
U034	All	Aug. 8, 1990.
U035	All	Aug. 8, 1990.
U036	All	Aug. 8, 1990.
U037	All	Aug. 8, 1990.
U038	All	Aug. 8, 1990.
U039	All	Aug. 8, 1990.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
U041	All	Aug. 8, 1990.
U042	All	Aug. 8, 1990.
U043	All	Aug. 8, 1990.
U044	All	Aug. 8, 1990.
U045	All	Aug. 8, 1990.
U046	All	Aug. 8, 1990.
U047	All	Aug. 8, 1990.
U048	All	Aug. 8, 1990.
U049	All	Aug. 8, 1990.
U050	All	Aug. 8, 1990.
U051	All	Aug. 8, 1990.
U052	All	Aug. 8, 1990.
U053	All	Aug. 8, 1990.
U055	All	Aug. 8, 1990.
U056	All	Aug. 8, 1990.
U057	All	Aug. 8, 1990.
U058	All	June 8, 1989.
U059	All	Aug. 8, 1990.
U060	All	Aug. 8, 1990.
U061	All	Aug. 8, 1990.
U062	All	Aug. 8, 1990.
U063	All	Aug. 8, 1990.
U064	All	Aug. 8, 1990.
U066	All	Aug. 8, 1990.
U067	All	Aug. 8, 1990.
U068	All	Aug. 8, 1990.
U069	All	June 30, 1992.
U070	All	Aug. 8, 1990.
U071	All	Aug. 8, 1990.
U072	All	Aug. 8, 1990.
U073	All	Aug. 8, 1990.
U074	All	Aug. 8, 1990.
U075	All	Aug. 8, 1990.
U076	All	Aug. 8, 1990.
U077	All	Aug. 8, 1990.
U078	All	Aug. 8, 1990.
U079	All	Aug. 8, 1990.
U080	All	Aug. 8, 1990.
U081	All	Aug. 8, 1990.
U082	All	Aug. 8, 1990.
U083	All	Aug. 8, 1990.
U084	All	Aug. 8, 1990.
U085	All	Aug. 8, 1990.
U086	All	Aug. 8, 1990.
U087	All	June 8, 1989.
U088	All	June 8, 1989.
U089	All	Aug. 8, 1990.
U090	All	Aug. 8, 1990.
U091	All	Aug. 8, 1990.
U092	All	Aug. 8, 1990.
U093	All	Aug. 8, 1990.
U094	All	Aug. 8, 1990.
U095	All	Aug. 8, 1990.
U096	All	Aug. 8, 1990.
U097	All	Aug. 8, 1990.
U098	All	Aug. 8, 1990.
U099	All	Aug. 8, 1990.
U101	All	Aug. 8, 1990.
U102	All	June 8, 1989.
U103	All	Aug. 8, 1990.
U105	All	Aug. 8, 1990.
U106	All	Aug. 8, 1990.
U107	All	June 8, 1989.
U108	All	Aug. 8, 1990.
U109	All	Aug. 8, 1990.
U110	All	Aug. 8, 1990.
U111	All	Aug. 8, 1990.
U112	All	Aug. 8, 1990.
U113	All	Aug. 8, 1990.
U114	All	Aug. 8, 1990.
U115	All	Aug. 8, 1990.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
U116	All	Aug. 8, 1990.
U117	All	Aug. 8, 1990.
U118	All	Aug. 8, 1990.
U119	All	Aug. 8, 1990.
U120	All	Aug. 8, 1990.
U121	All	Aug. 8, 1990.
U122	All	Aug. 8, 1990.
U123	All	Aug. 8, 1990.
U124	All	Aug. 8, 1990.
U125	All	Aug. 8, 1990.
U126	All	Aug. 8, 1990.
U127	All	Aug. 8, 1990.
U128	All	Aug. 8, 1990.
U129	All	Aug. 8, 1990.
U130	All	Aug. 8, 1990.
U131	All	Aug. 8, 1990.
U132	All	Aug. 8, 1990.
U133	All	Aug. 8, 1990.
U134	All	Aug. 8, 1990.
U135	All	Aug. 8, 1990.
U136	Wastewater	Aug. 8, 1990.
U136	Nonwastewater	May 8, 1992.
U137	All	Aug. 8, 1990.
U138	All	Aug. 8, 1990.
U140	All	Aug. 8, 1990.
U141	All	Aug. 8, 1990.
U142	All	Aug. 8, 1990.
U143	All	Aug. 8, 1990.
U144	All	Aug. 8, 1990.
U145	All	Aug. 8, 1990.
U146	All	Aug. 8, 1990.
U147	All	Aug. 8, 1990.
U148	All	Aug. 8, 1990.
U149	All	Aug. 8, 1990.
U150	All	Aug. 8, 1990.
U151	Wastewater	Aug. 8, 1990.
U151	Nonwastewater	May 8, 1992.
U152	All	Aug. 8, 1990.
U153	All	Aug. 8, 1990.
U154	All	Aug. 8, 1990.
U155	All	Aug. 8, 1990.
U156	All	Aug. 8, 1990.
U157	All	Aug. 8, 1990.
U158	All	Aug. 8, 1990.
U159	All	Aug. 8, 1990.
U160	All	Aug. 8, 1990.
U161	All	Aug. 8, 1990.
U162	All	Aug. 8, 1990.
U163	All	Aug. 8, 1990.
U164	All	Aug. 8, 1990.
U165	All	Aug. 8, 1990.
U166	All	Aug. 8, 1990.
U167	All	Aug. 8, 1990.
U168	All	Aug. 8, 1990.
U169	All	Aug. 8, 1990.
U170	All	Aug. 8, 1990.
U171	All	Aug. 8, 1990.
U172	All	Aug. 8, 1990.
U173	All	Aug. 8, 1990.
U174	All	Aug. 8, 1990.
U176	All	Aug. 8, 1990.
U177	All	Aug. 8, 1990.
U178	All	Aug. 8, 1990.
U179	All	Aug. 8, 1990.
U180	All	Aug. 8, 1990.
U181	All	Aug. 8, 1990.
U182	All	Aug. 8, 1990.
U183	All	Aug. 8, 1990.
U184	All	Aug. 8, 1990.
U185	All	Aug. 8, 1990.
U186	All	Aug. 8, 1990.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
U187	All	Aug. 8, 1990.
U188	All	Aug. 8, 1990.
U189	All	Aug. 8, 1990.
U190	All	June 8, 1989.
U191	All	Aug. 8, 1990.
U192	All	Aug. 8, 1990.
U193	All	Aug. 8, 1990.
U194	All	June 8, 1989.
U196	All	Aug. 8, 1990.
U197	All	Aug. 8, 1990.
U200	All	Aug. 8, 1990.
U201	All	Aug. 8, 1990.
U202	All	Aug. 8, 1990.
U203	All	Aug. 8, 1990.
U204	All	Aug. 8, 1990.
U205	All	Aug. 8, 1990.
U206	All	Aug. 8, 1990.
U207	All	Aug. 8, 1990.
U208	All	Aug. 8, 1990.
U209	All	Aug. 8, 1990.
U210	All	Aug. 8, 1990.
U211	All	Aug. 8, 1990.
U213	All	Aug. 8, 1990.
U214	All	Aug. 8, 1990.
U215	All	Aug. 8, 1990.
U216	All	Aug. 8, 1990.
U217	All	Aug. 8, 1990.
U218	All	Aug. 8, 1990.
U219	All	Aug. 8, 1990.
U220	All	Aug. 8, 1990.
U221	All	June 8, 1989.
U222	All	Aug. 8, 1990.
U223	All	June 8, 1989.
U225	All	Aug. 8, 1990.
U226	All	Aug. 8, 1990.
U227	All	Aug. 8, 1990.
U228	All	Aug. 8, 1990.
U234	All	Aug. 8, 1990.
U235	All	June 8, 1989.
U236	All	Aug. 8, 1990.
U237	All	Aug. 8, 1990.
U238	All	Aug. 8, 1990.
U239	All	Aug. 8, 1990.
U240	All	Aug. 8, 1990.
U243	All	Aug. 8, 1990.
U244	All	Aug. 8, 1990.
U246	All	Aug. 8, 1990.
U247	All	Aug. 8, 1990.
U248	All	Aug. 8, 1990.
U249	All	Aug. 8, 1990.
U271	Mixed with radioactive wastes	Apr. 8, 1998.
U271	All others	July 8, 1996.
U277	Mixed with radioactive wastes	Apr. 8, 1998.
U277	All others	July 8, 1996.
U278	Mixed with radioactive wastes	Apr. 8, 1998.
U278	All others	July 8, 1996.
U279	Mixed with radioactive wastes	Apr. 8, 1998.
U279	All others	July 8, 1996.
U280	Mixed with radioactive wastes	Apr. 8, 1998.
U280	All others	July 8, 1996.
U328	Mixed with radioactive wastes	June 30, 1994.
U328	All others	Nov. 9, 1992.
U353	Mixed with radioactive wastes	June 30, 1994.
U353	All others	Nov. 9, 1992.
U359	Mixed with radioactive wastes	June 30, 1994.
U359	All others	Nov. 9, 1992.
U364	Mixed with radioactive wastes	Apr. 8, 1998.
U364	All others	July 8, 1996.
U365	Mixed with radioactive wastes	Apr. 8, 1998.
U365	All others	July 8, 1996.
U366	Mixed with radioactive wastes	Apr. 8, 1998.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date
U366	All others	July 8, 1996.
U367	Mixed with radioactive wastes	Apr. 8, 1998.
U367	All others	July 8, 1996.
U372	Mixed with radioactive wastes	Apr. 8, 1998.
U372	All others	July 8, 1996.
U373	Mixed with radioactive wastes	Apr. 8, 1998.
U373	All others	July 8, 1996.
U375	Mixed with radioactive wastes	Apr. 8, 1998.
U375	All others	July 8, 1996.
U376	Mixed with radioactive wastes	Apr. 8, 1998.
U376	All others	July 8, 1996.
U377	Mixed with radioactive wastes	Apr. 8, 1998.
U377	All others	July 8, 1996.
U378	Mixed with radioactive wastes	Apr. 8, 1998.
U378	All others	July 8, 1996.
U379	Mixed with radioactive wastes	Apr. 8, 1998.
U379	All others	July 8, 1996.
U381	Mixed with radioactive wastes	Apr. 8, 1998.
U381	All others	July 8, 1996.
U382	Mixed with radioactive wastes	Apr. 8, 1998.
U382	All others	July 8, 1996.
U383	Mixed with radioactive wastes	Apr. 8, 1998.
U383	All others	July 8, 1996.
U384	Mixed with radioactive wastes	Apr. 8, 1998.
U384	All others	July 8, 1996.
U385	Mixed with radioactive wastes	Apr. 8, 1998.
U385	All others	July 8, 1996.
U386	Mixed with radioactive wastes	Apr. 8, 1998.
U386	All others	July 8, 1996.
U387	Mixed with radioactive wastes	Apr. 8, 1998.
U387	All others	July 8, 1996.
U389	Mixed with radioactive wastes	Apr. 8, 1998.
U389	All others	July 8, 1996.
U390	Mixed with radioactive wastes	Apr. 8, 1998.
U390	All others	July 8, 1996.
U391	Mixed with radioactive wastes	Apr. 8, 1998.
U391	All others	July 8, 1996.
U392	Mixed with radioactive wastes	Apr. 8, 1998.
U392	All others	July 8, 1996.
U393	Mixed with radioactive wastes	Apr. 8, 1998.
U393	All others	July 8, 1996.
U394	Mixed with radioactive wastes	Apr. 8, 1998.
U394	All others	July 8, 1996.
U395	Mixed with radioactive wastes	Apr. 8, 1998.
U395	All others	July 8, 1996.
U396	Mixed with radioactive wastes	Apr. 8, 1998.
U396	All others	July 8, 1996.
U400	Mixed with radioactive wastes	Apr. 8, 1998.
U400	All others	July 8, 1996.
U401	Mixed with radioactive wastes	Apr. 8, 1998.
U401	All others	July 8, 1996.
U402	Mixed with radioactive wastes	Apr. 8, 1998.
U402	All others	July 8, 1996.
U403	Mixed with radioactive wastes	Apr. 8, 1998.
U403	All others	July 8, 1996.
U404	Mixed with radioactive wastes	Apr. 8, 1998.
U404	All others	July 8, 1996.
U407	Mixed with radioactive wastes	Apr. 8, 1998.
U407	All others	July 8, 1996.
U409	Mixed with radioactive wastes	Apr. 8, 1998.
U409	All others	July 8, 1996.
U410	Mixed with radioactive wastes	Apr. 8, 1998.
U410	All others	July 8, 1996.
U411	Mixed with radioactive wastes	Apr. 8, 1998.
U411	All others	July 8, 1996.

[a] This table does not include mixed radioactive wastes (from the First, Second, and Third Third rules) which received national capacity variance until May 8, 1992. This table also does not include contaminated soil and debris wastes.
[b] The standard was revised in the Third Third Final Rule (55 FR 22520, June 1, 1990).
[c] The standard was revised in the Third Third Emergency Rule (58 FR 29860, May 24, 1993); the original effective date was August 8, 1990.
[d] The standard was revised in the Phase II Final Rule (59 FR 47982, Sept. 19, 1994); the original effective date was August 8, 1990.

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES (NON-SOIL AND DEBRIS) REGULATED IN THE LDRS [a]—COMPREHENSIVE LIST—Continued

Waste code	Waste category	Effective date

[e] The standards for selected reactive wastes was revised in the Phase III Final Rule (61 FR 15566, Apr. 8, 1996); the original effective date was August 8, 1990.

TABLE 2.—SUMMARY OF EFFECTIVE DATES OF LAND DISPOSAL RESTRICTIONS FOR CONTAMINATED SOIL AND DEBRIS (CSD)

Restricted hazardous waste in CSD	Effective date
1. Solvent–(F001–F005) and dioxin–(F020–F023 and F026–F028) containing soil and debris from CERCLA response or RCRA corrective actions.	Nov. 8, 1990.
2. Soil and debris not from CERCLA response or RCRA corrective actions contaminated with less than 1% total solvents (F001–F005) or dioxins (F020–F023 and F026–F028).	Nov. 8, 1988.
3 All soil and debris contaminated with First Third wastes for which treatment standards are based on incineration	Aug. 8, 1990.
4. All soil and debris contaminated with Second Third wastes for which treatment standards are based on incineration	June 8, 1991.
5. All soil and debris contaminated with Third Third wastes or, First or Second Third ''soft hammer'' wastes which had treatment standards promulgated in the Third Third rule, for which treatment standards are based on incineration, vitrification, or mercury retorting, acid leaching followed by chemical precipitation, or thermal recovery of metals; as well as all inorganic solids debris contaminated with D004–D011 wastes, and all soil and debris contaminated with mixed RCRA/radioactive wastes.	May 8, 1992.
6. Soil and debris contaminated with D012–D043, K141–K145, and K147–151 wastes	Dec. 19, 1994.
7. Debris (only) contaminated with F037, F038, K107–K112, K117, K118, K123–K126, K131, K132, K136, U328, U353, U359	Dec. 19, 1994
8. Soil and debris contaminated with K156–K161, P127, P128, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411 wastes.	July 8, 1996.
9. Soil and debris contaminated with K088 wastes	Jan. 8, 1997.
10. Soil and debris contaminated with radioactive wastes mixed with K088, K156–K161, P127, P128, P188–P192, P194, P196–P199, P201–P205, U271, U277–U280, U364–U367, U372, U373, U375–U379, U381–U387, U389–U396, U400–U404, U407, and U409–U411 wastes.	April 8, 1998.
11. Soil and debris contaminated with F032, F034, and F035	May 12, 1997.

Note: Appendix VII is provided for the convenience of the reader.

21. Appendix VIII to Part 268 is revised to read as follows:

Appendix VIII to Part 268—LDR Effective Dates of Surface Disposed Prohibited Hazardous Wastes

NATIONAL CAPACITY LDR VARIANCES FOR UIC WASTES [a]

Waste code	Waste category	Effective date
F001–F005	All spent F001–F005 solvent containing less than 1 percent total F001–F005 solvent constituents.	Aug. 8, 1990.
D001 (except High TOC Ignitable Liquids Subcategory)[c].	All	Feb. 10, 1994.
D001 (High TOC Ignitable Characteristic Liquids Subcategory).	Nonwastewater	Sept. 19, 1995.
D002[b]	All	May 8, 1992.
D002[c]	All	Feb. 10, 1994.
D003 (cyanides)	All	May 8, 1992.
D003 (sulfides)	All	May 8, 1992.
D003 (explosives, reactives)	All	May 8, 1992.
D007	All	May 8, 1992.
D009	Nonwastewater	May 8, 1992.
D012	All	Sept. 19, 1995.
D013	All	Sept. 19, 1995.
D014	All	Sept. 19, 1995.
D015	All	Sept. 19, 1995.
D016	All	Sept. 19, 1995.
D017	All	Sept. 19, 1995.
D018	All, including mixed with radioactive wastes	Apr. 8, 1998.
D019	All, including mixed with radioactive wastes	Apr. 8, 1998.
D020	All, including mixed with radioactive wastes	Apr. 8, 1998.
D021	All, including mixed with radioactive wastes	Apr. 8, 1998.
D022	All, including mixed with radioactive wastes	Apr. 8, 1998.
D023	All, including mixed radioactive wastes	Apr. 8, 1998.
D024	All, including mixed radioactive wastes	Apr. 8, 1998.
D025	All, including mixed radioactive wastes	Apr. 8, 1998.
D026	All, including mixed radioactive wastes	Apr. 8, 1998.
D027	All, including mixed radioactive wastes	Apr. 8, 1998.
D028	All, including mixed radioactive wastes	Apr. 8, 1998.

NATIONAL CAPACITY LDR VARIANCES FOR UIC WASTES [a]—Continued

Waste code	Waste category	Effective date
D029	All, including mixed radioactive wastes	Apr. 8, 1998.
D030	All, including mixed radioactive wastes	Apr. 8, 1998.
D031	All, including mixed radioactive wastes	Apr. 8, 1998.
D032	All, including mixed radioactive wastes	Apr. 8, 1998.
D033	All, including mixed radioactive wastes	Apr. 8, 1998.
D034	All, including mixed radioactive wastes	Apr. 8, 1998.
D035	All, including mixed radioactive wastes	Apr. 8, 1998.
D036	All, including mixed radioactive wastes	Apr. 8, 1998.
D037	All, including mixed radioactive wastes	Apr. 8, 1998.
D038	All, including mixed radioactive wastes	Apr. 8, 1998.
D039	All, including mixed radioactive wastes	Apr. 8, 1998.
D040	All, including mixed radioactive wastes	Apr. 8, 1998.
D041	All, including mixed radioactive wastes	Apr. 8, 1998.
D042	All, including mixed radioactive wastes	Apr. 8, 1998.
D043	All, including mixed radioactive wastes	Apr. 8, 1998.
F007	All	June 8, 1991.
F032	All, including mixed radioactive wastes	May 12, 1999.
F034	All, including mixed radioactive wastes	May 12,1999.
F035	All, including mixed radioactive wastes	May 12, 1999.
F037	All	Nov. 8, 1992.
F038	All	Nov. 8, 1992.
F039	Wastewater	May 8, 1992.
K009	Wastewater	June 8, 1991.
K011	Nonwastewater	June 8, 1991.
K011	Wastewater	May 8, 1992.
K011	Nonwastewater	June 8, 1991.
K011	Wastewater	May 8, 1992.
K013	Nonwastewater	June 8, 1991.
K013	Wastewater	May 8, 1992.
K014	All	May 8, 1992.
K016 (dilute)	All	June 8, 1991.
K049	All	Aug. 8, 1990.
K050	All	Aug. 8, 1990.
K051	All	Aug. 8, 1990.
K052	All	Aug. 8, 1990.
K062	All	Aug. 8, 1990.
K071	All	Aug. 8, 1990.
K088	All	Jan. 8, 1997.
K104	All	Aug. 8, 1990.
K107	All	Nov. 8, 1992.
K108	All	Nov. 9, 1992.
K109	All	Nov. 9, 1992.
K110	All	Nov. 9, 1992.
K111	All	Nov. 9, 1992.
K112	All	Nov. 9, 1992.
K117	All	June 30, 1995.
K118	All	June 30, 1995.
K123	All	Nov. 9, 1992.
K124	All	Nov. 9, 1992.
K125	All	Nov. 9, 1992.
K126	All	Nov. 9, 1992.
K131	All	June 30, 1995.
K132	All	June 30, 1995.
K136	All	Nov. 9, 1992.
K141	All	Dec. 19, 1994.
K142	All	Dec. 19, 1994.
K143	All	Dec. 19, 1994.
K144	All	Dec. 19, 1994.
K145	All	Dec. 19, 1994.
K147	All	Dec. 19, 1994.
K148	All	Dec. 19, 1994.
K149	All	Dec. 19, 1994.
K150	All	Dec. 19, 1994.
K151	All	Dec. 19, 1994.
K156	All	July 8, 1996.
K157	All	July 8, 1996.
K158	All	July 8, 1996.
K159	All	July 8, 1996.
K160	All	July 8, 1996.
K161	All	July 8, 1996.
P127	All	July 8, 1996.
P128	All	July 8, 1996.

NATIONAL CAPACITY LDR VARIANCES FOR UIC WASTES [a]—Continued

Waste code	Waste category	Effective date
P185	All	July 8, 1996.
P188	All	July 8, 1996.
P189	All	July 8, 1996.
P190	All	July 8, 1996.
P191	All	July 8, 1996.
P192	All	July 8, 1996.
P194	All	July 8, 1996.
P196	All	July 8, 1996.
P197	All	July 8, 1996.
P198	All	July 8, 1996.
P199	All	July 8, 1996.
P201	All	July 8, 1996.
P202	All	July 8, 1996.
P203	All	July 8, 1996.
P204	All	July 8, 1996.
P205	All	July 8, 1996.
U271	All	July 8, 1996.
U277	All	July 8, 1996.
U278	All	July 8, 1996.
U279	All	July 8, 1996.
U280	All	July 8, 1996.
U328	All	Nov. 9, 1992.
U353	All	Nov. 9, 1992.
U359	All	Nov. 9, 1992.
U364	All	July 8, 1996.
U365	All	July 8, 1996.
U366	All	July 8, 1996.
U367	All	July 8, 1996.
U372	All	July 8, 1996.
U373	All	July 8, 1996.
U375	All	July 8, 1996.
U376	All	July 8, 1996.
U377	All	July 8, 1996.
U378	All	July 8, 1996.
U379	All	July 8, 1996.
U381	All	July 8, 1996.
U382	All	July 8, 1996.
U383	All	July 8, 1996.
U384	All	July 8, 1996.
U385	All	July 8, 1996.
U386	All	July 8, 1996.
U387	All	July 8, 1996.
U389	All	July 8, 1996.
U390	All	July 8, 1996.
U391	All	July 8, 1996.
U392	All	July 8, 1996.
U395	All	July 8, 1996.
U396	All	July 8, 1996.
U400	All	July 8, 1996.
U401	All	July 8, 1996.
U402	All	July 8, 1996.
U403	All	July 8, 1996.
U404	All	July 8, 1996.
U407	All	July 8, 1996.
U409	All	July 8, 1996.
U410	All	July 8, 1996.
U411	All	July 8, 1996.

[a] Wastes that are deep well disposed on-site receive a six-month variance, with restrictions effective in November 1990.
[b] Deepwell injected D002 liquids with a pH less than 2 must meet the California List treatment standards on August 8, 1990.
[c] Managed in systems defined in 40 CFR 144.6(e) and 14.6(e) as Class V injection wells, that do not engage in CWA-equivalent treatment before injection.
NOTE: This table is provided for the convenience of the reader.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

22. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

Subpart A—Requirements for Final Authorization

23. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by effective date in the **Federal Register**, and by adding

the following entries to Table 2 in chronological order by date of publication in the **Federal Register**, to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	*	*	*
May 12, 1997	Land Disposal Restrictions for Wood Preserving Wastes and Paperwork Reductions.	62 FR 26040	August 11, 1997.
*	*	*	*

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	*	*	*
August 11, 1997	Prohibition on land disposal of wood preserving wastes.	3004(g)(4)(c) and 3004 (m)	May 12, 1997. 62 FR 26040
May 12, 1999	Prohibition on land disposal of radioactive waste and soil and debris mixed with wood preserving wastes.	3004(m).	Do.
*	*	*	*

* * * * *

[FR Doc. 97–11636 Filed 5–9–97; 8:45 am]

BILLING CODE 6560–50–P

Federal Register

Tuesday
June 17, 1997

Part IV

Environmental Protection Agency

40 CFR Parts 261, 268, 271, and 302
Hazardous Waste Management System: Carbamate Production, Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Authorization of State Hazardous Waste Programs; and CERCLA Hazardous Substance Designation and Reportable Quantities; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 268, 271, and 302

[EPA530–Z–97–FFF; FRL–5839–7]

RIN 2050–AD59

Hazardous Waste Management System; Carbamate Production, Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Authorization of State Hazardous Waste Programs; and CERCLA Hazardous Substance Designation and Reportable Quantities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is amending its regulations to conform with the federal appeals court ruling in *Dithiocarbamate Task Force* v. *EPA,* 98 F.3d 1394 (D.C.Cir. 1996), that invalidated, in part, Agency regulations listing certain carbamate wastes as hazardous wastes under the Resource Conservation and Recovery Act (RCRA). These regulations pertain to hazardous waste management of carbamate industry wastes under RCRA, related rules affecting the list of hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and regulations issued under state programs approved by the Administrator. Under the court's decision, and amended in today's rule, the vacated federal hazardous waste listings and regulatory requirements based on those listings are to be treated as though they have never been in effect. State regulations, which may be more stringent than federal rules, were not necessarily affected by the court's ruling.

EFFECTIVE DATE: This final rule takes effect on May 29, 1997.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The Docket Identification Number is F–97–2CPF–FFFFF.

The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, it is recommended that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from the docket at no charge; additional copies are $0.15 per page.

FOR FURTHER INFORMATION CONTACT: The RCRA Hotline between 9:00a.m.–6:00 p.m. EST, toll-free, at 800–424–9346; 703–412–9810 from Government phones or if in the Washington, DC local calling area; or 800–553–7672 for the hearing impaired. For more detailed information on specific aspects of the rulemaking, contact Caroline Gerwe by calling 703–308–3540 or by writing, to U.S. Environmental Protection Agency, Office of Solid Waste, Hazardous Waste Identification Division, 401 M St., SW., (Mailcode 5304W), Washington, DC 20460.

SUPPLEMENTARY INFORMATION: This rule is available on the Internet. Please follow these instructions to access the rule electronically: From the World Wide Web (WWW), type http://www.epa.gov/epaoswer, then select option for Rules and Regulations.

The official record for this action is kept in a paper format. Accordingly, EPA has transferred all comments received into paper form and placed them into the official record, with all the comments received in writing. The official record is maintained at the address in the **ADDRESSES** section at the beginning of this document.

Outline of Today's Rule

I. Background

EPA lists wastes as hazardous wastes under section 3001 of RCRA, 42 U.S.C. 6921. Once a waste is listed as hazardous it becomes subject to federal requirements for persons who generate, transport, treat, store, or dispose of such waste. Facilities that must meet the hazardous waste management requirements, including the need to obtain permits to operate, are commonly referred to as ''Subtitle C'' facilities. Subtitle C is Congress' original statutory designation for that part of RCRA that directs EPA to issue regulations for hazardous wastes.

EPA standards and procedural regulations implementing Subtitle C are found generally at 40 CFR parts 260 through 272. Criteria and procedures for identifying and listing hazardous wastes are found at 40 CFR part 261.

General standards for generators of hazardous waste are found at 40 CFR part 262. General standards for transporters of hazardous waste are found at 40 CFR part 263. General standards for owners and operators of hazardous waste treatment, storage and disposal facilities—including standards for obtaining permits—are found at 40 CFR part 264.

Hazardous wastes are also subject to land disposal restrictions under 40 CFR part 268. EPA's authorizations for state hazardous waste programs are found at 40 CFR part 272. The requirements for obtaining these authorizations are found at 40 CFR part 271.

In addition, hazardous wastes having the characteristics identified under, or listed pursuant to, RCRA section 3001 (except when suspended by Congress) become hazardous substances under section 101(14)(C) of CERCLA, 42 U.S.C. 9601(14)(C). A reportable quantity (RQ) of one pound for reporting environmental releases is established for each substance, as provided by section 102(b) of CERCLA, 42 U.S.C. 9602(b). The one-pound statutory RQ applies until adjusted by regulations.

On February 9, 1995, the EPA published in the **Federal Register** (60 FR 7824) a rule listing as hazardous wastes under RCRA various wastes from four groups of carbamate compounds—carbamates, carbamoyl oximes, thiocarbamates and dithiocarbamates. These compounds, generally, are used as pesticides, herbicides and fungicides and in the rubber, wood and textile industries. This rule became effective on August 9, 1995.

The rule added 58 specific carbamate compounds to the list of hazardous constituents upon which RCRA hazardous waste listing determinations are based. This list of constituents appears at Appendix VIII of 40 CFR part 261.

These same 58 compounds were added to the list of commercial chemical products that are hazardous wastes only when they are discarded. This list is found at 40 CFR 261.33 and is divided into acutely hazardous wastes (''P-wastes'') and other toxic wastes (''U-wastes''). P-wastes are listed in subsection 261.33(e) and U-wastes are listed in subsection 261.33(f). Eighteen of the carbamates were P-wastes and 40 were U-wastes.

The rule, also, added six hazardous wastes generated from the industrial production of the carbamate chemicals to 40 CFR 261.32. These are hazardous wastes from specific sources, or ''K-wastes.'' The carbamate wastes were given numbers K156, K157, K158, K159, K160, and K161. K159 and K160 applied to certain wastes from thiocarbamate production; K161 applied to a waste stream from dithiocarbamate production; K156, K157 and K158

applied to various waste streams from the production of carbamates, proper.

As part of the listing rule, in accordance with Agency regulations, EPA also listed in Appendix VII of 40 CFR Part 261 the hazardous constituents upon which the production waste listings were based.

The February 1995 rule also designated the carbamate wastes as CERCLA hazardous substances and added them to the hazardous substance list at 40 CFR 302.4 with statutory one-pound RQs, as required under CERCLA sections 101(14)(C) and 102.

Subsequent to the February 1995 listing rule, EPA issued land disposal restriction (LDR) regulations for the carbamate wastes. These were issued on April 8, 1996 (61 FR 15663), and corrected June 28, 1996 (61 FR 33683). The prohibition on land disposal of carbamate wastes was effective July 8, 1996 and the prohibition on radioactive waste mixed with newly listed or identified wastes, including soil and debris, is effective April 8, 1998. In addition, EPA amended its requirements for approval of state hazardous waste programs by adding the carbamate listing and LDR regulations to Tables 1 and 2 of 40 CFR part 271.1. (See 61 FR 15659–15660, April 8, 1996.) These tables list the regulations that establish the requirements and prohibitions applicable to state hazardous waste programs.

On November 1, 1996, the United States Court of Appeals for the District of Columbia Circuit, in *Dithiocarbamate Task Force* v. *EPA*, ruled that EPA failed to follow proper rulemaking procedures in making some of the carbamate listing determinations and vacated them. Accordingly, EPA is removing from the Code of Federal Regulations those listings vacated by the court and all references to those listings. EPA notes that substantial portions of the decisions made in the carbamate listing rule remain in effect and are not changed by the court's ruling.

The court vacated 24 U wastes, one K-waste (K160), and three of the K-wastes (K156, K157 and K158) only to the extent they apply to the chemical, 3-iodo-2-propynyl n-butylcarbamate (IPBC). Twenty-three of the vacated U wastes consisted of all the dithiocarbamates and thiocarbamates. The other vacated U waste was IPBC, a carbamate.

II. Amended Regulations

Table 1 lists the 24 vacated U wastes that are removed from 40 CFR 261.33(f).

TABLE 1.—VACATED U WASTES

Hazardous waste No.	Common name	Chemical abstracts name	Chemical abstracts No.
U277	Sulfallate	Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester	95–06–7
U365	Molinate	1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester	2212–67–1
U366	Dazomet	2H–1,3,5-thiadiazine-2-thione, tetrahydro-3,5-dimethyl-	533–74–4
U375	3-Iodo-2-propynyl n-butylcarbamate	Carbamic acid, butyl-, 3-iodo-2-propynyl ester	55406–53–6
U376	Selenium tetrakis(dimethyl-dithiocarbamate).	Carbamodithioic acid, dimethyl-, tetraanhydro-sulfide with orthothio-selenious acid.	144–34–3
U377	Potassium n-methyl-dithiocarbamate	Carbamodithioic acid, methyl-, monopotassium salt	137–41–7
U378	Potassium n-hydroxymethyl -n-methyl-dithiocarbamate.	Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt	51026–28–9
U379	Sodium dibutyl-dithiocarbamate	Carbamodithioic acid, dibutyl, sodium salt	136–30–1
U381	Sodium diethyl-dithiocarbamate	Carbamodithioic acid, diethyl-, sodium salt	148–18–5
U382	Sodium dimethyl-dithiocarbamate	Carbamodithioic acid, dimethyl-, sodium salt	128–04–1
U383	Potassium dimethyl-dithiocarbamate	Carbamodithioic acid, dimethyl-, potassium salt	128–03–0
U384	Metam Sodium	Carbamodithioic acid, methyl-, monosodium salt	137–42–8
U385	Vernolate	Carbamothioic acid, dipropyl-,S-propyl ester	1929–77–7
U386	Cycloate	Carbamothioic acid, cyclohexylethyl-, S-ethyl ester	1134–23–2
U390	EPTC	Carbamothioic acid, dipropyl-, S-ethyl ester	759–94–4
U391	Pebulate	Carbamothioic acid, butylethyl-, S-propyl ester	1114–71–2
U392	Butylate	Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester	2008–41–5
U393	Copper dimethyl-dithiocarbamate	Copper, bis(dimethylcarbamo-dithioato-S,S'),	137–29–1
U396	Ferbam	Iron, tris(dimethylcarbamo-dithioato-S,S')-	14484–64–1
U400	Bis(penta-methylene) -thiuram tetrasulfide.	Piperidine, 1,1'-(tetrathio-dicarbonothioyl)-bis-	120–54–7
U401	Tetramethylthiuram monosulfide	Bis(dimethylthiocarbamoyl) sulfide	97–74–5
U402	Tetrabutylthiuram disulfide	Thioperoxydicarbonic diamide, tetrabutyl-	1634–02–2
U403	Disulfiram	Thioperoxydicarbonic diamide, tetraethyl	97–77–8
U407	Ethyl Ziram	Zinc, bis(diethylcarbamo-dithioato-S,S')-	14324–55–1

In 40 CFR 261.31, the following K-waste listing is deleted:

K160: Solids (including filter wastes, separation solids, and spent catalysts) from the production of thiocarbamates and solids from the treatment of thiocarbamate wastes.

In addition, the hazardous waste listings for K156, K157, and K158 are amended. Originally, they read as follows:

K156: Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.

K157: Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.

K158: Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes.

EPA is modifying each of these three listing descriptions to include the following limitation: (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)

EPA is not deleting any constituents in the Appendix VIII hazardous constituent list of 40 CFR part 261, since the Dithiocarbamate Task Force ruling did not affect those listings. The Agency is, however, deleting any mention of the associated vacated hazardous waste codes in Appendix VIII. While the regulations for waste management at 40 CFR parts 262 through 264 are not affected by the court's ruling, it is clear

that they are not applicable to any of the vacated hazardous waste listings (unless those wastes exhibit a hazardous waste characteristic described under 40 CFR 261.20 to 261.24). However, to the extent that the wastes described in the vacated listings were included in federal permits before the ruling, appropriate action may need to be taken by permittees and permitting authorities to amend the permits. Any need to revise state permits will depend on state law. Since state law may be more stringent than federal law (see RCRA section 3009) there may be circumstances in which carbamate listings would be required to remain in the permits.

The land disposal restriction (LDR) regulations for hazardous wastes are amended to remove the U and K wastes vacated by the court. Specifically the Agency is amending 40 CFR 268.39 to remove LDRs for K160, U277, U365, U366, U375, U376, U377, U378, U379, U381, U382, U383, U384, U385, U386, U390, U391, U392, U393, U396, U400, U401, U402, U403, and U407.

In addition, the description of the K156, K157 and K158 wastes in 40 CFR 268.40 are amended to reflect the fact that they do not apply to wastes from production of IPBC.

In a recent action to correct tables applicable to the LDR regulations (62 FR 7501, February 19, 1997), the Agency removed the vacated carbamate hazardous waste codes from the list of treatment standards contained in section 268.40 and removed Cycloate and IPBC from the Universal Treatment Standards (UTS) table in 40 CFR 268.48. The hazardous waste listings based on these two constituents were vacated by the Dithiocarbamate Task Force ruling and these constituents have not been cited as the basis for listing any other hazardous waste in Appendix VII of part 261. EPA notes these constituents are still listed in Appendix VIII of 40 CFR part 261 as hazardous constituents upon which EPA may base listings.

All other constituents on the Universal Treatment Standards table are being retained. This is because they remain the basis for listed hazardous wastes that have not been affected by the Dithiocarbamate Task Force ruling. Accordingly, the UTS standards for the following constituents which are part of the basis for K159 are retained: Butylate, EPTC, Molinate, Pebulate, and Vernolate. Also retained is Dithiocarbamates (total). The determination of total dithiocarbamates is part of the basis for listing of K161, which was not invalidated by the court ruling.

Today's final rule also removes the vacated U and K wastes from CERCLA designation as hazardous substances. Accordingly, all these wastes are removed from the list of CERCLA hazardous substances at 40 CFR 302.4.

III. State Authority

The tables in 40 CFR 271.1 are amended to reflect the issuance of this notice so that States will understand they are not required by the federal Resource Conservation and Recovery Act to adopt the hazardous waste listings vacated by the Dithiocarbamate Task Force ruling. Since today's rule does not establish any new regulation, no additional requirements or obligations are imposed on the States by its promulgation. RCRA section 3009 provides that States may not issue regulations less stringent than those authorized under Subtitle C of RCRA. However, section 3009 of RCRA also provides that States may impose more stringent requirements than those regulations promulgated by EPA under Subtitle C. Thus, regulations vacated by the Dithiocarbamate Task Force ruling may be permissible under state law.

IV. Good Cause Exemption From Notice-and-Comment Rulemaking Procedures

The Administrative Procedure Act generally requires agencies to provide prior notice and opportunity for public comment before issuing a final rule. 5 U.S.C. 553(b). Rules are exempt from this requirement if the issuing agency finds for good cause that notice and comment are unnecessary. 5 U.S.C. 553(b)(3)(B).

EPA has determined that providing prior notice and opportunity for comment on the amending of these carbamate regulations is unnecessary. These regulations are no longer legally in effect by order of the federal appeals court. Thus, amending them has no legal impact and only states the current legal status of the rules.

For the same reasons, EPA believes there is good cause for making the amending of these regulations immediately effective. See 5 U.S.C. 553(d).

V. Analyses Under E.O. 12866, Unfunded Mandates Reform Act of 1995, Regulatory Flexibility Act, Small Business Regulatory Enforcement Fairness Act of 1996 and Paperwork Reduction Act

The amending of the carbamate regulations only reflects their current legal status and has no regulatory impact, therefore, this action is not a ''significant'' regulatory action by E.O. 12866. This action is not a significant regulatory action and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose annual costs of $100 million or more, will not significantly or uniquely affect small governments, and is not a significant federal intergovernmental mandate. The Agency thus has no obligations under sections 202, 203, 204 and 205 of the Unfunded Mandates Reform Act. Moreover, since this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to sections 603 or 604 of the Regulatory Flexibility Act.

Under 5 U.S.C. 801(a)(1)(A), added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

Lastly, the removal of these regulations from the Code of Federal Regulations does not affect requirements under the Paperwork Reduction Act since they are no longer legally in effect.

List of Subjects

40 CFR Part 261

Environmental protection, Hazardous materials, Hazardous waste, Recycling, Reporting and recorkeeping requirements.

40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous materials transportation, Hazardous waste, Indians—lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 302

Environmental protection, Air pollution control, Chemicals, Emergency Planning and Community Right-to-Know Act, Extremely hazardous substances, Hazardous chemicals, Hazardous materials, Hazardous substances, Hazardous waste, Intergovernmental relations, Natural resources, Reporting and recordkeeping requirements, Superfund, Water pollution control, Water supply.

Dated: May 29, 1997.

Timothy Fields, Jr.,

Acting Assistant Administrator.

For the reasons set out in the preamble, amend chapter I of title 40 of the Code of Federal Regulations as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. Section 261.32 is amended in the table under ''Organic Chemicals'' by removing the entry for K160, and revising the entries for K156, K157, and K158 to read as follows:

§ 261.32 Hazardous waste from specific sources.

* * * * *

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
*	*	*
Organic chemicals:		
*	*	*
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.).	(T)
*	*	*

§ 261.33 [Amended]

3. Section 261.33(f) is amended in the table by removing in their entirety the following entries:

H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester, (U365)
Bis(dimethylthiocarbamoyl) sulfide, (U401)
Bis (pentamethylene)thiuram tetrasulfide, (U400)
Butylate, (U392)
Carbamic acid, butyl-,3-iodo-2-propynyl ester, (U375)
Carbamodithioic acid, dibutyl, sodium salt, (U379)
Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester, (U277)
Carbamodithioic acid, diethyl-, sodium salt, (U381)
Carbamodithioic acid, dimethyl-, potassium salt, (U383)
Carbamodithioic acid, dimethyl-, sodium salt, (U382)
Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid, (U376)
Carbamodithioic acid, (hydroxymethyl) methyl-,monopotassium salt, (U378)
Carbamodithioic acid, methyl-, monosodium salt, (U384)
Carbamodithioic acid, methyl,-monopotassium salt, (U377)
Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester, (U392)
Carbamothioic acid, butylethyl-,S-propyl ester, (U391)
Carbamothioic acid, cyclohexylethyl-, S-ethyl ester, (U386)
Carbamothioic acid, dipropyl-, S-ethyl ester, (U390)
Carbamothioic acid, dipropyl-, S-propyl ester, (U385)
Copper, bis(dimethylcarbamodithioato-S,S')-, (U393)
Copper dimethyldithiocarbamate,(U393)
Cycloate, (U386)
Dazomet, (U366)
Disulfiram, (U403)
EPTC, (U390)
Ethyl Ziram, (U407)
Ferbam, (U396)
3-Iodo-2-propynyl n-butylcarbamate, (U375)
Iron, tris(dimethylcarbamodithioato-S,S')-, (U396)
Metam Sodium, (U384)
Molinate, (U365)
Pebulate, (U391)
Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-, (U400)
Potassium dimethyldithiocarbamate, (U383)
Potassium n-hydroxymethyl-n-methyldi-thiocarbamate, (U378)
Potassium n-methyldithiocarbamate, (U377)
Selenium, tetrakis(dimethyldithiocarbamate), (U376)
Sodium dibutyldithiocarbamate, (U379)
Sodium diethyldithiocarbamate, (U381)
Sodium dimethyldithiocarbamate, (U382)
Sulfallate, (U277)
Tetrabutylthiuram disulfide, (U402)
Tetramethylthiuram monosulfide, (U401)
2H–1,3,5-Tthiadiazine-2-thione, tetrahydro-3,5-dimethyl-, (U366)
Thioperoxydicarbonic diamide, tetrabutyl, (U402)
Thioperoxydicarbonic diamide, tetraethyl, (U403)
Vernolate, (U385)
Zinc, bis(diethylcarbamodithioato-S,S')-, (U407)

Appendix VII to Part 261 [Amended]

4. Appendix VII to Part 261 is amended by removing the entire entry for EPA hazardous waste number K160.

5. Appendix VIII to Part 261 is amended by removing entries ''Potassium hyroxymethyl-n-methyl-dithiocarbamate'' and ''Tetrabutylthiuram monosulfide'', and by revising and adding in appropriate alphabetical order the following entries to read as follows:

APPENDIX VIII TO PART 261—HAZARDOUS CONSTITUENTS

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* *	* * * *		*
Bis(pentamethylene)-thiuram tetrasulfide.	Piperidine, 1,1′-(tetrathiodicarbonothioyl)-bis-	120–54–7	
* *	* * * *		*
Butylate	Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester	2008–41–5	
* *	* * * *		*
Copper dimethyldithiocarbamate	Copper, bis(dimethylcarbamodithioato-S,S')-,	137–29–1	
* *	* * * *		*
Cycloate	Carbamothioic acid, cyclohexylethyl-, S-ethyl ester	1134–23–2	
* *	* * * *		*
Dazomet	2H–1,3,5-thiadiazine-2-thione, tetrahydro-3,5-dimethyl	533–74–4	
* *	* * * *		*
Disulfiram	Thioperoxydicarbonic diamide, tetraethyl	97–77–8	
* *	* * * *		*
EPTC	Carbamothioic acid, dipropyl-, S-ethyl ester	759–94–4	
* *	* * * *		*
Ethyl Ziram	Zinc, bis(diethylcarbamodithioato-S,S')-	14324–55–1	
* *	* * * *		*
Ferbam	Iron, tris(dimethylcarbamodithioato-S,S')-,	14484–64–1	
* *	* * * *		*
3-Iodo-2-propynyl n-butylcarbamate	Carbamic acid, butyl-, 3-iodo-2-propynyl ester	55406–53–6	
* *	* * * *		*
Metam Sodium	Carbamodithioic acid, methyl-, monosodium salt	137–42–8	
* *	* * * *		*
Molinate	1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester	2212–67–1	
* *	* * * *		*
Pebulate	Carbamothioic acid, butylethyl-, S-propyl ester	1114–71–2	
* *	* * * *		*
Potassium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl, potassium salt	128–03–0	
Potassium n-hydroxymethyl-n-methyl-dithiocarbamate.	Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt	51026–28–9	
Potassium n-methyldithiocarbamate	Carbamodithioic acid, methyl-monopotassium salt	137–41–7	
* *	* * * *		*
Selenium, tetrakis(dimethyl-dithiocarbamate).	Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid.	144–34–3	
* *	* * * *		*
Sodium dibutyldithiocarbamate	Carbamodithioic acid, dibutyl, sodium salt	136–30–1	
Sodium diethyldithiocarbamate	Carbamodithioic acid, diethyl-, sodium salt	148–18–5	
Sodium dimethyldithiocarbamate	Carbamodithioic acid, dimethyl-, sodium salt	128–04–1	
* *	* * * *		*
Sulfallate	Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester	95–06–7	
* *	* * * *		*
Tetrabutylthiuram disulfide	Thioperoxydicarbonic diamide, tetrabutyl	1634–02–2	
* *	* * * *		*
Tetramethylthiuram monosulfide	Bis(dimethylthiocarbamoyl) sulfide	97–74–5	
* *	* * * *		*
Vernolate	Carbamothioic acid, dipropyl-,S-propyl ester	1929–77–7	
* *	* * * *		*

PART 268—LAND DISPOSAL RESTRICTIONS

6. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

7. Section 268.39 is amended by revising paragraphs (a) and (d) to read as follows:

§ 268.39 Waste specific prohibitions—spent aluminum potliners; reactive; and carbamate wastes.

(a) On July 8, 1996, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste numbers K156–K159, and K161; and in 40 CFR 261.33 as EPA Hazardous Waste numbers P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U278–U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409–U411 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

* * * * *

(d) On April 8, 1998, radioactive wastes mixed with K088, K156–K159, K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U278–U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409–U411 are prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

* * * * *

§ 268.40 [Amended]

8. In § 268.40, the table is amended in the entries for K156, K157, and K158 by adding the language ''(This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)'' at the end of the existing text in the second column.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

9. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

10. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication in the **Federal Register**, and by adding the following entry to Table 2 in chronological order by date of publication in the **Federal Register** to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	*	*	*
[insert date of publication]	Vacated Carbamate wastes	[insert FEDERAL REGISTER page numbers.]	August 9, 1995.
*	*	*	*

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	*	*	*
July 8, 1996	Prohibition on land disposal of carbamate wastes (Vacated wastes).	3004(m)	[insert FR publication date, insert FR page numbers]
*	*	*	*
April 8, 1998	Prohibition on disposal of radioactive waste mixed with newly listed or identified wastes, including soil and debris (Vacated carbamate wastes).	3304(g)(4)(c) and 3004(m)	[insert FR publication date, insert FR page numbers]
*	*	*	*

* * * * *

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

11. The authority citation for part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

§ 302.4 [Amended]

12. Table 302.4 in § 302.4 is amended by removing the entries for ''1H-Azepine-1-carbothioic acid, hexahydro-, S-ethyl ester (Molinate)'', ''Bis(dimethylthiocarbamoyl) sulfide (Tetramethylthiuram monosulfide)'', ''Carbamic acid, butyl-, 3-iodo-2-propynyl ester (3-iodo-2-propynyl n-butylcarbamate)'', ''Carbamodithioic acid, dibutyl, sodium salt (Sodium dibutyldithiocarbamate)'', ''Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester (Sulfallate)'', ''Carbamodithioic acid, diethyl-, sodium salt (Sodium diethyldithiocarbamate)'', ''Carbamodithioic acid, dimethyl, potassium salt (Potassium dimethyldithiocarbamate)'', ''Carbamodithioic acid, dimethyl-, sodium salt (Sodium dimethyldithiocarbamate)'', ''Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthothioselenious acid (Selenium, tetrakis (dimethyldithiocarbamate))'', ''Carbamodithioic acid, (hydroxymethyl)methyl-, monopotassium salt (Potassium n-hydroxymethyl-n-methyldithiocarbamate)'', ''Carbamodithioic acid, methyl,-monopotassium salt (Potassium n-methyldithiocarbamate)'', ''Carbamodithioic acid, methyl-, monosodium salt (Metam Sodium)'', ''Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester (Butylate)'', ''Carbamothioic acid, butylethyl-, S-propyl ester (Pebulate)'', ''Carbamothioic acid, cyclohexylethyl-, S-ethyl ester (Cycloate)'', ''Carbamothioic acid, dipropyl-, S-ethyl ester (EPTC)'', ''Carbamothioic acid,

dipropyl-, S-propyl ester (Vernolate)'', ''Copper, bis(dimethylcarbamodithioato-S,S')-(Cooper dimethyldithiocarbamate)'', ''Iron, tris(dimethylcarbamodithioato-S,S')-(Ferbam)'', ''Piperidine, 1,1'-(tetrathiodicarbonothioyl)-bis-(Bis(pentamenthylene) thiuram tetrasulfide)'', ''2H–1,3,5-Thiadiazine-2-thione, tetrahydro-3,5-dimethyl-(Dazomet)'', ''Thioperoxydicarbonic diamide, tetrabutyl (Tetrabutylthiuram disulfide)'', ''Thioperoxydicarbonic diamide, tetraethyl (Disulfiram)'', ''Zinc, bis(diethylcarbamodithioato-S,S')-(Ethyl Ziram)'', and ''K160''.

13. Table 302.4 in § 302.4 also is amended by revising the following entries, (applicable footnotes have been republished without change), to read as follows:

§ 302.4 Designation of hazardous substances.

* * * * *

TABLE 302.4.—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

[NOTE: All Comments/Notes Are Located at the End of This Table]

Hazardous substance	CASRN	Regulatory synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA waste number	Category	Pounds (Kg)
* * * *			*	*	*		
K156 ..... Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	.....	.....	*1	4	K156	.....	##
K157 ..... Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	.....	.....	*1	4	K157	.....	##
K158 ..... Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)	.....	.....	*1	4	K158	.....	##
* * * *			*	*	*		

† Indicates the statutory source as defined by 1, 2, 3, and 4 below.

* * * * * * *

4 Indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA section 3001.

*1 Indicates that the 1-pound RQ is a CERCLA statutory RQ.

* * * * * * *

The Agency may adjust the statutory RQ for this hazardous substance in a future rulemaking; until then the statutory RQ applies.

* * * * * * *

Appendix A to § 302.4 [Amended]

14. Appendix A to § 302.4-Sequential CAS Registry Number List of CERCLA Hazardous Substances is amended by removing the entries for the following CAS Registry Numbers: 95067, 97745, 97778, 120547, 128030, 128041, 136301, 137291, 137417, 137428, 144343, 148185, 533744, 759944, 1114712, 1134232, 1634022, 1929777, 2008415, 2212671, 14324551, 14484641, 51026289, and 55406536.

[FR Doc. 97–15409 Filed 6–16–97; 8:45 am]

BILLING CODE 6560–50–P

federal register

Monday
July 14, 1997

Part IV

Environmental Protection Agency

40 CFR Part 268

Land Disposal Restrictions Phase III—Emergency Extension of the K088 National Capacity Variance; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[EPA # –530–Z–96–P33F–FFFFF; FRL–5857–7]

Land Disposal Restrictions Phase III—Emergency Extension of the K088 National Capacity Variance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Under the Land Disposal Restrictions (LDR) program of the Resource Conservation and Recovery Act (RCRA), EPA is extending the current national capacity variance for spent potliners from primary aluminum production (Hazardous Waste Number K088) for three (3) months. Thus, K088 wastes may be land disposed without being treated to meet LDR treatment standards until October 8, 1997, three months from the current treatment standard effective date of July 8, 1997. EPA is taking this action because it now appears that sufficient treatment capacity exists which is capable of achieving the treatment standards promulgated by EPA on March 8, 1996, the process provides substantial treatment of spent potliners and minimizes the threats posed by land disposal of these wastes, and the treatment and disposal capacity provided for the waste will be protective of human health and the environment because it will occur at subtitle C units. EPA is extending the national capacity variance for a further three months in order to provide time for generators to make contractual and other logistical arrangements relating to utilization of the treatment capacity.

DATES: This rule is effective July 7, 1997.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–P33F–FFFFF. The RCRA Docket is open from 9:00 a.m. to 4:00 p.m. Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 (toll-free) or TDD (800) 553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For specific information, contact the Waste Treatment Branch (5302W), Office of Solid Waste (OSW), U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460; phone (703) 308–8434. For information on the capacity analyses, call Pan Lee or Bill Kline at (703) 308–8440. For information on the regulatory impact analyses, contact Paul Borst at (703) 308–0481. For other questions, call John Austin at (703) 308–0436 or Mary Cunningham at (703) 308–8453.

SUPPLEMENTARY INFORMATION:

Availability of rule on Internet

This Federal Register notice is available on the Internet System through the EPA Public Web Page at: http://www.epa.gov/EPA-WASTE/. For the text of the notice, choose: Year/Month/Day.

Table of Contents

I. Background

Land disposal of hazardous wastes without prior treatment is largely prohibited by law. RCRA sections 3004(d), (e) and (g). The prohibition on land disposal is normally to take effect immediately on promulgation, but may be extended if EPA finds that adequate alternative treatment, recovery or disposal capacity which protects human health and the environment will not be available. RCRA section 3004(h)(2). In that event, the prohibition is to take effect on the earliest date on which such adequate capacity exists, and in no event be extended nationally for more than two years from the promulgation date. *Id*.

A. The Existing Treatment Standard and National Capacity Variance for Spent Potliners

On April 8, 1996, EPA promulgated a prohibition on land disposing spent potliners from primary aluminum production (Hazardous Waste K088) unless the waste satisfied the treatment standards for K088 established by EPA as part of the same rulemaking. (61 FR 15566, April 8, 1996). Spent potliners are a highly toxic hazardous waste, whose hazardous constituents include cyanide (present in concentrations between 0.1 and 1 percent, which are quite high for such a toxic constituent), toxic metals, and polycyclic aromatic hydrocarbons (PAHs). See the Final BDAT Background Document for Spent Potliners from Primary Aluminum Reduction—K088, February 29, 1995. These wastes also contain high concentrations of fluoride. See generally *id*. at 61 FR 15584–15585. Previous improper management of spent potliners has resulted in widespread groundwater contamination with cyanide and fluoride, and was an important factor in EPA's decision to list these materials as hazardous wastes. See 53 FR 35412, September 13, 1988. The treatment standards for K088 wastes require substantial reductions in the total concentration of organic hazardous constituents and cyanide, and substantial reductions in the leachability of toxic metals and fluoride. See 61 FR 15626. The reduction in leachability is measured by application of the Toxicity Characteristic Leaching Procedure (TCLP), SW–846 Method 1311. *Id*.

These treatment standards are based upon performance of combustion technology plus stabilization treatment of combustion residues. *Id*. at 15584. The treatment standard for fluoride is based upon the performance demonstrated by the treatment process developed by Reynolds Metals Company (Reynolds) during studies conducted as part of their application for delisting [1] treated K088. See 61 FR 15585. Although treatment standards were based upon these technologies, any treatment technology (other than impermissible dilution) may be used to achieve these established numerical

[1] EPA granted a final exclusion from the lists of hazardous wastes contained in 40 CFR 261.32 —i.e., a delisting—for certain solid wastes derived from the treatment of K088 at Reynolds Metals Company, Gum Springs, Arkansas (56 FR 67197, December 30, 1991). The delisting is based on treating the same parameters covered by the LDR treatment standard, and compliance is measured by TCLP analyses for toxic metals, PAHs, cyanide, and fluoride. However, as explained later in this Notice, the delisting was incorrect and will be withdrawn.

standards. Data in the administrative record indicate that these treatment standards are achievable by a number of different technologies. See the Final BDAT Background Document for Spent Potliners from Primary Aluminum Reduction—K088, February 29, 1995, available in the docket.

Notwithstanding that a number of different treatment technologies can achieve the treatment standard, in fact, virtually all existing treatment capacity is provided by a single operation, the Reynolds treatment facility located in Gum Springs, Arkansas. See 61 FR 15589; see also Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III (February 1996, Volume I, pages 4–4 to 4–11). The Reynolds' process entails the crushing and sizing of spent potliner materials, the addition of roughly equal portions of limestone and brown sand as flux, and the feeding of the combined mixture to a rotary kiln for thermal destruction of cyanide and PAHs. Spent potliners (SPL) are generated in large volumes ranging from 100,000 to 125,000 tons annually.[2] Of the approximate 140,000 tons of treatment capacity EPA estimated was available, 120,000 tons are provided by Reynolds.[3]

For the purposes of comparing required treatment capacity to available capacity, EPA combined all the data available and presented in the updated Capacity Background Document[4] to estimate that approximately 90,000 tons per year of K088 is expected to require treatment. As noted above and in the Background Document, Reynolds provides sufficient treatment volume to accommodate this volume of waste.[5]

II. Subsequent Events

Because there is adequate volume of treatment capacity, the issue becomes one of the environmental adequacy, specifically whether treatment satisfies the requirements of section 3004(m) which says that treatment is to be sufficient to minimize threats to human health and the environment posed by land disposal of the waste, and section 3004 (h)(2) which says that to be adequate treatment and disposal capacity must be protective of human health and the environment.

Events occurring after promulgation of the K088 treatment standards have raised questions about each of these issues. Reynolds appears able to treat spent potliners to meet the promulgated treatment standards.[6] However, as set out in the January 14 notice, the leachate being generated from actual disposal of the treatment residues is more hazardous than initially anticipated. In hindsight, it is now apparent that spent potliners are themselves highly alkaline, and contain cyanide, arsenic, and fluoride—constituents which are most soluble under alkaline pH. Reynolds in fact disposed of most of the treatment residues from its process in a dedicated monofill (a landfill receiving only these treatment residues) where pH is alkaline (the pH of the treatment residue is essentially unbuffered by anything in the landfill), and the concentrations of these constituents were high. As measured in September 1996, total cyanide concentrations in the leachate were 46.5 mg/L (the treatment standards for K088 wastewaters specify a concentration of 1.2 mg/L); arsenic concentrations are at 6.55 mg/L (treatment standard 1.2 mg/L); and fluoride concentrations are at 2228 mg/L (treatment standard 35 mg/L). (Gum Springs Leachate Analytical Results, Reynolds Metals Co., Sept. 26, 1996).[7] Other residues were used as fill material in unlined pits at a Hurricane Creek, Arkansas mining site, and as a test all-weather road surface at the mining site (62 FR 1992, January 14, 1997). The levels of hazardous constituents and fluoride in the leachate and runoff from this site were less than those from the landfill, undoubtedly because the prevailing pH is acidic rather than basic, but still were high enough to warrant regulatory concern.

As set out in the January 14 notice, EPA had failed to take into account the effect of alkaline disposal conditions on potliners and potliner treatment residues when promulgating either the treatment standard for K088 wastes or the delisting for the treatment residues from Reynolds' process. EPA's immediate response, set out in the January notice, was to extend the national capacity variance for six months for two reasons: (1) because of the delisting, the disposal capacity provided by Reynolds was not protective since the wastes could be disposed essentially anywhere under federal law, and (2) because there was a possibility that the treatment process might actually be increasing the hazards posed by land disposal of the waste by increasing hazardous constituent and fluoride mobility. See 62 FR 1994. Because EPA had some expectation that short-term treatment process changes could resolve some of these problems, EPA extended the national capacity variance until July 8, 1997 (62 FR 1992).

Following this extension, Reynolds initiated various full scale tests in an attempt to find a process change that would result in improved destruction of cyanide, and greater immobilization of arsenic and fluoride. On April 9, 1997, Reynolds presented to EPA representatives a confidential summary of the research and development testing performed pursuant to improving the Gum Springs' treatment residue. (See April 4, 1997 letter to William Gallager, EPA Region 6 from Patrick Grover, Reynolds Metals Company.) These results indicate that EPA's prior judgement that the process could be modified relatively quickly by substitution of different sand and other means of pH control (62 FR 1995), has proven to be overly optimistic. Reynolds is continuing to consider options that they believe may both increase the thoroughness of combustion of the cyanide, and reduce leachabilty of any remaining cyanide in the residue, as well as further reducing the mobility of the fluoride and arsenic. Also, Reynolds is continuing to try to isolate and remove additional sources of arsenic in the process, and is considering ways to lower the pH of the residue, which may further reduce leachabilty of the constituents of concern. After further discussions with Reynolds and re-analysis of data from the existing Reynolds' process,[8] EPA too is reconsidering the potential causes of the unexpectedly high levels of hazardous constituents. As discussed below, however, recent developments have satisfied the Agency's immediate concern that safe capacity be provided.

[2] Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III (February 1996, Volume I, pages 4–5 to 4–8). Because SPL are not generated continuously, and because the rate of generation fluctuates according to the amount of aluminum produced, it is not possible to estimate this figure with more accuracy.

[3] Id., pages 4–9 to 4–10.

[4] Background Document (pages 6—12) for Capacity Analysis Update for Land Disposal Restrictions—Phase III: Spent Aluminum Potliner (Final Rule), December 1996 (part of the docket files for Emergency Extension of the K088 Capacity Variance; Final Rule; 62 FR 1992, January 14, 1997). The capacity analysis in this document reflects generation data and other information submitted after the publication date (April 8, 1996) for the LDR Phase III Final Rule.

[5] Id., pages 12–16.

[6] Commenters have questioned this, and EPA responds to those comments below.

[7] EPA was not aware of these data until the Fall of 1996, and, in particular was not aware of these data during the rulemaking proceeding leading to establishing the K088 treatment standard. EPA notes further that the leachate from the landfill is being intercepted and collected by Reynolds, and so is not contaminating the environment at the treatment site. However, EPA also notes that there is no interception of leachate at the Hurricane Creek Mine Site and that Reynolds has agreed to cease disposal at the mine site effective June 1, 1997.

[8] See Discussions on TCLP Results and Monofill Leachate Quality, Reynolds, May 29, 1997.

III. EPA's Decision With Respect to Extending the National Capacity Variance

The situation EPA is evaluating is thus one where a waste is being treated to meet the promulgated treatment standard, but actual performance of the treatment technology is less than predicted for some of the waste's constituents, and current disposal conditions appear to EPA to be unprotective of human health and the environment because of the existing delisting, which allows unregulated disposal of a waste which generates a hazardous leachate. EPA addresses first issues related to extent of treatment, and then the resolution of issues relating to disposal conditions.

A. The Reynolds Process Provides Substantial Treatment

RCRA section 3004 (m) requires that treatment ''substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.'' EPA believes that treatment is normally adequate to meet these requirements where treatment results in substantial reduction of toxics and/or substantial reduction of their mobility. See 62 FR 1994, January 14, 1997 and sources there cited.

The Agency's review of the Reynolds' process shows that polycyclic aromatic hydrocarbons are destroyed virtually completely [9], and cyanide is destroyed to a significant, but lesser degree.[10] These are the most significant hazardous constituents in the waste, based on concentration, potential mobility and toxicity. However, the current treatment process does not neutralize the alkalinity of the spent potliner or of the resulting residual, provides limited treatment of fluoride, and results in an increase in the concentration of leachable arsenic in the residual. [11] Despite these mixed results, EPA still concludes that on the whole, the process does provide substantial treatment. The Reynolds' process destroys PAH constituents virtually 100% through combustion. Further, cyanide is destroyed to a significant extent by this same combustion process. Total levels of cyanide appear to be reduced by the Reynolds' process by an average of over 90% from the untreated levels. High concentrations of cyanide was a major reason that K088 was listed as a hazardous waste (53 FR 35412, September 13, 1988), and destruction of cyanide is therefore a key consideration in whether a K088 process is providing substantial treatment. The leachability of fluoride, on the other hand, is not being significantly altered the Reynolds' process. The addition of lime and sand in the Reynolds' process is meant in part to help reduce the leachability of the very high amounts of fluoride found in untreated K088. It appears the Reynolds' process does provide some reduction (perhaps 25%) in the initial leachability of fluoride. However, while treatment of fluoride is an important indicator in a K088 treatment process, fluoride is not a highly toxic constituent (it is not included in Part 261, Appendix VIII). The Agency views the PAH and cyanide reductions as more important. Likewise, the Reynolds' process appears to actually increase the amounts of leachable arsenic as compared to untreated K088. This is not an encouraging result, but the explanation is apparently that given the destruction of organic components of the K088, perhaps combined with arsenic levels in sand that is used as a fluxing agent in the process, some elevation of arsenic continues to occur.

Commenters have argued, however, that Reynolds' process isn't providing substantial treatment because levels of hazardous constituents and fluoride in actual leachate exceed the K088 standards for wastewaters. [12] EPA notes first that this information does not alter the fact that the process significantly reduces total concentrations of hazardous constituents. Second, EPA would not normally consider data reflecting actual disposal as invalidating a treatment process unless the results are directly at odds with the basic premise of the land disposal restrictions program: that treatment reduces the risks posed by disposing of hazardous wastes without treatment. EPA believes that the destruction of organic constituents and cyanide reduces threats posed by land disposal of the K088 wastes. In this regard, the Agency notes that it found in the January notice that the Reynolds' process might actually pose greater risks than disposal of untreated wastes in subtitle C facilities (62 FR 1993). This finding was based in part on the fact that the delisting allowed Reynolds to dispose of the waste in units controlled less stringently than under federal standards. (62 FR 1992 and 1995). However, EPA also thought that the monofill leachate quality might be worse than that generated from subtitle C landfills managing untreated potliners. EPA now withdraws that finding. It is the Agency's current assessment that Reynolds' treatment (albeit imperfect) does reduce the overall toxicity associated with the waste. As a result, the disposal of the treated residue in a tightly controlled Subtitle C landfill is preferable to the disposal of untreated wastes. We base this finding on the determination that the total mass of the available cyanide and PAHs has been reduced.[13] EPA also concludes that the concentration observed in Reynolds' monofill leachate are in part the result of the high mass to leachate ratio that results from partial cover of the unit, resulting in a lower volume but less dilute leachate than results from other subtitle C landfills.[14]

The only alternative to Reynolds' treatment, at present, is no treatment at all.[15] The whole premise of the law is not to land dispose untreated hazardous wastes, and to require expeditiously that existing treatment processes providing substantial treatment be utilized. See citations at 61 FR 55724 (Oct. 28, 1996). EPA finds that the combustion process followed by limited stabilization appears to be adequate for the Agency to conclude that Reynolds provides substantial treatment which reduces the threats posed by land disposal of untreated spent potliners.[16]

[9] 56 FR 33004–5, July 18, 1991.

[10] See Reynolds' Special Laboratory Report (P33F–S0020.A).

[11] Data set F; letter from Pat Grover, Reynolds Metals Company to James R. Berlow, EPA; June 5, 1997.

[12] Commenters also suggested that these data show lack of compliance with the actual treatment standard. This is incorrect, since the treatment standard is measured not on actual leachate analysis, but on either a total waste concentration basis, or based on leachate generated using the TCLP. Although it is now apparent that the TCLP is not a good model for disposal conditions to which K088 would be subject, the treatment standard still requires use of the TCLP and any results so obtained that do not exceed the treatment standard are in compliance.

[13] See Agency's calculation of treatment effectiveness from Reynolds' 12/8/96 Special Laboratory Report.

[14] See Discussion on TCLP Results and Monofill Leachate Quality, Reynolds, May 29, 1997.

[15] The Agency anticipates that a number of producers will pursue the construction of alternative treatment facilities. In fact, the Agency is currently evaluating two proposals for recycling facilities that would employ vitrification processes that produce a glass product and recover fluoride compounds. One of these recycling facilities would use a process similar that currently in use at the Ormet Corporation, Hannibal, Ohio. The Agency expects to provide guidance on the regulatory status of these proposed recycling facilities shortly.

[16] Commenters suggested that threats might not be minimized by the Reynolds' process, within the meaning of RCRA section 3004 (m). EPA disagrees. As explained above, the treatment process provides treatment which reflects the best commercially available treatment. The D.C. Circuit has sustained the use of technology-based treatment standards as a reasonable means of implementing the minimize threat requirement. *Hazardous Waste Treatment Council* v. *EPA*, 886 F.2d 345 (D.C. Cir. 1989). In

Commenters also questioned whether Reynolds is even achieving current treatment standards, focusing on cyanide results in particular. If the commenters were correct that the only available treatment process consistently is unable to meet a treatment standard, then EPA would likely find that insufficient treatment capacity exists. However, data provided by Reynolds appears to show compliance with the total and amenable cyanide LDR standards (see June 17, 1997 fax from Pat Grover to John Austin, U.S. EPA). The Agency believes this data does show compliance in all but limited instances. The commenter's argument is premised on the notion that addition of fluxing and stabilizing agents to the treatment process increases waste volume three-fold, so that treatment analytical results should be multiplied by three to reflect the amount of dilution occurring. This is not correct. Although certain types of dilution—generally, dilution that does not reduce the toxicity or mobility of hazardous constituents—is an impermissible means of achieving a treatment standard, dilution which is a necessary part of a treatment process is normally permissible. See 51 FR at 40592 (Nov. 7, 1986). Thus, addition of treatment reagents which produce physical and chemical changes in the waste and which are a normal part of the process of treating a waste are typically permissible. *Id.* This is what occurs in the Reynolds' process, where fluxing agents are a usual part of the process, and function to aid the passage of the residue through the kiln and the fusion of the reagents. Thus, EPA believes that the Reynolds' process does consistently achieve the current treatment standards.

B. Reynolds Will Provide Safe Disposal Capacity

The above discussion of the Reynolds' process focused on the destruction of organic constituents and cyanide, and the limited stabilization of fluoride, leading to the conclusion that from an engineering perspective, substantial treatment is occurring which reduces the threats posed by land disposal of the hazardous wastes. However, as explained above, EPA, in determining when a prohibition on land disposal takes effect, must consider whether the treatment and disposal capacity being offered ''protects human health and the environment.'' RCRA section 3004(h)(2). EPA's assessment has been that Reynolds' disposal of the delisted waste in non-subtitle C units failed to adequately protect human health and the environment, and that the delisting allows unsafe disposal practices to continue. As long as the treated residual retains its current delisted status such practices could continue.

However, Reynolds has very recently agreed to give up the delisting and to manage the waste—that is, the residue from its treatment process—subject to full subtitle C controls, including disposal in a landfill satisfying minimum technology design criteria (i.e. double liners and leachate collection system). Based on this new development, it now appears that the residues will in fact be managed safely (indeed, must be managed safely under the federal standards), so that protective disposal capacity exists.

Today's decision is premised on the understanding that EPA will issue to Reynolds Metals Company an administrative order specifying Subtitle C management for their residues and the monitoring of Reynolds' compliance with applicable LDR treatment standards, no later than September 5, 1997. This order would serve as an interim bridge until the administrative process of withdrawing the delisting (which entails amending a final rule) is completed. The order will require Reynolds to conduct daily sampling of key constituents for at least the first 30 days of the order to document further that LDR treatment standards are being met. Reynolds will operate under a Federal administrative order until EPA action formally amends the Code of Federal Regulations to repeal the subject delisting, and then they will operate as an interim status facility pending application for and receipt of a permit. If for some reason an administrative order is not in place by September 5, 1997, EPA could extend the deadline up to April 8, 1998.

EPA also notes that the finding that the Reynolds process provides substantial treatment of the spent potliner, sufficient to justify the technology's use to satisfy the requirements of the Land Disposal Restrictions program, is not at odds with the finding that the treatment residue is still a hazardous waste. There is no inherent conflict between a finding that a waste has been treated substantially enough to satisfy LDR requirements and that the treatment residue nevertheless remains a hazardous waste. This in fact is the normal case (few residues from treating listed wastes have been delisted even after being treated to satisfy LDR requirements), and is directly contemplated in RCRA section 3004(m)(2), which states that after treatment which minimizes threats the treated waste may be disposed in a subtitle C facility (i.e. the treatment residue remains a hazardous waste). In this particular case, EPA has found that most cyanides in the initial potliner are destroyed by Reynolds' thermal treatment process, and that polycyclic aromatic hydrocarbons are essentially fully destroyed. Other constituents' mobility is reduced. Thus, substantial treatment has reduced (but not eliminated) the hazardous properties of the waste, so that the resulting treatment residue remains hazardous.

C. Agency's Conclusion Is That Protective Capacity is Presently Available

Based on all of the above discussion, the Agency's conclusion is that there is adequate treatment capacity for spent potliners at this time, because the Reynolds process meets LDR treatment standards and because ultimate disposal of the treatment residues is protective of human health and the environment. (RCRA section 3004(h)(2)). The Reynolds' process provides virtually all available treatment capacity (See 62 FR 1995). However, given that generators need some time to make arrangements with Reynolds, which in some cases involves cross-country shipment, the Agency is extending the national capacity variance by three months until October 8, 1997. EPA is selecting that length of extension because it is the Agency's judgment (based on current facts, and the pattern of previous discussions on the issue) that this is a sufficient amount of time to make necessary logistical arrangements.

IV. Disposal of Potliners During National Capacity Variance Period

Section 3004 (h) (4) states that during periods of national capacity variances (and case-by-case extensions), hazardous wastes subject to those extensions that are disposed in landfills (and surface impoundments) may only be so disposed if the landfill (or impoundment) is in compliance with the minimum technology requirements of section 3004 (o). EPA has interpreted this language as requiring the individual unit receiving the waste to be in compliance with those so-called minimum technology standards, an interpretation sustained in *Mobil Oil* v. *EPA*, 871 F. 2d 149 (D.C. Cir. 1989). In addition, EPA has indicated that this requirement only applies to wastes that are still hazardous when disposed (55 F R 22659–22660, June 1, 1990).

any event, EPA has said many times, and the legislative history confirms, that the ''minimize threat'' statutory language is susceptible to a number of interpretations, and was not intended to mean that treatment must remove every conceivable threat posed by disposal of a hazardous waste. See 61 FR at 55724 and sources there cited.

Accordingly, this means that during the extended period of the national capacity extension, generators other than Reynolds will dispose of K088 wastes in landfill units that satisfy the minimum technology requirements of section 3004(o). While Reynolds' treatment residue is not subject to these requirements at this time because it has been delisted, a process will soon be initated to reclassify it as a hazardous waste. Should the national capacity extension still be in effect when Reynolds treatment residue is reclassified as hazardous, such residues would also be required to be disposed in landfill units satisfying minimum technology requirements (assuming that landfill disposal is utilized) during the extension period.

V. Use Constituting Disposal Issues

Although not directly related to the LDR capacity determination being promulgated today, EPA is also taking this opportunity to address concerns that have been raised regarding the use of Reynold's residue in a manner constituting disposal.

In a separate action, EPA is intending to propose to withdraw the existing delisting for the residues from Reynold's treatment process. EPA remains concerned, however, that even if the residues are a listed hazardous waste, Reynolds may be able under current regulations to use those residues in uses constituting disposal if they can demonstrate that such uses are ''legitimate'' product uses under 40 CFR 266.20(b) .

EPA is concerned about possible environmental impacts such uses might have because of the concerns EPA has about the leachate generated from the treated potliner and data from road test beds Reynolds constructed using the residues. (See 62 FR 1993; January 14, 1997.)

EPA understands that Reynolds has since ceased such uses under the terms of a compliance order from the State of Arkansas.

EPA remains concerned about this possibility and intends to monitor the situation. If the Agency determines at some point in the future that such uses are taking place or are being pursued, and if we determine such uses may pose health or environmental concerns, EPA may consider amendments to Section 266.20(b) to further restrict such uses. See, e.g., 62 FR 26061; May 12, 1997. At that time, EPA may decide on whether to prohibit uses of the Reynolds residue.

VI. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ''significant.'' The Order defines a ''significant'' regulatory action as one that ''is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The Agency considers today's final rule to be nonsignificant as defined by the Executive Order and therefore not subject to the requirement that a regulatory impact analysis has to be prepared. Today's rule delays for three months the imposition of treatment standards for spent aluminum potliners that were estimated previously by EPA to cost between $11.9 million and $47.3 million (61 FR 15566 and 15591, April 8, 1996). Thus, today's rule results in net savings over this period of time and prevents any potential hardship that would otherwise result from the lack of available treatment capacity for spent aluminum potliners.

B. Paperwork Reduction Act

This rule does not contain any new information collection requirements under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Since there are no new information collection requirements being promulgated today, an Information Collection Request has not been prepared.

C. Unfunded Mandates Reform Act and Regulatory Flexibility Act

In addition, this action does not impose annual costs of $100 million or more, will not significantly or uniquely affect small governments, and is not a significant federal intergovernmental mandate. The Agency thus has no obligations under sections 202, 203, 204 and 205 of the Unfunded Mandates Reform Act. Moreover, since this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to sections 603 or 604 of the Regulatory Flexibility Act.

D. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VII. Immediate Effective Date

EPA has determined to make today's action effective immediately. The Agency believes that there is good cause to do so, within the meaning of 5 U.S.C. 553 (b) (B). The current capacity extension ends on July 8, and EPA does not believe it is physically possible for generators to begin shipping wastes to Reynolds on that date (nor is the Agency willing to speculate as to existence or non-existence of generator storage capacity). The reason the Agency is issuing this notice so close to the deadline is because the whole situation involving this capacity extension is complicated (involving decisions relating to both treatment performance and reclassification of the existing delisting), and, accordingly, the Agency continued considering new information until just before it was issued. During this time, the Agency carried on technical and other discussions with all interested persons. EPA believes that this process was reasonable, and that putting out a separate proposal during this period when the Agency's analysis of the existing information was changing based on changing facts would not have significantly benefitted either the Agency or interested persons, and could have interfered with the on-going dialogue by diverting resources from them. EPA has endeavored to obtain as much public comment on the issues as possible and to avoid issuing a decision until carrying on as extensive a dialogue as possible with concerned parties. Thus, EPA has held a number of meetings with both Reynolds and affected primary aluminum generators (noted in the record for this action), solicited and accepted written submissions from these entities (again part of the administrative record), and made each sides' submissions available to the other for response (which have been forthcoming in abundance). The

Agency has also had contacts (albeit more limited) with representatives of the hazardous waste treatment industry and the environmental community. This process extended until June 30. Actual notice and opportunity for comment of course satisfies all procedural requirements of the Administrative Procedure Act (as to parties receiving such notice). 5 U.S.C. 553 (b).

In addition, EPA believes that the January 14 notice served as a type of proposal that EPA would consider and grant a further extension if there were not significant changes in the disposal and treatment occurring at Reynolds' Arkansas facility, and at least some of the comments the Agency has received since January reflect that view.

For all of these reasons, EPA finds that this rule extending the current national capacity extension until October 8, 1997 may be made effective immediately.

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

Dated: July 7, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. Section 268.39 is amended by revising paragraph (c) to read as follows:

§ 268.39 Waste specific prohibitions—spent aluminum potliners; reactive; and carbamate wastes.

* * * * *

(c) On October 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with this waste are prohibited from land disposal.

* * * * *

[FR Doc. 97–18410 Filed 7–11–97; 8:45 am]

BILLING CODE 6560–50–P

volume weighted average NO_X emissions of imported conventional gasoline for a multi-year period (MYA_{NOx}). This calculation:

(i) Shall use the Phase II Complex Model;

(ii) Shall include all conventional gasoline in the following categories:

(A) Imported conventional gasoline that is classified as conventional gasoline, and included in the conventional gasoline compliance calculations of importers for each year; and

(B) Imported conventional gasoline that is classified as certified FRGAS, and included in the conventional gasoline compliance calculations of foreign refiners for each year;

(iii)(A) In 2000 only, shall be for the 1998 and 1999 averaging periods and also shall include all conventional gasoline classified as FRGAS and included in the conventional gasoline compliance calculations of a foreign refiner for 1997, and all conventional gasoline batches not classified as FRGAS that are imported during 1997 beginning on the date the first batch of FRGAS arrives at a United States port of entry; and

(B) Starting in 2001, shall include imported conventional gasoline during the prior three calendar year averaging periods.

(2)(i) If the volume-weighted average NO_X emissions (MYA_{NOx}), calculated in paragraph (p)(1) of this section, is greater than 1,465 mg/mile, the Administrator shall calculate an adjusted baseline for NO_X according to the following equation:

AB_{NOx} = 1,465 mg/mile − (MYA_{NOx} − 1,465 mg/mile)

where:

AB_{NOx} = Adjusted NO_X baseline, in mg/mile

MYA_{NOx} = Multi-year average NO_X emissions, in mg/mile

(ii) For the 1998 and 1999 multi-year averaging period only the value of AB_{NOx} shall not be larger than 1,480 mg/mile regardless of the calculation under paragraph (p)(2)(i) of this section.

(3)(i) Notwithstanding the provisions of § 80.91(b)(4)(iii), the baseline NO_X emissions values applicable to any United States importer who has not been assigned an individual importer baseline under § 80.91(b)(4) shall be the more stringent of the statutory baseline value for NO_X under § 80.91(c)(5), or the adjusted NO_X baseline calculated in paragraph (p)(2) of this section.

(ii) On or before June 1 of each calendar year, the Administrator shall announce the NO_X baseline that applies to importers under this paragraph (p). If the baseline is an adjusted baseline, it shall be effective for any conventional gasoline imported beginning 60 days following the Administrator's announcement. If the baseline is the statutory baseline, it shall be effective upon announcement. A baseline shall remain in effect until the effective date of a subsequent change to the baseline pursuant to this paragraph (p).

(q) *Withdrawal or suspension of a foreign refinery's baseline.* EPA may withdraw or suspend a baseline that has been assigned to a foreign refinery where:

(1) A foreign refiner fails to meet any requirement of this section;

(2) A foreign government fails to allow EPA inspections as provided in paragraph (i)(1) of this section;

(3) A foreign refiner asserts a claim of, or a right to claim, sovereign immunity in an action to enforce the requirements in 40 CFR part 80, subparts D, E and F; or

(4) A foreign refiner fails to pay a civil or criminal penalty that is not satisfied using the foreign refiner bond specified in paragraph (k) of this section.

(r) *Early use of a foreign refinery baseline.* (1) A foreign refiner may begin using an individual refinery baseline before EPA has approved the baseline, provided that:

(i) A baseline petition has been submitted as required in paragraph (b) of this section;

(ii) EPA has made a provisional finding that the baseline petition is complete;

(iii) The foreign refiner has made the commitments required in paragraph (i) of this section;

(iv) The persons who will meet the independent third party and independent attest requirements for the foreign refinery have made the commitments required in paragraphs (f)(3)(iii) and (h)(7)(iii) of this section; and

(v) The foreign refiner has met the bond requirements of paragraph (k) of this section.

(2) In any case where a foreign refiner uses an individual refinery baseline before final approval under paragraph (r)(1) of this section, and the foreign refinery baseline values that ultimately are approved by EPA are more stringent than the early baseline values used by the foreign refiner, the foreign refiner shall recalculate its compliance, *ab initio,* using the baseline values approved by EPA, and the foreign refiner shall be liable for any resulting violation of the conventional gasoline requirements.

(s) *Additional requirements for petitions, reports and certificates.* Any petition for a refinery baseline under paragraph (b) of this section, any report or other submission required by paragraphs (c), (f)(2), or (i) of this section, and any certification under paragraph (d)(3) or (g)(1)(ii) of this section shall be:

(1) Submitted in accordance with procedures specified by the Administrator, including use of any forms that may specified by the Administrator.

(2) Be signed by the president or owner of the foreign refiner company, or in the case of (g)(1)(ii) the vessel owner, or by that person's immediate designee, and shall contain the following declaration:

I hereby certify: (1) that I have actual authority to sign on behalf of and to bind [insert name of foreign refiner or vessel owner] with regard to all statements contained herein; (2) that I am aware that the information contained herein is being certified, or submitted to the United States Environmental Protection Agency, under the requirements of 40 CFR part 80, subparts D, E and F and that the information is material for determining compliance under these regulations; and (3) that I have read and understand the information being certified or submitted, and this information is true, complete and correct to the best of my knowledge and belief after I have taken reasonable and appropriate steps to verify the accuracy thereof.

I affirm that I have read and understand that the provisions of 40 CFR part 80, subparts D, E and F, including 40 CFR 80.94 (i), (j) and (k), apply to [insert name of foreign refiner or vessel owner]. Pursuant to Clean Air Act section 113(c) and Title 18, United States Code, section 1001, the penalty for furnishing false, incomplete or misleading information in this certification or submission is a fine of up to $10,000, and/or imprisonment for up to five years.

[FR Doc. 97–22803 Filed 8–27–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268 and 271

[FRL–5884–2]

RIN 2050–AD38

Second Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards for Listed Hazardous Wastes From Carbamate Production

AGENCY: Environmental Protection Agency (EPA, the Agency).

ACTION: Immediate final rule.

SUMMARY: This second emergency revision extends the time that the alternative carbamate treatment

standards are in place by one additional year. The Agency is taking this action because analytical problems associated with the measurement of constituent levels in carbamate waste residues have not yet been resolved.

EFFECTIVE DATES: This action becomes effective on August 21, 1997.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–P32F–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For technical information on the carbamate treatment standards, contact Shaun McGarvey, phone 703–308–8603. For information on analytic problems associated with carbamate wastes, contact John Austin on 703–308–0436. For information on State Authorization, contact Wayne Roepe on 703–308–8630. For specific information about this rule, contact Rhonda Minnick on 703–308–8771.

SUPPLEMENTARY INFORMATION:

Availability of rule on Internet

This **Federal Register** notice is available on the Internet System through the EPA Public Web Page at: http://www.epa.gov/EPA–WASTE/. For the text of the notice, choose: Year/Month/Day.

I. Background

The Phase III final rule established treatment standards for hazardous wastes associated with carbamate pesticide production (61 FR 15583; see appendix for a list of regulated constituents). The treatment standards were expressed as concentration levels that had to be monitored in the treatment residue. All constituents were placed on the Universal Treatment Standard (UTS) list. These regulations were issued on April 8, 1996 (61 FR 15663), and corrected June 28, 1996 (61 FR 33683). The prohibition on land disposal of carbamate wastes was effective July 8, 1996 and the prohibition on radioactive waste mixed with newly listed or identified wastes, including soil and debris, was effective April 8, 1998.

On November 1, 1996, the United States Court of Appeals for the District of Columbia Circuit, in *Dithiocarbamate Task Force* v. *EPA* (98 F.3d 1394), vacated certain of the listings of carbamate wastes. Accordingly, EPA removed from the Code of Federal Regulations those listings vacated by the court and all references to those listings. EPA notes that substantial portions of the decisions made in the carbamate listing rule remain in effect and are not changed by the court's ruling. See 62 FR 32973, June 17, 1997.

The court vacated the listings of 24 U wastes, one K-waste (K160), and three of the K-wastes (K156, K157 and K158) only to the extent they apply to the chemical, 3-iodo-2-propynyl n-butylcarbamate (IPBC). Twenty-three of the vacated U wastes consisted of all the dithiocarbamates and thiocarbamates. The other vacated U waste was IPBC, a carbamate.

This notice applies only to the carbamate wastes that remain listed as hazardous wastes. Carbamates that were regulated as UHCs were unaffected by the courts decision, because the decision didn't deal with adding carbamates as underlying hazardous constituents.

After promulgation of the Phase III rule on April 8, 1996, but shortly before the treatment standards took effect on July 8, 1996, several companies in the waste management industry contacted EPA, reporting that laboratory standards were not available for some of the carbamate waste constituents. The Agency confirmed this assertion, and realized that the waste management industry was unintentionally left in a quandary: they were required to certify compliance with the carbamate waste treatment standards, but commercial laboratories were only able to perform the necessary analyses for some of the newly regulated constituents. Thus, it was impossible to document whether the treatment standards were or were not achieved for those constituents which could not be analyzed.

The problem was complicated by the LDR rules that pertain to regulation of underlying hazardous constituents (UHCs) in characteristic (or formerly characteristic) hazardous wastes. Because new constituents were added to the UTS list, they thus became potential UHCs. Whenever a generator sends a characteristic (or formerly-characteristic) waste to a treatment facility, they must identify for treatment not only the hazardous characteristic, but also all UHCs reasonably expected to be present in the waste at the point of generation. (See 40 CFR 268.2(i).) Because of the lack of laboratory standards for all carbamate constituents, generators could not in all cases identify the UHCs reasonably expected to be present in their wastes, and treatment facilities and EPA could not monitor compliance with the standards for the carbamate UHCs. Generators also reported that commercial laboratories were unable to provide the recommended methods.

II. The Revised Carbamate Treatment Standards

In an emergency final rule promulgated on August 26, 1996 (61 FR 43924), EPA established temporary alternative treatment standards for carbamate wastes for a one-year period. EPA believed that one year was sufficient time for laboratory standards to be developed and for laboratories to take appropriate steps to do the necessary analyses for these wastes.

The Phase III rule required treatment of carbamate wastes to UTS levels. The temporary alternative standards promulgated in the August 26, 1996 rule provided waste handlers a choice of meeting the Phase III treatment levels, or of using a specified treatment technology, the specified standard being the technology upon whose performance the numerical treatment standard was based. (See 61 FR 43925, August 26, 1996.) Combustion was the specified technology for nonwastewaters; combustion, biodegradation, chemical oxidation, and carbon adsorption are the specified technologies for wastewaters. If the wastes were treated by a specified technology, there was no requirement to measure compliance with treatment levels, thus avoiding the analytical problems.

III. Today's Extension of the Alternative Treatment Standard Provision

EPA is extending the alternative treatment standards for carbamate wastes for one additional year. EPA and the regulated community initially expected that laboratory standards would be developed during the past year, but that appears not to be the case for all carbamate constituents. Furthermore, there appears to be confusion as to which analytical methods can be used to measure carbamate constituents. (See memorandum from Kevin Igli, Waste Management, Inc., to James Berlow, EPA, dated July 16, 1997, in the docket for this rule.)

The waste treatment industry has begun a testing project that will determine whether existing analytical methods can be extended to apply to all carbamate constituents. (See August 8,

1997 letter from Kevin Igli, Waste Management, Inc., to Michael Petruska, EPA.) The Agency believes that much can be learned from this study. EPA estimates it will take four to six months to conduct this study, and then additional time to review the results. If the study verifies that analytical problems remain, EPA may issue an appropriate notice seeking comment, and then a final rule modifying the standard. This would all take approximately 1 year. If EPA finds there are no serious analytical difficulties, however, the Agency may consider reinstating the numeric standard sooner than 1 year.

Since the analytical problems which necessitated the 1996 emergency rule remain, however, EPA is allowing the alternative treatment standards to remain in place until the study is completed and the results factored into a final decision on whether to retain the alternative treatment standards permanently or to revert to the exclusive numerical standards promulgated in the Phase III rule. (The Agency's general preference is to establish numerical treatment standards for hazardous wastes whenever possible because they provide maximum flexibility in selecting treatment technologies, while ensuring that the technologies are optimally operated to achieve full waste treatment.)

Under the alternative treatment standards, combustion is the specified technology for nonwastewaters; combustion, biodegradation, chemical oxidation, and carbon adsorption are the specified technologies for wastewaters. (Descriptions of these treatment technologies can be found in 40 CFR 268.42, Table 1.) If the wastes are treated by a specified technology, there is no requirement to measure compliance with treatment levels.

Because the performance of these Best Demonstrated Available Technologies (BDATs) were the basis of the originally promulgated treatment levels, EPA believes that temporarily allowing the use of these BDATs for an additional year—without a requirement to monitor the treatment residues—fully satisfies the core requirement of the LDR program: Hazardous wastes must be treated to minimize threats to human health and the environment before they are land disposed.

The Agency is also suspending for an additional year inclusion of carbamate waste constituents on the UTS list at 40 CFR 268.48. Not including these constituents on the UTS list eliminates the need to identify and treat them, and monitor compliance with their UTS levels, when they are present as UHCs in characteristic hazardous wastes. The Agency believes that suspending the carbamate constituents from the UTS list will not have adverse environmental consequences because it will be in effect for only one additional year. Furthermore, EPA found in the Phase III rulemaking that these constituents are unlikely to occur in wastes generated outside the carbamate production industry (61 FR 15584, April 8, 1996), so today's rule may not cause an adverse environmental impact because carbamate constituents simply are not present in most characteristic hazardous wastes.

IV. Good Cause for Foregoing Notice and Comment Requirements

This final rule is being issued without notice and opportunity for public comment. Under the Administrative Procedure Act (APA), 5 U.S.C. 553(b)(B), an agency may forgo notice and comment in promulgating a rule when, according to the APA, the agency for good cause finds (and incorporates the finding and a brief statement of the reasons for that finding into the rules issues) that notice and public comments procedures are impracticable, unnecessary, or contrary to the public interest. For the reasons set forth below, EPA believes it has good cause to find that notice and comment would be unnecessary and contrary to the public interest, and therefore is not required by the APA.

First, although both industry and EPA have endeavored to resolve the problem during the past year, analytic laboratory standards will continue to be unavailable for a number of the carbamate waste constituents covered by the Phase III rule. Members of the regulated community thus cannot fully document compliance with the requirements of the treatment standard through no fault of their own. For the same reason, EPA cannot ascertain compliance for these constituents.

In addition, this unavailability of analytic standards is likely to create a serious disruption in the production of at least some carbamate pesticides. Although the treatment of the restricted carbamate wastes through biodegradation, carbon adsorption, chemical oxidation (for wastewaters), and combustion is both possible and highly effective, certification that the treatment actually meets the treatment standard levels may not be possible in many instances. Without the certification, disposal of the residuals left after treatment cannot legally occur. The Agency believes this situation will quickly impede production of certain pesticides, since legal disposal of some carbamate wastes will no longer be available. *See Steel Manufacturers Ass'n* v. *EPA*, 27 F.3d 642, 646–47 (D.C. Cir. 1994) (absence of a treatment standard providing a legal means of disposing of wastes from a process is equivalent to shutting down that process). With regard to the suspension of certain carbamates as underlying hazardous constituents in characteristic (and formerly-characteristic) prohibited wastes, the Agency believes that the same practical difficulties described for listed carbamate wastes would be created.

Furthermore, the Agency believes it is necessary for industry to complete a study project that will provide answers to the questions raised about the availability of analytical standards and which analytical methods are appropriate for carbamate wastes. This study will require a number of months to be completed, and then the Agency must make a decision about whether or not to retain the alternative treatment standards.

This extension of the emergency rule preserves the core of the promulgated Phase III rule by ensuring that the restricted carbamate wastes are treated by a BDAT before they are land disposed. At the same time, EPA is eliminating the situation which could halt production of carbamate pesticides, and allowing time for a study project to be completed. For these reasons, EPA believes there is good cause to issue the rule immediately without prior notice and opportunity for comment.

V. Rationale for Immediate Effective Date

The Agency believes that the regulated community is in the untenable position of having to comply with treatment standards but lacks analytical methods to measure compliance. To avoid this result, therefore, this extension needs to take effect essentially immediately. In addition, today's rule does not create additional regulatory requirements; rather, it provides greater flexibility for compliance with treatment standards. For these reasons, EPA finds that good cause exists under section 3010(b)(3) of RCRA, 42 U.S.C. 6903(b)(3), to provide for an immediate effective date. See generally 61 FR at 15662. For the same reasons, EPA finds that there is good cause under 5 U.S.C. 553(b)(3) to waive the requirement that regulations be published at least 30 days before they become effective.

VI. Analysis Under Executive Order 12866, the Unfunded Mandates Reform Act of 1995, the Regulatory Flexibility Act, and the Paperwork Reduction Act

This final rule does not create new regulatory requirements; rather, it provides a temporary alternative means to comply with the treatment standards already promulgated. Therefore, this final rule is not a ''significant'' regulatory action within the meaning of Executive Order 12866.

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector, and does not impose any Federal mandate on State, local, or tribal governments or the private sector within the meaning of the Unfunded Mandates Reform Act of 1995. This final rule does not create new regulatory requirements; rather, it provides a temporary alternative means to comply with the treatment standards already promulgated. EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA. For the same reasons, EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments.

EPA has determined that this rule will not have a significant economic impact on a substantial number of small entities. EPA recognizes that small entities may own and/or operate carbamate pesticide manufacturing operations or TSDFs that will become subject to the requirements of the land disposal restrictions program. However, since such small entities are already subject to the requirements in 40 CFR part 268, this rule does not impose any additional burdens on these small entities, because this rule does not create new regulatory requirements. Rather, it provides a temporary alternative means to comply with the treatment standards already promulgated.

Therefore, EPA provides the following certification under the Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act. Pursuant to the provision at 5 U.S.C. 605(b), I hereby certify that this final rule will not have a significant economic impact on a substantial number of small entities. It does not impose any new burdens on small entities. This rule, therefore, does not require a regulatory flexibility analysis.

Today's rule does not contain any new information collection requirements subject to OMB review under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 et seq. Because there are no new information collection requirements in today's rule, an Information Collection Request has not been prepared.

VII. Submission to Congress and the General Accounting Office

Under section 801(a)(1)(A) of the Administrative Procedure Act (APA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a ''major rule'' as defined by section 804(2) of the APA as amended.

VIII. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Today's rule is being promulgated pursuant to section 3004(m), of RCRA (42 U.S.C. 6924(m)). Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble.

B. Effect on State Authorization

As noted above, EPA will implement today's rule in authorized States until they modify their programs to adopt these rules and the modification is approved by EPA. Because today's rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive interim or final

authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. All HSWA interim authorizations will expire January 1, 2003. (See section 271.24 and 57 FR 60132, December 18, 1992.)

In general, EPA recommends that States pay close attention to the sunset date for today's rule. If States are adopting the Phase III rule before the sunset date of today's rule, and applying for authorization, EPA strongly encourages these States to adopt today's rule when they adopt the April 8, 1996, Phase III rule. States should note that after the sunset date, the provisions of this rule may be considered less stringent if the Agency decides to disallow use of the alternative treatment standards. If so, States would be barred under section 3009 of RCRA from adopting this rule after August 26, 1998, and would not be able to receive authorization for it. States that are planning to adopt and become authorized for today's rule and the Phase III rule should factor the sunset date into their rulemaking activities.

Appendix to the Preamble—List of Regulated Constituents

K156—Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate)
K157—Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)
K158—Bag house dust, and filter/separation solids from the production of carbamates and carbamoyl oximes. (This listing does not apply to wastes generated from the manufacture of 3-iodo-2-propynyl n-butylcarbamate.)
K159—Organics from the treatment of thiocarbamate wastes.
K161—Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust, and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)
P203 Aldicarb sulfone
P127 Carbofuran
P189 Carbosulfan
P202 m-Cumenyl methylcarbamate
P191 Dimetilan
P198 Formetanate hydrochloride
P197 Formparanate
P192 Isolan
P196 Manganese dimethyldithiocarbamate
P199 Methiocarb
P066 Methomyl
P190 Metolcarb
P128 Mexacarbate
P194 Oxamyl
P204 Physostigmine
P188 Physostigmine salicylate
P201 Promecarb
P185 Tirpate
P205 Ziram
U394 A2213
U280 Barban
U278 Bendiocarb
U364 Bendiocarb phenol
U271 Benomyl
U279 Carbaryl
U372 Carbendazim
U367 Carbofuran phenol
U395 Diethylene glycol, dicarbamate
U373 Propham
U411 Propoxur
U387 Prosulfocarb
U410 Thiodicarb
U409 Thiophanate-methyl
U389 Triallate
U404 Triethylamine

Additional chemicals from carbamate production regulated in 40 CFR 268.48
Butylate
EPTC
Dithiocarbamates, total
Molinate
Pebulate
o-Phenylenediamine
Vernolate

List of Subjects

40 CFR part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR part 271

Environmental protection, Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: August 21, 1997.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

SUBPART D—TREATMENT STANDARDS

2. Section 268.40 is amended by revising the dates in paragraph (g) to read ''Between August 26, 1997 and August 26, 1998''.

3. Section 268.48(a) is amended by revising the dates in footnote 6 to the table—Universal Treatment Standards to read ''Between August 26, 1997 and August 26, 1998''.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

4. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

SUBPART A—REQUIREMENTS FOR FINAL AUTHORIZATION

5. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication in the **Federal Register** to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of Regulation	Federal Register reference	Effective date
*	* * *	* *	*
August 28, 1997	Second Emergency Revision of the Land Disposal Restrictions (LDR) Phase III Treatment Standards for Listed Hazardous Wastes from Carbamate Production.	62 FR [Insert page numbers].	August 26, 1997 until August 26, 1998.
*	* * *	* *	*

* * * * *

[FR Doc. 97–22949 Filed 8–27–97; 8:45 am]
BILLING CODE 6560–50–P

FEDERAL EMERGENCY MANAGEMENT AGENCY

44 CFR Part 65

[Docket No. FEMA–7224]

Changes in Flood Elevation Determinations

AGENCY: Federal Emergency Management Agency (FEMA).

ACTION: Interim rule.

SUMMARY: This interim rule lists communities where modification of the base (1% annual chance) flood elevations is appropriate because of new scientific or technical data. New flood insurance premium rates will be calculated from the modified base flood elevations for new buildings and their contents.

DATES: These modified base flood elevations are currently in effect on the dates listed in the table and revise the Flood Insurance Rate Map(s) in effect prior to this determination for each listed community.

From the date of the second publication of these changes in a newspaper of local circulation, any person has ninety (90) days in which to request through the community that the Associate Director for Mitigation reconsider the changes. The modified elevations may be changed during the 90-day period.

ADDRESSES: The modified base flood elevations for each community are available for inspection at the office of the Chief Executive Officer of each community. The respective addresses are listed in the following table.

FOR FURTHER INFORMATION CONTACT: Frederick H. Sharrocks, Jr., Chief, Hazard Identification Branch, Mitigation Directorate, 500 C Street SW., Washington, DC 20472, (202) 646–2796.

SUPPLEMENTARY INFORMATION: The modified base flood elevations are not listed for each community in this interim rule. However, the address of the Chief Executive Officer of the community where the modified base flood elevation determinations are available for inspection is provided.

Any request for reconsideration must be based upon knowledge of changed conditions, or upon new scientific or technical data.

The modifications are made pursuant to Section 201 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4105, and are in accordance with the National Flood Insurance Act of 1968, 42 U.S.C. 4001 *et seq.*, and with 44 CFR Part 65.

For rating purposes, the currently effective community number is shown and must be used for all new policies and renewals.

The modified base flood elevations are the basis for the floodplain management measures that the community is required to either adopt or to show evidence of being already in effect in order to qualify or to remain qualified for participation in the National Flood Insurance Program (NFIP).

These modified elevations, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own, or pursuant to policies established by other Federal, State, or regional entities.

The changes in base flood elevations are in accordance with 44 CFR 65.4.

National Environmental Policy Act

This rule is categorically excluded from the requirements of 44 CFR Part 10, Environmental Consideration. No environmental impact assessment has been prepared.

Regulatory Flexibility Act

The Associate Director for Mitigation certifies that this rule is exempt from the requirements of the Regulatory Flexibility Act because modified base flood elevations are required by the Flood Disaster Protection Act of 1973, 42 U.S.C. 4105, and are required to maintain community eligibility in the NFIP. No regulatory flexibility analysis has been prepared.

Regulatory Classification

This interim rule is not a significant regulatory action under the criteria of Section 3(f) of Executive Order 12866 of September 30, 1993, Regulatory Planning and Review, 58 FR 51735.

Executive Order 12612, Federalism

This rule involves no policies that have federalism implications under Executive Order 12612, Federalism, dated October 26, 1987.

Executive Order 12778, Civil Justice Reform

This rule meets the applicable standards of Section 2(b)(2) of Executive Order 12778.

List of Subjects in 44 CFR Part 65

Flood insurance, Floodplains, Reporting and recordkeeping requirements.

Accordingly, 44 CFR part 65 is amended to read as follows:

PART 65—[AMENDED]

1. The authority citation for part 65 continues to read as follows:

Authority: 42 U.S.C. 4001 et seq.; Reorganization Plan No. 3 of 1978, 3 CFR, 1978 Comp., p. 329; E.O. 12127, 44 FR 19367, 3 CFR, 1979 Comp., p. 376.

§ 65.4 [Amended]

2. The tables published under the authority of § 65.4 are amended as follows:

State and county	Location	Dates and name of newspaper where notice was published	Chief executive officer of community	Effective date of modification	Community No.
Arizona: Mohave ..	City of Bullhead City.	June 17, 1997, June 24, 1997, *Mohave Valley Daily News*.	The Honorable Norm Hicks, Mayor, City of Bullhead City, 1255 Marina Boulevard, Bullhead City, Arizona 86442.	June 5, 1997	040125
California:					
Riverside	City of Banning	June 20, 1997, June 27, 1997, *The Record-Gazette*.	The Honorable Gary Reynolds, Mayor, City of Banning, P.O. Box 998, Banning, California 92220.	June 5, 1997	060246
Marin	City of Novato	July 1, 1997, July 8, 1997, *Marin Independent Journal*.	The Honorable Pat Eklund, Mayor, City of Novato, 900 Sherman Avenue, Novato, California 94945.	June 13, 1997	060178

Friday
December 5, 1997

Part V

Environmental Protection Agency

40 CFR Part 268

Clarification of Standards for Hazardous Waste Land Disposal Restriction Treatment Variances; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[No. F–97–TV2F–FFFFF; FRL–5932–5]

Clarification of Standards for Hazardous Waste Land Disposal Restriction Treatment Variances

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: EPA is today finalizing clarifying amendments to the rule authorizing treatment variances from the national Land Disposal Restrictions (LDR) treatment standards. The clarifying changes adopt EPA's longstanding interpretation that a treatment variance may be granted when treatment of any given waste to the level or by the method specified in the regulations is not appropriate, whether or not it is technically possible to treat the waste to that level or by that method. In response to comment, the Agency is indicating in the rule the circumstances when application of the national treatment standard could be found to be ''inappropriate'', specifically where the national treatment standard is unsuitable from a technical standpoint or where the national treatment standard could lead to environmentally counterproductive results by discouraging needed remediation.

In addition, EPA proposed to reissue the treatment variance granted to Citgo Petroleum under the clarified standard. The Agency is not taking further action on this part of the proposal because, due to changes in Citgo's remediation plans for its Lake Charles Louisiana facility, this particular variance has become moot. The Agency is consequently withdrawing the Citgo variance.

EFFECTIVE DATE: These final regulations are effective December 5, 1997.

ADDRESSES: The official record for this rulemaking is located at the RCRA Information Center at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, Virginia. The RCRA Information Center is open from 9:00 a.m. to 4:00 EST p.m., Monday through Friday, except Federal holidays. The Docket Identification Number for today's action is F–97–TV2F–FFFFF. Appointments to review docket materials are recommended. Appointments may be made by calling (703) 603–9230. Individuals reviewing docket materials may copy a maximum of 100 pages from any one docket at no cost. Additional copies may be made at a cost of $0.15 per page. In addition, the docket index and some supporting materials are available electronically. See the **SUPPLEMENTARY INFORMATION** section for information on accessing electronic information.

FOR FURTHER INFORMATION CONTACT: For general information on RCRA, land disposal treatment variances, and this rule contact the RCRA Hotline, between 9:00 a.m. and 6:00 p.m. EST, Monday through Friday, except Federal holidays. The RCRA Hotline can be reached toll free on (800) 424–9346 or, from the Washington D.C. area, on (703) 412–9810. Hearing impaired can reach the RCRA Hotline on TDD (800) 553–7672 or, in the Washington D.C. area, on TDD (703) 412–3323. For detailed information on specific aspects of this rulemaking, contact Elizabeth McManus on (703) 308–8657.

SUPPLEMENTARY INFORMATION:

Accessing Today's Rule and Supporting Information Electronically

Today's final rule, its docket index and the following supporting materials are available electronically and may be accessed through the Internet: To access these documents electronically: ''Use of Site-Specific Land Disposal Restriction Treatability Variances Under 40 CFR 268.44(h) During Cleanups'' U.S. EPA guidance memorandum from Michael Shapiro, Director EPA Office of Solid Waste and Steve Luftig, Director EPA Office of Emergency and Remedial Response, Jan. 8, 1997.

WWW: Http://www.epa.gov/epaoswer/hazwaste/ldr/ldr-rule.htm
FTP: ftp.epa.gov
Login: anonymous
Password: your Internet address

Files are located in /pub/epaoswer/hazwaste/ldr/ldr-rule.htm.

Table of Contents

I. Background

The essential requirement of the Land Disposal Restrictions (LDR) statutory provisions is that hazardous wastes must not be land disposed until hazardous constituent concentrations in the wastes are at levels at which threats to human health and the environment are minimized, and land disposal is otherwise protective of human health and the environment. RCRA sections 3004 (d), (e), (g) and (m); 56 FR at 41168, August 19, 1991; 62 FR at 26062, May 12, 1997. These requirements normally are satisfied by prohibiting disposal of hazardous wastes until the wastes' hazardous constituent concentrations reflect the performance achievable by the Best Demonstrated Available Treatment technology (BDAT). 62 FR at 26062, May 12, 1997.

EPA recognized from the inception of the LDR program, however, that there would be circumstances when these technology-based treatment standards might not be either achievable or appropriate. Accordingly, EPA adopted a treatment variance provision (codified in 40 CFR 268.44; 51 FR at 40605–40606, Nov. 7, 1986) providing that:

> Where the treatment standard is expressed as a concentration in a waste or waste extract and a waste cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or treatment facility may petition the Administrator for a variance from the treatment standard. The petitioner must demonstrate that because the physical or chemical properties of the waste differs significantly from the wastes analyzed in developing the treatment standard, the waste cannot be treated to [the] specified levels or by the specified methods.

A treatment variance takes the form of an alternative LDR treatment standard. Nationally applicable variances and site-specific variances that are approved using rulemaking procedures are codified in the Table to § 268.44, 40 CFR 268. 44(o). Site-specific variances that are approved using non-rulemaking procedures are not codified.

As set out in more detail in the May 12 notice, EPA has interpreted the first sentence of the treatment variance provision as creating two independent tests under which treatment variance applications can be considered: first, where the waste in question cannot be treated to levels or by the methods established in the rules; and second, where such treatment may be possible but is nevertheless ''not appropriate''. 62 FR at 26059, May 12, 1997. EPA has further viewed the second sentence of the treatment variance provision—which refers to a demonstration that the waste differs chemically or physically from those the Agency analyzed in developing the standard—as applying only to the technical infeasibility part of the standard. 62 FR at 26059, May 12,

1997. However, EPA now recognizes that the existing rule, as drafted, might be read to require a demonstration that a waste is physically or chemically different along with a showing that it cannot be treated to a specified level or by a particular method whenever a treatment variance is sought, including situations where the otherwise applicable treatment standard is technically possible but, nonetheless, inappropriate. This was not EPA's intent, and EPA initiated this rulemaking to remove any drafting ambiguity in the rule.

II. Clarified Standard for Granting Treatment Variances

EPA is finalizing the proposed amendment to the rule, with two changes. First, EPA is clarifying the situations under which treatment variances may be approved because the otherwise applicable LDR treatment standard is ''inappropriate.'' Second, the Agency is adding language that explicitly requires alternative LDR treatment standards approved through the treatment variance process to satisfy the requirement that treatment standards result in substantial treatment of hazardous constituents in the waste so that threats posed by the waste's land disposal are minimized, and also indicates that special considerations may arise in satisfying this standard if the waste is to be used in a manner constituting disposal.[1]

A. Clarification of ''Inappropriate'' Standard

The Agency proposed amended language simply stating that a treatment variance could be granted if it is ''inappropriate'' to require treatment to the level or by the method set out in the rules. 62 FR at 26081, May 12, 1997. In the preamble to the proposal, the Agency provided examples as to the situations when application of the otherwise applicable standard could be inappropriate. 62 FR at 26059–26060, May 12, 1997. In response to comment maintaining that the rule language was impermissibly open-ended, EPA has decided to include language codifying more particularly when a standard could be ''inappropriate''. These circumstances are drawn from EPA's practice in applying the existing rule and are consistent with the examples discussed in the preambles to the proposal and the HWIR-Media proposal. 61 FR at 18810, April 29, 1996.

The first circumstance is when imposition of BDAT treatment, while technically possible, remains unsuitable or impractical from a technical standpoint. The chief example is when a treatment standard would result in combustion of large amounts of mildly contaminated soil or wastewater. 55 FR at 8760 and 8761, March 8, 1990; 61 FR at 18806–18808, April 29, 1996 and other sources cited therein. The same reasoning could apply when media is contaminated with metal contaminants and also contains low levels of organic contaminants. In such a case, it may be inappropriate to require combustion treatment of the organic contaminants both because it may be inappropriate to combust media generally and because it may be inappropriate to combust wastes where metals are the chief hazardous constituent.[2] Another potential example of where treatment for organic contaminants may be technically inappropriate is when a waste contains low concentrations of non-volatile organic contaminants (for example, concentrations slightly exceeding a Universal Treatment Standard) and the waste, for legitimate reasons, has been stabilized. If the mobility of the non-volatile organic contaminants has been reduced, it might be inappropriate to require further treatment of the non-volatile organic contaminants. Cf. 61 FR at 55724, Oct. 28, 1996 where EPA made a similar finding. Still another example of a situation where the otherwise applicable LDR treatment standard is technically inappropriate could be a case where BDAT treatment could expose site workers to acute risks of fire or explosion and an alternative technology would not. 62 FR at 26060, May 12, 1997. In all these types of circumstances, notwithstanding that it is technically possible to achieve the standard by using the best demonstrated available technology, it could be inappropriate to do so.

The second set of circumstances where treatment to the limit of best demonstrated available technology might be inappropriate involves cases where imposition of the otherwise applicable treatment standard could result in a net environmental detriment by discouraging aggressive remediation. The example EPA and authorized states have encountered most often to date is where federal rules allow the option of leaving wastes in place,[3] and a facility then has the choice of pursuing the legal option of leaving the wastes in place or opting to excavate thereby triggering treatment to standards based on the performance of best demonstrated available technology, which can be very expensive. 62 FR at 26059, May 12, 1997, and other sources there cited.[4] In these circumstances, a treatment variance can provide an intermediate option of more aggressive remediation, which may include substantial treatment of the removed waste before disposal of that treatment residue—a net environmental benefit over leaving untreated waste in place. 61 FR at 55720–22, May 12, 1997. In EPA's experience, this situation often occurs when BDAT treatment would require that wastes be treated to achieve constituent concentrations that fall below protective site-specific cleanup levels, thus increasing remediation costs for treatment of excavated wastes. In these instances, EPA has indicated that consideration of a treatment variance is typically warranted (because imposition of the otherwise applicable treatment standard would discourage aggressive remediation and is, therefore, inappropriate) and that, if a variance is approved, protective, site-specific cleanup levels may be used as

[1] EPA is also restoring language to 40 CFR 268.44(a) and (h) that was inadvertently deleted when EPA proposed this clarification and redrafting the introductions to both provisions. These changes are made to restore the inadvertently deleted text and to make the difference between national and site-specific variances more clear, as follows. The 40 CFR 268.44(a) national variance is waste-specific—it could apply to the same type of waste at numerous sites. National variances are obtained by petitioning the Administrator and, as set out in 40 CFR 268.44(b), petitions are processed using the procedures set out in 40 CFR 260.20. The 40 CFR 268.44(h) variance is site-specific—it applies only to a certain waste generated at a particular site. Site-specific variances are obtained by petitioning the Administrator, or the Administrator's delegated representative, or an authorized state. Petitions for site-specific variances are processed on a site-by-site basis and are not required to be processed using the procedures set out in 40 CFR 260.20. Further explanation on this issue is included in the Response to Comments Document for today's action in the response to comments submitted by the Department of Energy. EPA regards the restoration of inadvertently deleted language and the associated clarifications as a technical correction and may, thus, make the changes immediately in this final rule.

[2] Although it should also be noted that it is often routine and obviously appropriate to combust organic-contaminated hazardous wastes and to stabilize the combustion residues to reduce metal mobility; see, e.g. treatment standards for F024 wastes in 40 CFR 268.40.

[3] Examples are where wastes can remain within an ''area of contamination'', where remedy selection requirements allow a balancing of treatment and containment strategies and where RCRA regulations allow the option of closing a regulated unit with wastes left in place.

[4] Another recent example of such a treatment variance was granted to Dow Chemical Co. by EPA Region V. In this case, the company could legally leave wastes within an area of contamination but requested instead that the wastes be exhumed for more secure disposal in a subtitle C landfill. Viewing this as a net environmental benefit, and further finding that no other treatment but combustion was available to reduce the relatively low levels of hazardous constituents (chlorinated dibenzo-dioxins and furans), the Region found the existing treatment requirement inappropriate and granted the variance. Treatment Variance for Dow Chemical Co., June 10, 1997, Response to Comment Document pp. 15–17.

alternative LDR treatment standards. See recent EPA guidance on LDR treatment variances: Jan 8, 1997 memorandum, ''Use of Site-Specific Land Disposal Restriction Treatability Variances Under 40 CFR 268.44(h) During Cleanups'' from Michael Shapiro, Director EPA Office of Solid Waste and Steve Luftig, Director EPA Office of Emergency and Remedial Response and information on compliance with statutory provisions for LDR treatment, below. In addition, see ''Hazardous Waste: Remediation Waste Requirements Can Increase the Time and Cost of Cleanups'' U.S. General Accounting Office, GAO/RCED–98–4, October 1997.

EPA is accordingly codifying qualifying language stating that treatment variances can be granted where the underlying standard is not appropriate either because it is technically inappropriate or because requiring LDR treatment is environmentally inappropriate in that it could discourage aggressive remediation.

Finally, it must be remembered that this amended rule does not command issuance of treatment variances any more than the existing rule does. Like the existing rules, the amended rules set out circumstances when treatment variances may be considered. The actual determination of whether an otherwise applicable LDR treatment standard is ''unachieveable'' or technically or environmentally ''inappropriate'' is a fact-specific determination depending largely on site-and waste-specific circumstances.

B. Compliance With Statutory Provisions for LDR Treatment

As stated in the proposal all treatment variances must be consistent with the root requirement of RCRA section 3004 (m): that treatment be sufficient to minimize threats to human health and the environment posed by land disposal of the waste. See 62 FR at 26060/1, May 12, 1997 (''alternative treatment standards [established by a treatment variance] must comply with the statutory standard of RCRA section 3004(m) by minimizing threats to human health and the environment''). In order to ensure that there is no ambiguity over application of this requirement in the context of alternative LDR treatment standards developed through the treatment variance process, EPA is adding regulatory language that explicitly requires the decision-maker to determine that a revised treatment standard is sufficient to minimize threats posed by land disposal. Cf. 61 FR at 55721, October 23, 1996 (finding that alternate standard in treatment variance does minimize threats posed by land disposal). In making this determination, however, EPA (or authorized State) may consider risks posed by land disposal not only of the treated residue, but also the risks posed by the continuation of any existing land disposal of the untreated waste, that is, the risks posed by leaving previously land disposed waste in place. Thus, for example, in a remediation setting, it is appropriate (and likely necessary) to consider risks posed by leaving previously land disposed waste in place as well as risks posed by land disposal of the waste after it is removed and treated. Cf. 61 FR at 55721, October 28, 1996 (fact-specific determination that threats posed by land disposal are adequately minimized when treatment variance will lead to clean closure of large surface impoundment, substantial treatment of removed waste, and disposal of treatment residue in a subtitle C landfill) and 61 FR at 18808, April 29, 1996, and other sources cited therein (determination that the policy considerations which argue for BDAT as the basis for technology-based standards for as-generated wastes do not always support a BDAT approach in the remediation context).

In addition, when making a determination as to whether the statutory provisions for LDR treatment have been satisfied, EPA may, of course, condition any particular variance to apply only in certain circumstances if the facts warrant. There is, at least, one potentially recurring circumstance when such conditioning may be warranted for treatment variances. Under current regulation, hazardous waste-derived products can be used in a manner constituting disposal provided the waste meets the LDR treatment standards. 40 CFR 266.23. The exemption was premised on findings that hazardous wastes would meet requirements reflecting rigorous treatment which typically destroys, removes, or immobilizes hazardous constituents to the limit of available technology. 53 FR at 31198, August 17, 1988. In order to ascertain whether this exemption is still justifiable for wastes which receive treatment variances on the ground that the treatment standard is inappropriate, EPA is noting that as part of a determination of whether threats are minimized under the circumstances, consideration should be given to whether this exemption should continue to apply.[5] This would entail a fact-specific determination, and notice as to how the determination might be made would have to accompany each such treatment variance. For example, in situations where the decision-maker determines that use of a product derived from hazardous waste in a manner constituting disposal would likely not be adequately protective even if that hazardous waste derived product complied with an alternative land disposal treatment standard established through a treatment variance, the treatment variance approval could include a condition that restricted use of the treated hazardous waste in a manner constituting disposal.

EPA also notes that the Subpart CC rules, relating to control of air emissions from tanks, containers, and surface impoundments managing hazardous waste, state that if a waste has met the LDR treatment standard set out in 40 CFR 268.40 (the generally-applicable treatment standards, normally the Universal Treatment Standards), the waste is not subject to further Subpart CC controls.[6] See 40 CFR 264.1082 (c) (4) and 265.1082 (c) (4)) and 61 FR at 59941, November 25, 1996. The limitation to wastes that have achieved the generally-applicable treatment standard in fact means that the exemption is unavailable to wastes receiving treatment variances that alter the generally-applicable standards for organic hazardous constituents. EPA is confirming here that this literal reading is intentional.

III. Responses to Comment

Most comments supported the Agency's proposal, or suggested that there was no need to clarify the standard in the existing rule. The main negative comment came from the Environmental Defense Fund, raising a number of points.

First, the commenter argued that the Agency's own closure rules for impoundments create the environmentally adverse incentive to leave wastes in place and thus create the dilemma to adopt alternative treatment standards. The comment urges

[5] As EPA explained in the May 12, 1997, **Federal Register** notice, however, remediation activities involving replacement of treated soils or other wastes onto the land is not a type of use constituting disposal. The activity is a type of supervised remediation, and is not the type of unsupervised recycling activity covered by the use constituting disposal provisions. 62 FR at 26063, May 12, 1997.

[6] It should be noted that the Subpart CC standards do not apply to waste management units used solely for on-site treatment or storage of hazardous waste that is generated as the result of remedial activities required by RCRA corrective action authorities, CERCLA authorities, or similar Federal or State authorities. See 40 CFR 264.1080 (b) (5) and 265.1080 (b) (5).

amendment of the closure standards for impoundments.

While it is correct that the closure rules for surface impoundments (and landfills) create more opportunities to close with wastes left in place than do closure standards for tanks, piles, containment buildings, and drip pads, EPA did not, and is not, reopening any of the closure standards in this proceeding.[7] In developing the standards for closure of surface impoundments, EPA allowed the option of leaving wastes in place because of the practical difficulties of removing large volumes of waste from impoundments, many of which had been operating over long periods of time, and the recognition that, when properly capped, some former surface impoundments can safely contain wastes during and after post-closure care. 47 FR at 32320 and 32321, July 26, 1982. EPA also required, in the closure performance standards, that releases must be minimized or controlled at units where waste is left in place. 47 FR at 32320 and 32321, July 26, 1982. In situations where such minimization or control is not achievable, the closure performance standard would not be met and closure with waste in place would not be available under the regulations. In these respects, EPA's closure regulations for surface impoundments are identical to those for landfills, where waste is purposefully disposed of in the land-based units. EPA is re-evaluating the relationship between requirements for closure of regulated units, including surface impoundments, and requirements for RCRA corrective action and will take this comment under consideration during the re-evaluation. In the meantime, the Agency nevertheless intends to act now in order to assure that the treatment variance option continues to provide a potential intermediate alternative between full removal of waste followed by treatment to the extent of best demonstrated technology on the one hand and no waste removal at all on the other.

Second, the commenter argued that the circumstances under which treatment variances could be approved based on the ''inappropriate'' standard were not adequately defined. The commenter then went on to note that most of the situations in which the Agency contemplated using the ''inappropriate'' standard occurred in the remediation setting and suggested that the Agency either wait until completion of the ongoing rulemaking relating to management of contaminated environmental media, or limit the scope of the variance to remediation situations.[8]

EPA has addressed the comments regarding the specificity of the ''inappropriate'' standard by adding clarifying language, based on discussion in May 12, 1997 proposal, to the final regulations as discussed above. Regarding the second part of this comment, EPA does not believe it should await the outcome of the HWIR-Media proceeding to finalize the clarifying amendment to the treatment variance rules. EPA also notes that nothing in this rule forecloses any of the actions proposed in the HWIR Media proposal, including further definition of situations where treatment variances are appropriate—for example, codification of the type of ''minimize threat'' variance determination discussed in the HWIR-Media proposal. 61 FR at 18810–18812, April 29, 1996. The Agency is continuing to evaluate and review comments on this part of the HWIR-Media proposal.

The Agency is persuaded by the commenter's observation regarding use of treatment variances in the context of remediation. Accordingly, in response to this comment, EPA has chosen to expressly limit approval of treatment variances using the ''environmentally inappropriate'' test to remediation wastes. In this context, remediation waste includes all solid and hazardous wastes and all media (including groundwater, surface water, soils and sediments) and debris, which contain listed hazardous waste or which themselves exhibit a hazardous waste characteristic when such wastes are generated during remediation, such as RCRA corrective action, CERCLA cleanup, and cleanup under a state program. This definition is consistent with the existing definition of remediation waste in 40 CFR 260.10 except that it is not limited to wastes generated for purposes of corrective action under 40 CFR 264.101 or RCRA Section 3008(h). Since site-specific land disposal restriction treatment variances will undergo review and approval by either EPA or an authorized state, EPA does not believe it is necessary to limit the eligible wastes to corrective action cleanups.

Finally, the commenter went on to argue that the open-ended proposal effectively reopened the question of whether site-specific treatment variances (40 CFR 268.44 (h)) could be issued without going through notice-and-comment rulemaking, the argument being that each such variance would establish a new criterion for what ''not appropriate'' means.

Site-specific treatment variances can be granted without using rulemaking procedures. 53 FR at 31199–31200, August 17, 1988. EPA did not reopen this issue in this proceeding, which just is adopting clarifying amendments which reflect EPA's longstanding practice and interpretation of the treatment variance rules. 62 FR at 26059, May 12, 1997. However, to ensure there is no ambiguity over the application of treatment variances, EPA is restoring language to 268.44(h) indicating that the alternative LDR treatment standards established through the treatment variance process are site-specific. This language has always been part of 268.44(h) and was inadvertently omitted in the proposal of this clarifying rule. In any case, the amendment adopted today contains explicit qualifying language so that whatever basis, if any, existed for the commenter's argument is no longer present.

The same commenter, in oral conversations with Agency officials as well as in public comments, maintained the importance of allowing opportunity for public participation whenever a site-specific treatment variance is being considered. These opportunities are already provided. The Agency stated in 1988, when adopting 40 CFR 268. 44(h), ''[t]he Agency agrees as a matter of policy to allow opportunity for public notice and comment prior to granting a nonrulemaking variance from the treatment standard. Because circumstances under which one might apply for a site-specific variance vary, vehicles for public comment will be specified on a case-by-case basis.'' 53 FR at 31200, August 17, 1988. In response to this commenter's concerns, however, EPA has decided to indicate in the rule that opportunity for public participation must be provided when granting or denying any site-specific treatment variance. In doing so, the Agency is simply repeating in the rule what it wrote in the August 1988 preamble. The Agency does not view this step as creating a new regulatory requirement or altering existing practice and, by adding the August 1988 preamble language to the rule, is not intending to

[7] The rules for most regulated units in essence require clean closure, with wastes being allowed to be left in place only after a showing that wastes remaining after initial removal and decontamination cannot be practically removed or decontaminated. See e.g., closure standards for piles in 40 CFR 265.258. The closure rules for impoundments and landfills do not contain these provisions, but rather provide alternative standards for closing with wastes in place or for clean closure. See, e.g., 40 CFR 265.228.

[8] EPA proposed regulations addressing contaminated media at 61 FR 18780, April 29, 1996 and has not yet taken final action on this proposal.

reopen the issue (settled in 1988) of whether site-specific treatment variances can be approved or denied without going through rulemaking procedures.

IV. Withdrawal of Citgo Treatment Variance

EPA granted a treatment variance to Citgo Petroleum on October 28, 1996 for wastes presently disposed in a large surface impoundment awaiting closure. 61 FR 55718, October 28, 1996. Because the company had the legal option of closing the impoundment with waste in place (assuming the technical standards for such closure could be justified), and was virtually certain to pursue that option if treatment of the waste to the limit of best demonstrated technology was required, EPA found that it was an environmentally superior result to assure clean closure and partial treatment. *Id.* at 55721. The variance was in essence used as an incentive to assure aggressive clean closure and the associated waste treatment. EPA, as part of the May 12 notice, proposed to reissue the variance under the clarified regulatory standard. 62 FR at 26062–26061, May 12, 1997.

Since the variance was granted, Citgo has chosen to pursue the legal option of seeking to close the impoundment with waste left in place. Because of Citgo's decision, EPA believes there is no longer any basis for the Citgo treatment variance. If the company's application for closure in place is granted, the variance is moot. If the application is not granted, then the company will have to clean close the impoundment and it will not be necessary to use the variance to create a voluntary incentive for them to do so. Thus, in either case, the basis for granting the variance no longer exists. Accordingly, EPA is withdrawing the Citgo treatment variance in today's Notice. Citgo is aware of the Agency's thinking, has discussed the issue with EPA, and agrees not to oppose withdrawal of the variance.

V. State Authorization

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Today's rule is being promulgated pursuant to section 3004(m) of RCRA (42 U.S.C. 6924(m)), a provision added by HSWA.[9] Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble.

EPA originally indicated that states could not be authorized to review and approve national treatment variances pursuant to 40 CFR 268.44(a) because such variances could result in nationally-applicable standards for a new waste treatability group. 52 FR at 25783, July 8, 1987. In the HWIR-Media proposal, EPA clarified that states could seek authorization to review and approve site-specific treatment variances pursuant to 40 CFR 268.44(h). 61 FR at 18828, April 29, 1996.

The site-specific variance provision is less stringent than the generally applicable LDR program (i.e., the underlying treatment standard from which a variance is sought). Since today's final rule clarifies the existing regulations, for authorization purposes it is considered as stringent as, but no more stringent than the existing site-specific variance regulations. Thus, states are not required to adopt regulations equivalent to 268.44(h) either in its current form or in the clarified form promulgated today. Although States are not required to adopt regulations for site-specific LDR treatment variances, EPA strongly encourages States to adopt and become authorized for the clarified standards established today and is committed to expediting the state authorization process for this rule. In the meantime, EPA will continue to review and approve (as appropriate) treatment variance applications in all States.

VI. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ''significant.'' The Order defines a ''significant'' regulatory action as one that ''is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The Agency considers today's final rule to be nonsignificant as defined by the Executive Order and therefore not subject to the requirement that a regulatory impact analysis has to be prepared. Today's rule clarifies and codifies, in regulatory language, existing EPA standards for the application of a treatability variance where the treatment standard is not appropriate for the restricted waste subject to the standard. Thus, because today's rule clarifies and codifies existing EPA interpretation of the treatability variance provision, no incremental costs are associated with this rulemaking.

B. Regulatory Flexibility Analysis

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 [SBREFA]) whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant adverse economic impact on a substantial number of small entities.

SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. The following discussion explains EPA's determination.

EPA has codified regulatory language in today's rule that petitioners of restricted wastes that wish to obtain a treatment variance do not have to show technical infeasibility when the treatment technology is not appropriate to the waste. This regulatory language clarifies long standing and current Agency interpretation of the 268.44 that the two tests of technical infeasibility and inappropriateness are independent.

[9] Under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized states at the same time that they take effect in unauthorized states. EPA is directed to carry out these requirements and prohibitions in all states, including the issuance of permits, until the state is granted authorization to do so.

(See above discussion and 61 FR 55718 at 55720–21, October 28, 1996; 53 FR at 31200, August 17, 1988; 55 FR 8666 and 8760, March 8, 1990; 61 FR 18780 and 18811, April 29, 1996.) Because this regulatory language codifies existing EPA interpretation of current regulations, it imposes no costs or economic impacts on small entities applying for treatability variances.

Because this clarification does not impose an adverse economic impact to any small entity that is either generator of restricted waste or an owner/operator of a treatment, storage or disposal facility managing such waste that is petitioning the Agency for a variance from the treatment standard, I hereby certify that this rule will not have a significant adverse economic impact on a substantial number of small entities. This rule, therefore, does not require a regulatory flexibility analysis.

C. Unfunded Mandates Reform Act

Under Section 202 of the Unfunded Mandates Reform Act of 1995, signed into law on March 22, 1995, EPA must prepare a statement to accompany any rule where the estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, will be $100 million or more in any one year. Under Section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objective of the rule and is consistent with the statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly impacted by the rule.

Because this regulatory language codifies current EPA interpretation of existing treatability variance language and thus imposes no costs, EPA has determined that this rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate. As stated above, the private sector is not expected to incur costs exceeding $100 million. EPA has fulfilled the requirement for analysis under the Unfunded Mandates Reform Act.

D. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

Dated: December 1, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter 1 of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. Section 268.44 is amended to revise paragraphs (a) and (h), add paragraph (m), and remove paragraph (p) as follows:

§ 268.44 Variance from a treatment standard.

(a) Based on a petition filed by a generator or treater of hazardous waste, the Administrator may approve a variance from an applicable treatment standard if:

(1) It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or

(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must either demonstrate that:

(i) Treatment to the specified level or by the specified method is technically inappropriate (for example, resulting in combustion of large amounts of mildly contaminated environmental media); or

(ii) For remediation waste only, treatment to the specified level or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation.

* * * * *

(h) Based on a petition filed by a generator or treater of hazardous waste, the Administrator or his or her delegated representative may approve a site-specific variance from an applicable treatment standard if:

(1) It is not physically possible to treat the waste to the level specified in the treatment standard, or by the method specified as the treatment standard. To show that this is the case, the petitioner must demonstrate that because the physical or chemical properties of the waste differ significantly from waste analyzed in developing the treatment standard, the waste cannot be treated to the specified level or by the specified method; or

(2) It is inappropriate to require the waste to be treated to the level specified in the treatment standard or by the method specified as the treatment standard, even though such treatment is technically possible. To show that this is the case, the petitioner must either demonstrate that:

(i) Treatment to the specified level or by the specified method is technically inappropriate (for example, resulting in combustion of large amounts of mildly contaminated environmental media where the treatment standard is not based on combustion of such media); or

(ii) For remediation waste only, treatment to the specified level or by the specified method is environmentally inappropriate because it would likely discourage aggressive remediation.

(3) Public notice and a reasonable opportunity for public comment must be provided before granting or denying a petition.

* * * * *

(m) For all variances, the petitioner must also demonstrate that compliance with any given treatment variance is sufficient to minimize threats to human health and the environment posed by land disposal of the waste. In evaluating this demonstration, EPA may take into account whether a treatment variance should be approved if the subject waste is to be used in a manner constituting disposal pursuant to 40 CFR 266.20 through 266.23.

* * * * *

[FR Doc. 97–31914 Filed 12–4–97; 8:45 am]

BILLING CODE 6560–50–P

federal register

Monday
December 8, 1997

Part II

Environmental Protection Agency

40 CFR Part 264, et al.

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 264, 265, and 270

[IL–64–2–5807; FRL–5931–7]

RIN 2060–AG44

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; clarification and technical amendment.

SUMMARY: Under the authority of the Resource Conservation and Recovery Act (RCRA), as amended, the EPA has promulgated standards (59 FR 62896, December 6, 1994) to reduce organic air emissions from certain hazardous waste management activities to levels that are protective of human health and the environment. (The standards are known colloquially as the ''subpart CC'' standards due to their inclusion in subpart CC of parts 264 and 265 of the RCRA subtitle C regulations). These air standards control organic emissions from certain tanks, containers, and surface impoundments (including tanks and containers at generators' facilities) used to manage hazardous waste capable of releasing organic waste constituents at levels which can harm human health and the environment.

Since publication of the final standards on December 6, 1994, the EPA has given public notice and taken comment on several proposed revisions to the final rule, and has made corresponding amendments. In response to public comments and inquiries, today's action makes clarifying amendments to certain regulatory text, and provides clarification of certain preamble language that was contained in previous documents for this rulemaking.

DATES: These amendments are effective December 8, 1997.

ADDRESSES: This document is available on the EPA's Clean-up Information Bulletin Board (CLU–IN). To access CLU–IN with a modem of up to 28,800 baud, dial (301) 589–8366. First time users will be asked to input some initial registration information. Next, select ''D'' (download) from the main menu. Input the file name ''RCRA–FIN.ZIP'' to download this document. Follow the on-line instructions to complete the download. More information about the download procedure is located in Bulletin 104; to read this type ''B 104'' from the main menu. For additional help with these instructions, telephone the CLU–IN help line at (301) 589–8368.

Docket. The supporting information used for the subpart CC rulemaking is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to this rulemaking are F–91–CESP–FFFFF, F–92–CESA–FFFFF, F–94–CESF–FFFFF, F–94–CE2A–FFFFF, F–95–CE3A–FFFFF, F–96–CE3F–FFFFF, and F–96–CE4A–FFFFF. The RCRA docket is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Review of docket materials is conducted at the Virginia address; the public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA docket office is RCRA Information Center (5305W), U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: For general information about the RCRA Air Rules, or specific rule requirements of RCRA rules, please contact the RCRA Hotline, toll-free at (800) 424–9346. Contacts for specific information are listed in the **SUPPLEMENTARY INFORMATION** section of this preamble.

SUPPLEMENTARY INFORMATION:

Regulated Entities: The entities potentially affected by this action include:

Category	Examples of regulated entities
Industry	Businesses that treat, store, or dispose of hazardous waste and are subject to RCRA subtitle C permitting requirements, or that accumulate hazardous waste on-site in RCRA permit-exempt tanks or containers pursuant to 40 CFR 262.34(a).
Federal Government	Federal agencies that treat, store, or dispose of hazardous waste and are subject to RCRA subtitle C permitting requirements, or that accumulate hazardous waste on-site in RCRA permit-exempt tanks or containers pursuant to 40 CFR 262.34(a).

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be interested in the amendments to the regulation affected by this action. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria in § 264.1030 and § 265.1030 of the RCRA subpart AA rules, § 264.1050 and § 265.1050 of the RCRA subpart BB rules, and § 264.1080 and § 265.1080 of the RCRA subpart CC air rules.

Informational Contacts

If you have questions regarding the applicability of this action to a particular situation, or questions about compliance approaches, permitting, enforcement and rule determinations, please contact the appropriate regional representative below:

Region I

Stephen Yee, (617) 565–3550; Jim Gaffey, 565–3437; U.S. EPA, Region I, JFK Federal Building, Boston, MA 02203–0001

Region II

Abdool Jabar, (212) 637–4131; John Brogard, 637–4162; Jim Sullivan, 637–4138; U.S. EPA, Region II, 290 Broadway, New York, NY 10007–1866

Region III

Linda Matyskiela, (215) 566–3420; Andrew Clibanoff, 566–3391; U.S. EPA, Region III, 841 Chestnut Building, Philadelphia, PA 19107

Region IV

Denise Housley, (404) 562–8495; Rick Gillam, 562–8498; Jan Martin, 562–8593; Anita Shipley, 562–8466; Donna Wilkinson, 562–8490; Judy Sophianolpoulos, 562–8604; David Langston, 562–8588; U.S. EPA, Region IV, 61 Forsyth Street, Atlanta, GA 30303

Region V

Jae Lee, (312) 886–3781; Uylaine McMahan, 886–4454; Mike Mikulka, 886–6760; Ivonne Vicente, 886–4449; Wen Huang, 886–6191; U.S. EPA, Region V, 77 West Jackson Street, Chicago, IL 60604

Region VI

Michelle Peace, (214) 665–7430; Teena Wooten, 665–2279; U.S. EPA, Region

VI, 1445 Ross Avenue, Suite 1200, Dallas, TX 75202–2733

Region VII

Ed Buckner, (913) 551–7621; Ken Herstowski, 551–7631; U.S. EPA, Region VII, 726 Minnesota Avenue, Kansas City, KS 66101

Region VIII

Mindy Mohr, (303) 312–6525; Janice Pearson, 312–6354; U.S. EPA, Region VIII, 999 18th Street, Suite 500, Denver, CO 80202–2466

Region IX

Stacy Braye, (415) 774–2056; Jean Daniel, 774–2128; U.S. EPA, Region IX, 75 Hawthorne Street, San Francisco, CA 94105

Region X

Linda Liu, (206) 553–1447; David Bartus, 553–2804; U.S. EPA, Region X, 1200 Sixth Avenue, Seattle, WA 98101

For questions about testing or analytical methods mentioned in this document, please contact Ms. Rima Dishakjian, Emission Measurement Center (MD–19), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–0443. For information concerning the analyses performed in developing this rule, contact Ms. Michele Aston, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–2363, electronic mail address, ''aston.michele@epamail.epa.gov.''

Background

Section 3004(n) of RCRA requires EPA to develop standards to control air emissions from hazardous waste treatment, storage, and disposal facilities (TSDF) as may be necessary to protect human health and the environment. This requirement echoes the general requirement in RCRA section 3004(a) and section 3002(a)(3) to develop standards to control hazardous waste management activities as may be necessary to protect human health and the environment. The Agency has issued a series of regulations to implement the section 3004(n) mandate; these regulations control air emissions from certain process vents and equipment leaks (part 264 and part 265, subparts AA and BB), and emissions from certain tanks, containers, and surface impoundments (the subpart CC standards, which are the primary subject of today's action).

The EPA today is making technical amendments to the final subpart AA, BB, and CC standards, and providing interpretations for certain provisions of those rules. Since the publication of the final subpart CC rule (59 FR 69826, December 4, 1994), the EPA has published four **Federal Register** documents that delayed the effective date of that rule. The first (60 FR 26828, May 19, 1995) revised the effective date of the standards to be December 6, 1995. The second (60 FR 56952, November 13, 1995) revised the effective date of the standards to be June 6, 1996. The third (61 FR 28508, June 5, 1996) further postponed the effective date for the rule requirements until October 6, 1996, and the fourth (61 FR 59931, November 25, 1996) established the ultimate effective date of December 6, 1996. The EPA has also issued an indefinite stay of the standards specific to units managing wastes produced by certain organic peroxide manufacturing processes (60 FR 50426, September 29, 1995).

On August 14, 1995, the EPA published a **Federal Register** document entitled, ''Proposed rule; data availability'' (60 FR 41870) and opened RCRA docket F–95–CE3A–FFFFF to accept comments on revisions that the EPA was considering for the final subpart CC standards. The EPA accepted public comments on the appropriateness of these revisions through October 13, 1995. Throughout 1996 and into the present year, the EPA also engaged in repeated discussions with representatives of the groups filing petitions for review challenging the subpart CC standards.

To further inform the affected public of the major clarifications, compliance options, and technical amendments being considered, the EPA conducted a series of seminars during August and September of 1995. At that time, a total of six seminars were held nationally. An updated series of six seminars was held in September through December 1996 and two additional seminars were held March and April of 1997 in conjunction with an industry trade association. (Refer to EPA RCRA Docket No. F–95–CE3A–FFFFF.) During these seminars, additional comments were received on the RCRA air rules for tanks, surface impoundments, and containers. These comments were also considered by the EPA in developing this final action.

On February 9, 1996, the EPA published a **Federal Register** document (61 FR 4903), ''Final rule; technical amendment,'' which made clarifying amendments in the regulatory text of the final standards, corrected typographical and grammatical errors, and clarified certain language in the preamble to the final rule to better convey the EPA's original intent.

On November 25, 1996, the EPA published a **Federal Register** document (61 FR 59932), ''Final rule'' that amended provisions of the final subparts AA, BB, CC rules to better convey the EPA's original intent, to provide additional flexibility to owners and operators who must comply with the rules, and to change the effective date of the requirements contained in the subpart CC rules to be December 6, 1996.

Today's action makes technical amendments to the final subparts AA, BB, CC rules in order to clarify the regulatory text of the final standards; interpret those standards; correct typographical, printing, and grammatical errors; and clarify certain language published in the preambles of previous **Federal Register** documents, to better convey the EPA's original intent.

Today's amendments include one change to 40 CFR Part 270, to correct a typographical error made in the December 6, 1994 final rule. The text listing the sections of regulatory requirements that must be included in the general inspection schedule incorrectly listed ''245.193(i)'' where section 264.193(i) was intended. This was obviously a typographical error, as all of the sections listed in that provision are from 40 CFR part 264; the sections are listed in numeric order, and ''245.193(i)'' was very obviously out of place. Further, no section 245.193(i) exists; in fact, no 40 CFR 245 exists. Today's amendment corrects this typographical error.

Outline

The information presented in this preamble is organized as follows:

I. Subpart B—General Facility Standards

Today's action removes §§ 264.1091(b) and 265.1091(b) from the list of sections in §§ 264.15 and 265.15, respectively. Sections 264.15 and 265.15 contain a list of provisions from which inspection items and frequencies are required to be included in the general facility inspection schedule. The inspection requirements for floating roof tanks that were in §§ 264.1091(b) and 265.1091(b) of subpart CC as promulgated, were incorporated into §§ 264.1084 and 265.1085 by the November 25, 1996, final rule amendments (61 FR 59944). That action also removed and reserved §§ 264.1091(b) and 265.1091(b). Therefore, the EPA is revising this provision to reference the paragraphs that now contain the inspection requirements. The EPA is also correcting a previous omission, by including a reference to the sections of subpart CC that include inspections requirements.

II. Subpart E—Manifest System, Recordkeeping, and Reporting

Today's action also removes §§ 264.1091(b) and 265.1091(b) from the list of sections from which monitoring, testing, or analytical data, and corrective action requirements must be included in the facility operating record. The monitoring and testing requirements for floating roof tanks that were in §§ 264.1091(b) and 265.1091(b) of subpart CC as promulgated, were incorporated into §§ 264.1084 and 265.1085 by the November 25, 1996 final rule amendments (61 FR 59944) and, as just noted, §§ 264.1091(b) and 265.1091(b) were removed and reserved. Therefore, the EPA is revising this provision to reference the paragraphs that now contain the appropriate requirements, and including a reference to provisions of subpart CC that were previously omitted through an oversight.

III. Subpart AA—Air Emission Standards for Process Vents

A. Applicability

In today's action, the EPA is amending §§ 264.1030(b)(3), 264.1050(b)(3), 265.1030(b)(3), and 265.1050(b)(3) to make clear the EPA's original intent as to when recycling units are subject to the subpart AA and BB rules. The EPA made clear in the November 25, 1996 preamble that recycling units which are otherwise exempt from RCRA subtitle C regulation under 40 CFR 261.6(c)(1) are not subject to subpart AA and BB standards unless some other unit at the facility has to obtain a RCRA permit. See 61 FR at 59932–33, and 59935. The Agency also showed how the existing regulation could be interpreted to give this result. *Id.* at 59935. Put another way, Subparts AA and BB are applicable to recycling units at permitted TSDF and interim status TSDF. Also, at both TSDF and generator facilities (generators' 90-day accumulation units), subparts AA and BB are applicable to units that are not recycling units. However, the EPA believes that the rule language can be drafted to make this point more clearly, and is doing so in today's rule, for both subpart AA and BB.

The EPA is further clarifying that the RCRA ''permit-as-shield'' provisions do not apply to the subpart AA (or the subpart BB or CC standards); see Section VI.E of the preamble to the final rule, 59 FR 62910, December 6, 1994. This means that owners and operators receiving permits before the date those rules became effective must nevertheless comply with the subpart AA (and the subpart BB and CC) regulatory standards. The EPA is adding a sentence to § 264.1030(c) which essentially cross-references the existing § 270.4(d) provision stating that ''permit-as-a shield'' does not apply to these units.

The EPA has previously amended 40 CFR 270.4 (see 59 FR 62952, December 6, 1994) to require that owners and operators of TSDF that have been issued final permits prior to December 6, 1996, comply with the air standards under 40 CFR part 265, subparts AA, BB, and CC until the facility's permit is reviewed or reissued by the EPA. As was explained in Section VIII.A of the preamble to the final rule (59 FR 62920, December 6, 1994), this amendment eliminates application of the ''permit-as-a-shield'' practice for these air standards but does not require that the EPA or the TSDF owner or operator initiate a permit modification to add the requirements of 40 CFR part 264, subparts AA, BB, or CC. The EPA believes that this minimizes the administrative burden on the TSDF owner or operator as well as limits the additional burden on the permitting resources of the EPA. However, when a permit is reopened or subject to renewal, or when a TSDF owner or operator submits a Class 3 modification request pertaining to an existing unit or addition of a new unit subject to these standards, then the applicable requirements of 40 CFR part 264, subparts AA, BB, and CC will be incorporated into the modified permit conditions.

The EPA is also amending the applicability provision of subpart AA by adding a new § 264.1030(d) and § 265.1030(d). This provision states that a process vent is not subject to the subpart AA standards provided the owner or operator certifies that all subpart AA-regulated process vents at the facility are equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified in Part 60, 61, or 63. The EPA adopted a similar provision for units subject to subpart CC as part of the November 1996 amendments (see § 264.1080(d) and § 265.1080(d) of subpart CC) and the logic for applying the same exemption in the same manner to subpart AA process vents is identical. The preamble discussion at Section IV.C, 61 FR 59938–59939 (November 25, 1996) explains at length why this exemption avoids unnecessary duplication with CAA requirements, all of which discussion applies equally here. The EPA in fact intended that the exemption apply to subpart AA process vents as well (since there is no basis for distinguishing between subpart AA and CC units for this purpose), but inadvertently omitted the exemption from subpart AA when it codified the subpart CC exemption. Today's amendment corrects that oversight.

This exemption is, however, implemented slightly differently from the parallel exemption for subpart CC units. Both of the compliance approaches allowed under the existing subpart AA rules require emission control or emission limits on a facility-wide basis. See 40 CFR 264.1032(a)(1) and (a)(2). Thus, to be equally protective of human health and the environment, the EPA considers it necessary that any alternative compliance demonstration require control of all of the process vents at the facility that would have otherwise been regulated under subpart AA. Therefore, today's exemption is only available at a facility where each and every process vent that would otherwise be subject to subpart AA is equipped with, and operating air

emission controls, in compliance with an applicable CAA standard under Parts 60, 61, or 63. As with the similar provisions in subparts BB and CC, to comply with the requirements at paragraphs § 264.1030(d) or § 265.1030(c), the emissions from each subpart AA process vent must be routed through an air emission control device; a vent that is in compliance with a CAA standard under an exemption from control device requirements is not in compliance with those provisions of subpart AA. Despite this minor restriction, the EPA considers this alternative to provide the facility owner or operator with a broader degree of compliance flexibility, and less extensive monitoring, recordkeeping, and reporting requirements under RCRA, and therefore to warrant promulgation.

The EPA has received inquiries as to whether portable equipment that otherwise meets the definition of a unit subject to the subpart AA, BB, or CC regulations, is subject to the requirements of subparts AA, BB, and CC. The literal language of the regulations clearly applies, since there is no exemption for portable equipment in the regulations. Nor does the EPA consider that such an exemption is appropriate. Portable equipment that is used to manage hazardous waste consistent with the applicability requirements of these subparts would emit the same volume of organics that stationary equipment would emit. The EPA therefore considers it appropriate to subject portable equipment to the same control requirements as stationary, or non-portable equipment. By this interpretation, the EPA is not extending the applicability of the AA, BB, or CC standards; rather, the EPA is merely clarifying that these standards do not contain any exemption or special criteria for portable equipment. Moreover, the fact that such portable equipment may also be used for non-hazardous waste applications has no bearing on the EPA's intent to regulate the portable equipment during instances when it is used for hazardous waste applications. The EPA does not consider that fact to affect the need to control the equipment when it is in hazardous waste service.

B. Definitions

''In light liquid service'' was defined in § 264.1031 to be consistent with the definition of ''in light liquid service'' in the NSPS for equipment leaks of VOC in the synthetic organic chemicals manufacturing industry (40 CFR part 60, subpart VV). It was the EPA's intent that the determination of ''in light liquid service'' be based on the organic content of a liquid. However, questions have been raised by the regulated community regarding how to account for water in the determination of ''in light liquid service.'' In response to the questions, the definition of ''in light liquid service'' in § 264.1031 is revised by changing ''* * * the vapor pressure of one or more of the components in the stream is greater than 0.3 kilopascals (kPa) at 20 °C, the total concentration of the pure components having a vapor pressure greater than 0.3 kilopascals (kPa) at 20 °C is equal to or greater than 20 percent by weight * * *'' to read as follows ''* * *the vapor pressure of one or more of the organic components in the stream is greater than 0.3 kilopascals (kPa) at 20 °C, the total concentration of the pure organic components having a vapor pressure greater than 0.3 kilopascals (kPa) at 20 °C is equal to or greater than 20 percent by weight* * *'' This revision clarifies that the definition applies only to the organic components of the waste stream; not to non-organic chemicals that meet the vapor pressure criteria (e.g., water). The revised definition is consistent with the definition of ''in light liquid service'' in the recently promulgated NESHAP for equipment leaks (40 CFR part 63, subpart H).

C. Standards: Closed-Vent Systems and Control Devices

The final subpart AA air emission standards for process vents provided up to an 18-month implementation schedule after the effective date that a facility becomes subject to the provisions of subpart AA, for installation and operation of closed-vent systems and control devices. The February 9, 1996 (61 FR 4911) revisions to §§ 264.1033(a)(2) and 265.1033(a)(2) extended the implementation schedule to as much as 30 months, consistent with the requirements of subpart CC. Consistent with this existing provision, today's revisions clarify that units which become newly subject after the subpart AA effective date of December 21, 1990 as a result of an EPA regulatory change or statutory change, are also provided a 30-month implementation schedule. The provision is also amended to clarify that units which become newly subject to subpart AA after that effective date due to any reason other than an EPA regulatory change or statutory amendment are not allowed to comply using an implementation schedule; they must be in compliance on the date that the unit first becomes subject to subpart AA.

A printing correction is also being made to this section in § 265.1033(f)(2)(vi)(B). The degree symbol was inadvertently printed in lower case rather than as a superscript; today's action corrects this.

The November 25, 1996, amendments to the subpart CC standards (at § 265.1088(c)(2)(i)) for control devices and closed-vent systems, added provisions to allow up to 240 hours per year for periods of planned, routine maintenance of a control device; during such time, the control device is not required to meet the performance requirements for emission reductions specified in the rule. The EPA's rationale for adding this allowance to subpart CC is explained in the preamble to those amendments at 61 FR 59948. The EPA has determined that, based on the nature of the affected operation or the type of unit that is being served by the control device, there are circumstances in which a limited allowance for control device down-time during maintenance is reasonable. For example, the EPA made a similar allowance of up to 240 hours for control device performance in the HON requirements for storage vessels, i.e., tanks, (see § 63.119(e)(3)); this allowance was made based on consideration of the fact that a HON facility with affected storage vessels normally would not have adequate excess storage tank capacity to handle emptying an affected tank(s) each time the control device serving the vessel(s) is shut down for routine maintenance. It is also important to note that the HON regulation did not extend this same routine maintenance allowance for control devices to other types of units, or to affected process vents; the HON allowance is only for control devices serving storage vessels. The EPA has judged that the operational practices of process vents are significantly different from those of storage vessels, and thus do not warrant a similar allowance for control device down-time.

In the amendments to the subpart CC rule that were published in November 1996, the EPA adopted the provision from the HON, and further extended and broadened the control device allowance in applying it to control devices that serve not only tanks but also surface impoundments and containers (see § 264.1087(c)(2)(i)). The decision to extend the allowance to the subpart CC hazardous waste management units was also based on the consideration of typical operational practices of affected TSDF. Within the waste management industry, the quantities and compositions of the waste managed vary widely over time; also, many regulated waste management units (i.e., tanks and impoundments)

have vent flow rates low enough that several units are controlled using a single device. For several waste management units served by a single control device, it is not feasible in most cases to have enough excess storage capacity to handle all the units that would be served by a single control device. Therefore, the EPA included the control device maintenance allowance in the subpart CC standards for containers and surface impoundments, as well as for tanks. As in the case of the HON, the EPA does not consider it appropriate to extend the control device allowance for maintenance time to control devices serving process vents. Therefore, the EPA is not extending the control device maintenance allowance to subpart AA process vents.

It also has come to the attention of the EPA that some commenters have misinterpreted the language relating to the accuracy of the temperature monitoring devices that the EPA specified in the subpart AA standards for closed-vent systems and control devices, found at §§ 264.1033(f) and 265.1033(f). As these commenters interpret the rule language, the EPA has specified a degree of accuracy that precludes monitoring devices with greater accuracy than is specified in the regulations. This is not the EPA's intent, and the Agency does not consider this to be a reasonable interpretation of the rule. At numerous places in this rule and other rules, the EPA has specified the accuracy of temperature monitoring devices by requiring ''an accuracy of ±1 percent of the temperature being monitored in degrees Celsius (°C) or ±0.5°C, whichever is greater.'' It is implicit in the use of this language that the EPA is providing a range of accuracy with which the monitoring device must comply or conform. For example, the term ''±1 percent'' indicates that the accuracy of the device must fall within the range from plus 1 percent to minus 1 percent. Any device that has an accuracy within this range complies with the rule requirement. It was not the intent of the EPA to preclude the use of devices with greater (i.e., better) accuracy than the absolute value specified.

D. Recordkeeping Requirements

Commenters have stated that the requirement at § 265.1035(c)(10)(iv) to record the maximum instrument reading measured by Method 21 after a leak has been successfully repaired or determined to be not repairable is unnecessary. They contend that because other rules which require use of EPA Method 21, such as the Off-Site Waste and Recovery Operations NESHAP (40 CFR part 63, subpart DD), do not require this instrument reading, the requirement should be removed. Although subpart DD to part 63 does not contain a similar recordkeeping requirement for the instrument reading, as part of the information recorded when a leak is detected using Method 21, various other regulations do have similar requirements (see § 63.181(d)(4) of 40 CFR part 63, subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks). The EPA continues to believe that this information is useful in the implementation and enforcement of the air emission regulations. Instrument monitoring after a repair is an indication of the success of the repair, information which EPA considers commensurate with the initial leak monitoring requirements at § 265.1033(k)(1)(i). Instrument monitoring upon determination that a leak is not repairable is an indication of the severity of the organic emissions that will continue to be emitted from the non-repairable equipment, which EPA considers valuable information for the implementation and future review of its organic air emissions standards. Therefore, EPA will maintain this recordkeeping requirement.

IV. Subpart BB—Air Emission Standards for Equipment Leaks

A. Applicability

Today's action adds appropriate language to the subpart BB applicability provisions to cross reference and clarify that the EPA has modified the ''permit-as-a-shield'' practice for implementation of the subpart BB (as well as the subpart AA and CC) RCRA air rules. The modification of this practice affects owners and operators of existing TSDF for which final RCRA permits have been issued by the EPA. Paragraph (c) in § 264.1050 and § 265.1050 is being revised to clarify that the owner or operator is subject to the requirements of 40 CFR part 265, subpart BB until such date that the owner or operator receives a final RCRA permit incorporating the requirements of 40 CFR part 264, subpart BB.

The EPA has previously amended 40 CFR 270.4 (see 59 FR 62952, December 6, 1994) to require that owners and operators of TSDF that have been issued final permits prior to December 6, 1996, comply with the air standards under 40 CFR part 265, subparts AA, BB, and CC until the facility's permit is reviewed or reissued by the EPA to include the part 264 standards. As is explained in Section VIII.A of the preamble to the final rule (59 FR 62920, December 6, 1994), this amendment eliminates application of the ''permit-as-a-shield'' practice for these air standards, but does not require that the EPA or the TSDF owner or operator initiate a permit modification to add the requirements of 40 CFR part 264, subparts AA, BB, or CC. The EPA considers the existing regulatory text to accurately convey this intent, and is providing this preamble discussion in response to commenters' requests.

B. Standards: Closed-Vent Systems and Control Devices

The final subpart BB air emission standards for equipment leaks referenced the subpart AA closed-vent system and control device requirements to provide up to an 18-month implementation schedule after the effective date that a facility becomes subject to the provisions of subpart BB, for installation and operation of closed-vent systems and control devices. The February 9, 1996 (61 FR 4911) revisions to §§ 264.1060 and 265.1060 added a paragraph to extend the implementation schedule to as much as 30 months, consistent with the requirements of subpart CC. Today's amendments clarify that units that begin operation after the subpart BB effective date of December 21, 1990, and that become subject to the requirements of subpart BB because of an EPA regulatory change or a statutory change after December 21, 1990, are also provided a 30-month implementation schedule. The provision is also amended to clarify that units which become newly subject to subpart BB after that effective date due to any reason other than an EPA regulatory change or a statutory amendment are not allowed to comply using an implementation schedule; they must be in compliance on the date that the unit first becomes subject to subpart BB. In recognition that facilities have been on notice since 1990 of the applicability of subparts AA and BB, and since 1991 of the applicability of subpart CC, the EPA considers it reasonable to expect facilities that become newly-subject to these subparts, through other than a statutory or EPA regulatory change, to be in compliance with the provisions on the date that they become newly subject.

C. Alternative Standards for Valves

Clarifying language is being added to the alternative standards for valves in gas/vapor service or in light liquid service: skip period leak detection and repair. The EPA has received comments on the ambiguity of the skip period leak detection and repair provisions as codified. The codified language is ambiguous because it gives no

indication of how the alternative work practice that involves two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent which allows the owner or operator to skip one of the quarterly leak detection periods [§ 264.1062(b)(2) or § 265.1062(b)(2)] interacts with the alternative work practice that involves five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent which allows the owner or operator to skip three of the quarterly leak detection periods [§ 264.1062(b)(3) or § 265.1062(b)(3)]. Nor is the codified language clear on whether the periods with the percentage of valves leaking equal to or less than 2 percent need to be repeated after the initial skipped periods, or if the owner or operator is allowed to continue on the skip period schedule once the criteria have been met for one period.

In order to clarify the EPA's intent regarding the skip monitoring alternatives, paragraphs in § 264.1062(b) and § 265.1062(b) are being amended to more fully explain that, if the specified criteria are met under the alternatives, the owner or operator can monitor for leaks once every six months (i.e., under § 264.1062(b)(2)) or once every year (i.e., under § 264.1062(b)(3)). If an owner or operator is monitoring equipment every six months, under § 264.1062(b)(2), he is not complying with the five consecutive quarterly leak detection requirements of § 264.1062(b)(3), and thus does not qualify to begin monitoring once every year. Essentially, if an owner or operator meets the requirements of subsection (b)(2), he may choose to either begin monitoring every six months, or he may choose to continue quarterly monitoring in an attempt to meet the requirements of subsection (b)(3); complying with the provision of subsection (b)(2) excludes the opportunity to comply with the requirements of subsection (b)(3).

Once an owner or operator meets the qualifications of either subsection (b)(2) or subsection (b)(3), he is then allowed to continue the skip monitoring of that provision as long as the percentage of valves found leaking by the semiannual or annual monitoring is equal to or less than 2 percent. These clarifying amendments reflect the Agency's prior intent regarding the implementation of the alternative standards for valves.

D. Recordkeeping Requirements

The recordkeeping provisions of subpart BB are being amended to eliminate any owner or operator burden caused by regulatory overlap. The subpart BB recordkeeping provisions in § 264.1064(m) and § 265.1064(m) are being amended to allow any equipment that contains or contacts hazardous waste that is subject to subpart BB and also subject to regulations in 40 CFR part 60, 61, or 63 to determine compliance with subpart BB by documentation of compliance with the relevant provisions of the Clean Air Act rules codified under 40 CFR part 60, part 61, or part 63. Because compliance with subpart BB is demonstrated through recordkeeping, this recordkeeping revision has the effect of exempting equipment that would otherwise be subject to subpart BB from subpart BB requirements, provided the equipment is operated, monitored and repaired in accordance with an applicable CAA standard, and appropriate records are kept to that effect.

As is described in Section III.A of this preamble regarding the potential regulatory overlap of the RCRA air rules and Clean Air Act regulations, the EPA is providing this exemption to reduce the possibility of duplicative or conflicting requirements for those TSDF units using organic emission controls in compliance with a NESHAP but which are also subject to requirements under the RCRA standards. The EPA considers this to be the most appropriate approach to ensure that air emissions from equipment managing hazardous waste are controlled to the extent necessary to protect human health and the environment. This exemption was originally included with the promulgation of subpart BB on June 21, 1990 (55 FR 25454), in the same format, but with more specificity as to the CAA regulations. As discussed in Section III.A. of this preamble, it was clearly the Agency's intent to apply the same rationale explained in the November 25, 1996 preamble at 61 FR 59938, to extend the applicability exemption to subpart BB equipment operated, monitored and repaired in accordance with an applicable CAA standard under 40 CFR part 60, 61, or 63.

The November 25, 1996 final rule amendments added a provision to the applicability of subpart BB that excludes equipment that contains or contacts affected hazardous waste for a period of less than 300 hours per calendar year. See 61 FR at 59937. One commenter has requested that the Agency clarify whether equipment which is not in service, but contains hazardous waste residue, is considered to be in contact with hazardous waste. The EPA considers the language of the provision explicit on this point; the amount of time that equipment contains hazardous waste, whether at operating capacity or as a residue, is considered time that the equipment ''contains or contacts'' hazardous waste. Thus, if subpart BB equipment contains subpart BB-regulated hazardous waste residues for more than 300 hours during a calendar year, that equipment would not be exempt from subpart BB under the provisions at § 264.1050(f) or § 265.1050(f). The EPA purposefully worded the provision to say, ''contains or contacts'' because the emissions from the equipment are related to the organic hazardous waste that is in the equipment; even if the process or equipment is not in service, the organic hazardous waste in contact with the equipment has the potential to volatilize, and EPA considers it necessary to subject the equipment to the requirements of subpart BB. Thus, EPA is today reiterating that the regulation at § 264.1050(f) and § 265.1050(f) requires the equipment to be void of subpart BB-regulated waste for a minimum of 300 hours per calendar year.

The same commenter inquired whether, for the purposes of this same provision, the period of time which the equipment contains or contacts subpart BB-regulated waste must be consecutive (e.g. 290 consecutive hours), or if it could be the sum of shorter periods (e.g., ten periods of 29 hours each). The provision was intended to exempt equipment that does not contain or contact subpart BB-regulated waste a total of 300 hours of more during a calendar year. This provision was adopted from similar provisions of the Hazardous Organic NESHAP promulgated under 40 CFR 63.160. See preamble discussion at 61 FR 59937, November 25, 1996. It is implicit in reading the language at 40 CFR 63.160(a) that the EPA intended the requirement to refer to a sum, or total, of 300 hours per calendar year, as opposed to a single period of 300 hours. The EPA is today amending regulatory text at 264.1050(f) and 265.1050(e) and the associated recordkeeping requirements at 264.1064(g)(6) and 265.1064(g)(6) to remove the phrase, ''a period of'' and thus, remove any ambiguity as to the Agency's intent that for this regulatory requirement, instances during which equipment contains or contacts subpart BB-regulated waste need not be consecutive; it is only required that the sum of all time that the equipment contains or contacts subpart BB-regulated waste is less than 300 hours per calendar year.

E. Open-Ended Valves and Lines

Several comments have been received regarding the requirements for open-

ended lines or valves as they relate to gravity piping. Commenters expressed concern that gravity feed piping that is equipped with an open valve or line does not meet the requirements of the subpart BB standards. Subpart BB requires that each open-ended valve or line be equipped with a cap, blind flange, plug, or a second valve when managing hazardous wastes with an organic content equal to or greater than 10 percent by weight. The commenters have suggested that the EPA amend the subpart BB requirements to state that the EPA considers a drain system that meets the requirements of 40 CFR part 63, subpart RR, National Emission Standards for Individual Drain Systems to be a closed system. The EPA has examined this issue and has found no technical basis for making a change to the existing rule. Moreover, the Part 63 subpart RR requirements are intended for control of waste in organic concentrations on the order of magnitude with the 500 ppmw action level of the subpart CC standards, whereas the subpart BB standards in parts 264 and 265 are applicable to equipment that contacts waste with an organic concentration of 10 percent by weight. There is a significant difference in the level of required control between the two standards. The EPA does not consider it appropriate to allow the subpart RR drain system requirements to substitute for the more extensive open-ended valve and line requirements of subpart BB, because application of the subpart RR standards to subpart BB equipment would not provide an equivalent level of organic emission control as would be achieved by compliance with the applicable subpart BB requirements. Facility owners or operators with gravity feed piping that requires a vent to facilitate draining can comply with the subpart BB and CC standards by installing organic emission control equipment on the pipe vent. The control requirements in subpart BB are appropriate and adequate for control of open-ended lines and valves.

V. Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

A. Applicability and Definitions

In §§ 264.1080 and 265.1080, the EPA is revising the effective date of the subpart CC rules to be December 6, 1996. This revised effective date was established in the November 25, 1996 amendments, but this regulatory change was inadvertently omitted from that action. Today's revision corrects this oversight.

In § 265.1081, the definition of ''in light material service'' is revised to correct a typographical error to capitalize the T in ''the'' as follows, ''* * * The vapor pressure of one or more of the organic constituents * * *''

B. Schedule for Implementation of Air Emission Standards

The final subpart CC standards allow the owner or operator to prepare an implementation schedule for installation of control equipment that cannot be installed and in operation by the effective date of the rule (See § 265.1082(a)(2)). The EPA intended that the implementation schedule apply to any capital projects implemented by the owner or operator to comply with the subpart CC requirements. (See 61 FR at 4905, February 9, 1996.) This intent was expressed in the 1994 final rule; see Hazardous Waste TSDF Background Information for Promulgated Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers, EPA–453/R–94–076b (''BID'') page 9–7, which states that the owner's or operator's approach to complying with the air emission control requirements under the subpart CC standards may involve a major design and construction project which requires longer than 18 months to complete (e.g., replacing a large open surface impoundment with a series of covered tanks). To further clarify this intent, § 265.1082 is revised by today's action to specify that compliance can be demonstrated through an implementation schedule when either: (1) control equipment or waste management units can not be installed and in operation by the rule effective date; or (2) modifications of production or treatment processes to satisfy subpart CC exemption criteria in accordance with § 265.1083(c) can not be completed by the rule effective date. In either case, the implementation schedule must be entered into the facility record, and must contain information demonstrating that the facility will be in compliance with all of the requirements of subpart CC, no later than December 8, 1997. The revisions to the schedule for implementation also incorporate the revised effective date of December 6, 1996.

Commenters have questioned whether compliance activities other than those involving the installation of equipment or the modification of processes may be accomplished under an implementation schedule. For example, whether a facility can delay compliance past the rule effective date for monitoring or testing requirements. The preamble to the February 9, 1996 **Federal Register** document clarified that ''The EPA expects such instances to be rare, but in the event a facility cannot implement any technical requirement of subparts AA, BB, or CC, it is the EPA's intent that the owner or operator document the necessity for a delay in the facility operating record. To be in compliance with the rule, the necessary documentation must be in place by [the rule effective date].'' See 61 FR at 4905, February 9, 1996. The EPA maintains that there may be circumstances in which a facility owner or operator can not be in compliance with certain monitoring or testing requirements by the effective date of the standards. For example, if a facility owner or operator is unable to begin operation of a control device prior to the rule effective date, he would not be able to perform the required monitoring of that device by that date either. However, to be in compliance with the subpart CC rules, the owner or operator must be in compliance with all the rule requirements as soon as is practicable, but no later than December 8, 1997.

(Note: The only exceptions to this final compliance date are those requirements applicable to certain tanks in which stabilization operations are performed, which must be in compliance no later than June 8, 1998 (see 59 FR at 62912, December 6, 1994)), and requirements delayed by the Regional Administrator, as discussed below in this section of today's preamble.

Today's action is also amending regulatory language to clarify that owners or operators of facilities and units that become newly subject to the requirements of subpart CC after December 8, 1997, because of an action other than an EPA regulatory change or a statutory change under RCRA, must comply with all applicable rule requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to subpart CC); the 30-month implementation schedule does not apply in this case. The EPA considered this to be implicit in the existing language of paragraph (b) of § 265.1082. The Agency is adding new language in response to questions and comments from affected facilities regarding interpretation of the rule requirements regarding implementation schedules. The new provision will be codified as paragraph 265.1082(c).

One commenter expressed concern regarding the initial monitoring of closed-vent systems. They noted that delayed compliance is allowed under the rules for routine monitoring of those systems that are either inaccessible or unsafe to monitor, and requested that similar provision be allowed for initial monitoring that may be delayed due to

weather or process conditions. The EPA has examined this issue and has concluded that a change in the rule is not appropriate. The industry has been on notice for several years that the subpart CC rules would require these monitoring inspections. Any facilities that become newly subject to the subpart through an EPA regulatory amendment or statutory amendment are typically allowed at least 6 months from the date of publication of the action; the EPA considers this to have been sufficient notice to adequately prepare for, and perform, the necessary monitoring.

As published in the December 6, 1994, final rule, paragraph (c) of § 265.1082 allowed the EPA Regional Administrator to ''extend the implementation date for control equipment at a facility, on a case by case basis * * *,'' In the preamble to the final rule (see 59 FR 62919, December 6, 1994, and the amendments to the rule published November 25, 1996, (see 61 FR 59938), the EPA stated its intent to include the provision to allow the Regional Administrator to extend the implementation date in situations beyond the owner or operators's control, and that this extension would be available only in ''situations such as delays in State permit processing.'' The Agency went even further in placing constraints on these limited conditions by identifying situations associated with permit processing where the allowance would not apply (see 59 FR 62919). It is clear from the literal reading of the provision that the EPA fully intends that the Regional Administrator's extension of an implementation schedule is only allowable for a capital project implemented by a facility owner or operator to comply with the subpart CC air emission control requirements. It is also clear that the Agency does not intend that this Regional Administrator allowance for implementation schedule extensions apply to anything other than the installation of air emission control equipment. Today's action re-designates this provision as paragraph 265.1082(d) to allow the regulatory amendment described above in this section of today's preamble to be codified as subsection (c); however, the provision for Regional Administrator extensions of the final rule compliance date is not changed.

C. Standards: General

Today's amendments are further clarifying that the subpart CC RCRA air rules apply only to units managing a hazardous waste; to this effect, the EPA is adding the word ''hazardous'' in front of the word ''waste'' in §§ 264.1082(b) and 265.1083(b). This point has been made by the EPA throughout the proposal and promulgation of the subpart CC rules (see 59 FR 62896, December 6, 1994, and 61 FR 4906, February 9, 1996); however, there have remained some questions and uncertainties regarding applicability of the rules to non-hazardous wastes. The changes being made today are intended to provide additional emphasis that only hazardous wastes are subject to the subpart CC controls.

Paragraph 265.1083(c)(2)(i) is revised to correct a typographical error in the symbol for the exit concentration limit; the symbol should be C subscript t ''(C_t).''

In addition, §§ 264.1082(c)(3) and 265.1083(c)(3) have been revised to add as an exempt unit a surface impoundment used for biological treatment of hazardous waste in accordance with subpart CC requirements. The EPA intended to exempt surface impoundments used for biological treatment from the subpart CC control requirements. The preamble to the final rule in Section VII(A)(5) (59 FR 62917, December 6, 1994) clearly states ''* * * air emission controls are not required for a surface impoundment in which biological treatment of a hazardous waste is performed under the same conditions specified in the rule for tanks.'' However, surface impoundments performing biological treatment were inadvertently left out of the biological treatment unit exemption in the November 25, 1996, final rule amendments (61 FR 59954).

The EPA has received a number of inquiries asking for interpretations of the provision of the subpart CC rules which states that wastes that meet applicable Land Disposal Restriction (LDR) treatment standards for organic hazardous constituents are exempt from the subpart CC air emission standards. Section 264.1082(c)(4) exempts from the RCRA subpart CC air emission standards:

''A tank, surface impoundment, or container for which all hazardous wastes placed in the unit * * *

''(i) Meets the numerical concentration limits for organic hazardous constituents, applicable to the hazardous waste, as specified in 40 CFR part 268—Land Disposal Restrictions under Table ''Treatment Standards for Hazardous Waste'' in 40 CFR 268. 40 * * *''

A parallel exemption for interim status facilities is found at § 265.1083(c)(4). Under these provisions, tanks, surface impoundments, and containers receiving hazardous wastes that meet the concentration limits for organics applicable to the waste under the generally-applicable treatment standards of the LDR program are not subject to the subpart CC air emission control regulations. See 61 FR 59941 in the preamble and 59954 in the rule (Nov. 25, 1996).

A number of members of the regulated industry (including the Environmental Technology Council, Chemical Waste Management, and the Chemical Manufacturers Association) have inquired as to how this provision applies to situations where the wastes in question are not yet prohibited from land disposal or consist of mixtures of different hazardous wastes. This preamble answers those questions. Copies of correspondence between EPA and these entities have been placed in the public docket for the rule.

The key phrase in the above exemption is what treatment standards are ''applicable to the waste.'' EPA interprets this phrase expansively to include the treatment standard for organics that would apply to the waste whether or not the waste is currently prohibited, so that the exemption may apply to wastes not yet required to be treated for organics as a precondition to land disposal. Under this interpretation, hazardous wastes could be exempt from subpart CC regulation if they meet the treatment standards for organics that would ultimately be required as a precondition to land disposal. This is a reasonable construction of the rule's language (the phrase ''applicable to the waste'' is ambiguous as to its precise scope), and is supported by the preamble to the rule (which says that the exemption can apply to wastes that are not prohibited, see 61 FR 59941). In addition, this reading is consistent with the exemption's underlying principle: if hazardous wastes meet generally-applicable LDR treatment standards for organics, their concentrations of organics are in virtually every case going to be less than warrants control under the subpart CC rules (i.e., volatile organic concentrations will be less than 500 ppmw).

The EPA recognizes that it could interpret the language to apply only to hazardous wastes that are prohibited and actually subject to a treatment standard for organics. This more restrictive interpretation does not seem desirable because hazardous wastes which actually meet treatment standards for organics are likely to have been treated to remove or destroy the organics and thus not warrant regulation under subpart CC. On the other hand, it is EPA's further interpretation that this exemption does not apply to hazardous

wastes for which there would be no treatment standards for organics, namely wastes that are listed solely because of inorganic content. There is no potentially ''applicable'' organic treatment standard for such wastes, and the exemption thus does not apply. In addition, such wastes would not likely be treated for organic constituents; so in the event they contain higher concentrations of organics, this particular LDR exemption should not apply. Such wastes may, however, be exempt from the subpart CC rules because they contain less than 500 ppmw volatile organics at the point of waste origination (40 CFR 264.1082(c)(1)).

The following principles set out how the EPA interprets the rule for this subpart CC exemption in specific situations:

1. Listed Waste

(A) If the waste is already subject to an LDR treatment standard for organics (for example, the organic spent solvent listed as F001), the waste is not subject to subpart CC if it meets the treatment standards for organic hazardous constituents in that waste (e.g. the treatment standards for organics in F001 set out in § 268.40);

(B) If the waste is newly listed so that no treatment standard under § 268.40 has yet been established, determine if the waste was listed for organic constituents in Part 261 Appendix VII and if so, if the waste meets the Universal Treatment Standards (UTS) for those constituents (set out in § 268.40) then the waste is exempt from subpart CC. The EPA considers the UTS to be ''applicable'' because it is clear that this is the standard which will apply when the waste is prohibited;

(C) If the waste is listed only because it contains inorganic constituents (e.g. electroplating wastewater treatment sludge (F006)), then it is not eligible for the LDR exemption at § 264.1082(c)(4) but could be exempt for other reasons, such as containing less than 500 ppmw volatile organics at the point of waste origination. This is true whether or not the waste is already a prohibited hazardous waste, or is newly listed.

2. Mixtures of Listed Wastes

The same principles as presented above apply when mixtures of listed wastes are involved:

(A) If the mixture contains listed wastes for which there are organic concentration limits in § 268.40 and newly listed wastes listed (in Appendix VII of Part 261) for organic hazardous constituents, the waste would be exempt from subpart CC if it meets the treatment standards in § 268.40 *and* the treatment standards to which the newly listed waste will be subject. Thus, to be exempt under § 264.1082(c)(4), a mixture of F001 wastes and FXXX (a hypothetical newly listed waste listed for presence of benzene) would have to meet the treatment standards for the organic hazardous constituents set out in § 268.40 for F001 plus UTS for benzene;

(B) If the mixture contains listed wastes for which there are organic concentration limits in § 268.40 and listed wastes with treatment standards only for inorganic constituents (or which is newly listed, and is listed only due to presence of inorganic hazardous constituents), the waste mixture would be eligible for the § 264.1082(c)(4) variance if it meets the organic concentration limits in § 268.40. Thus, a mixture of F001 and F006 wastes would be exempt from subpart CC if it meets the treatment standard for F001 organic hazardous constituents;

(C) If the mixture consists of listed wastes which are exclusively subject to, or are listed for, inorganic hazardous constituents, the mixture is not eligible for the § 264.1082(c)(4) exemption.

Finally, part of the ''applicable'' LDR standard for listed wastes is that the standard not be achieved by impermissible dilution (as set out in § 268.3 and several EPA interpretations, such as in 60 FR 11706–11708 (March 2, 1995)). Impermissible dilution could involve not only mixing an agent to the waste to increase volume without contributing to the treatment process, but also allowing volatilization from the waste without capture and destruction of the organic emissions. 52 FR at 25779 (July 8, 1987); *Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 17 (D.C. Cir. 1992). In essence, this means that the LDR standards need to be achieved by treatment that destroys or removes the organic hazardous constituent (or the wastes may meet the treatment standard as generated). See 60 FR 11708. The subpart CC rules likewise contain provisions prohibiting dilution as a means of making a waste eligible for an exemption from the rule (see, e.g., § 265.1083(c)(2)(vi)). Thus, to be eligible for this exemption from the subpart CC standards, listed wastes must either meet treatment standards for organics by treatment which destroys or removes hazardous organic constituents, or the wastes must meet those standards as generated.

3. Characteristic Wastes

The first principle to bear in mind regarding characteristic hazardous wastes is that the subpart CC rule no longer applies once these wastes are decharacterized, i.e., no longer exhibit a characteristic of hazardous waste. This is because the subpart CC rules only apply to wastes that are identified or listed as hazardous. See, e.g., § 265.1080(a). Also, since the rules do not prohibit any method which removes a hazardous characteristic, dilution can be used for this purpose; see § 261.3(d)(1). Thus, in the discussion that follows, it must be understood that all references to characteristic hazardous wastes are to wastes which continue to exhibit a characteristic.

Characteristic wastes can be identified because of the presence of organic hazardous constituents, but also can contain organic ''underlying hazardous constituents''—hazardous constituents present at levels exceeding the Universal Treatment Standards but which do not cause the waste to exhibit a characteristic; see § 268.2(i). Such hazardous constituents typically must be treated to meet UTS before a characteristic waste is land disposed (see *Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 16–18), and so UTS can be considered to be an applicable standard for purposes of the subpart CC exemption under discussion in this preamble.

Principles applicable to specific situations involving characteristic hazardous wastes are therefore:

(A) Since subpart CC controls do not apply to nonhazardous wastes, these standards do not apply as the result of managing decharacterized wastes.

(B) If the waste exhibits ignitability, corrosivity, or reactivity (or is a mixture which exhibits one or more of these characteristics), then the waste is exempt from subpart CC if it meets treatment standards for any of the organic underlying hazardous constituents which are present (and the waste is no longer subject to subpart CC if it no longer exhibits a characteristic, whether or not treatment standards for underlying hazardous constituents are achieved). In this example, these characteristic wastes are prohibited and subject to the requirement to treat for underlying hazardous constituents, so that these standards clearly are applicable;

(C) If the waste or waste mixture exhibits a characteristic for an organic hazardous constituent (so-called Toxicity Characteristic (TC) organic wastes), then the waste must meet the treatment standard for that constituent plus UTS for any organic underlying hazardous constituent. These are the current requirements set out in Part 268 for the waste and so are clearly applicable;

(D) If the waste or waste mixture exhibits a characteristic for a metal, the waste would be exempt from subpart CC if it meets UTS for any organic underlying hazardous constituent which may be present. This result comes from the *Chemical Waste Management* opinion cited above (although the EPA has not yet amended the Part 268 rules to reflect the court's holding with respect to these wastes), and so can be viewed as applicable standards for purposes of the subpart CC exemption.

4. Examples

A number of examples that illustrate the EPA intent and interpretation of the subpart CC LDR exemption are summarized below.

1. F001 + F006. Listed organic plus listed inorganic. Meet treatment standards for organics in F001;

2. F001 + D018. Listed organic plus organic TC. Meet treatment standards for F001, treatment standards for benzene, and treatment standards for any organic underlying hazardous constituent in the D018 waste (or eliminate the D018 characteristic before the waste is managed in a tank, container or surface impoundment, in which case only the treatment standards for F001 waste would have to be satisfied for the exemption to apply);

3. F001 + D008. Listed organic plus TC metal. Meet treatment standards for F001 plus treatment standards for any organic underlying hazardous constituents which may be present in the D008 waste (or eliminate the D008 characteristic before the waste is managed in a tank, container or surface impoundment, leaving the F001 standard as the applicable treatment standard);

4. F006 + D018 + D008. Listed inorganic, TC organic, TC inorganic. Meet treatment standard for benzene and for organic underlying hazardous constituents in D018 and D008 wastes;

5. F006. Ineligible for § 264.1082(c)(4) exemption.

There have also been questions regarding whether this LDR exemption applies to mixtures that would meet the organic constituent concentration limits specified for the hazardous wastes in the mixture but for the contribution of organic constituents from the decharacterized wastes in the mixture. The EPA interprets the rule so that the LDR exemption does not apply in these circumstances. First, the language of the rule refers to ''all hazardous waste placed in the unit'' having to meet the treatment standard, which logically means meeting the standard at the point the hazardous waste is placed in the unit. Second, it is reasonable to look at the point of mixing as a new point of waste origination in keeping with the overall thrust of the provision to reserve the exemption for wastes which actually are treated. See 54 FR at 26633 (June 23, 1989) where the EPA noted a similar view in the LDR context. The EPA also notes that this interpretation is consistent with other provisions of the rule where the Agency has indicated expressly that organic removal is to be evaluated in the context of each individual waste stream entering a treatment process. See section § 265.1083(c)(2)(v)(C).

The last issue addressed on this topic in today's preamble concerns the relationship of this exemption and treatment variances under the LDR program. The EPA notes that the exemption from subpart CC standards applies only to hazardous wastes that have been treated to meet the treatment standards set out in 40 CFR 268.40. This language excludes alternative standards which are established as part of the treatment variance process, which alternative standards are codified in 40 CFR 268.44. This distinction is intentional. As the EPA recently noted in the rulemaking amending the treatment variance standards, it is possible that a treatment variance may result in a standard which does not fully remove volatile organics to the extent contemplated in creating the subpart CC exemption. For this reason, the EPA has indicated explicitly that such wastes may remain subject to the subpart CC rules. The EPA reiterates that approach here.

The EPA is today amending the treatment demonstration provision for valuing waste analysis results below the limit of detection for an analytical method. In response to comments, EPA is today revising paragraphs (A) and (B) of § 264.1082(c)(2)(ix) and § 265.1083(c)(2)(ix). The change to paragraph (A) is being made in recognition that a relatively high blank value for Method 25D does not necessarily indicate that a waste stream has failed to meet the treatment demonstration requirements of § 265.1083(c)(2)(i) through (vi). The blank value required in paragraph 4.4 of EPA Reference Method 25D (codified in appendix A to 40 CFR part 60) is an indication of the organics contained in the Polyethylene Glycol, not the organics in the waste. For a Method 25D analytical result, the method instructs the operator to report the value of the instrument results minus the blank value. In a circumstance that the instrument results are higher than the blank value, the reported Method 25D result would not be non-detect, but rather, would be a numerical concentration value. In circumstances that the instrument results are equal to the blank value, the reported result would be non-detect. In the circumstance resulting in a non-detect, the Agency does not consider it appropriate to require the facility owner or operator to compare the treatment results of paragraphs (c)(2)(i) through (vi) in § 264.1082 and § 265.1083 to one-half of the blank value, as was required by the regulatory requirement being revised today. Therefore, the Agency is adding a provision that allows the facility owner or operator to substitute a value of 25 ppmw for a non-detect Method 25D result, if one-half the Method 25D blank value is more than 25 ppmw. The Agency has selected the value of 25 ppmw because it represents 95 percent reduction of organics in a waste stream of 500 ppmw, the required percent reduction for a waste stream with a VO concentration equal to the action level for the subpart CC standards.

No default value similar to the 25 ppmw value described here is included in the provisions for non-detect results in waste determinations performed to determine whether the hazardous waste is below 500 ppmw at its point of waste origination. See 265.1084(a)(3). Such a provision is necessary in situations where an owner or operator is attempting to demonstrate a process has achieved 95 percent reduction of organics, because the concentration of the stream exiting the process unit may need to be demonstrated to be as low as 25 ppmw. Such is not the case with waste determinations performed to demonstrate that the hazardous waste stream is below the subpart CC action level of 500 ppmw, where the waste determination need only demonstrate that the waste is below 500 ppmw. The valuing of non-detects for waste determinations performed at the point of waste origination is discussed further in the following section of this preamble.

The EPA is revising paragraph (B) of § 264.1082(c)(2)(ix) and § 265.1083(c)(2)(ix) to clarify the Agency's intent that the level of detection for an analytical method other than method 25D is the sum of the limits of detection for each of the regulated compounds in the waste sample. As previously written, the provision did not clearly indicate that for purposes of this subpart, only the detection limits for organic compounds with Henry's Law greater than or equal to 0.1 Y/X are required to be summed, to establish the limit of detection for an analytical method.

The EPA is also adding a reference to organic hazardous constituents in paragraph (c)(4)(ii) of § 264.1082 (which applies when the LDR standard is a designated method of treatment), to make clear that this provision requires treatment of organics. With this revision, § 264.1082(c)(4)(ii) now conforms to § 264.1082(c)(4)(i). A conforming change is being made to the requirement for interim status facilities, at § 265.1083(c)(4)(ii).

D. Waste Determination Procedures

Paragraphs in § 264.1083(a)(2) and § 265.1084(a)(2) are revised by changing ''The average VO concentration of a hazardous waste at the point of waste origination may be determined * * *'' to read as follows: ''For a waste determination that is required by paragraph (a)(1) of this section, the average VO concentration of a hazardous waste at the point of waste origination may be determined * * *'' This waste determination requirement was explained in Section VII.A.3, *Waste Determination Procedures*, of the preamble to the final rule (59 FR 62915, December 6, 1994) as follows: ''A determination of the volatile organic concentration of a hazardous waste is required by the subpart CC standards only when a hazardous waste is placed in a tank, surface impoundment, or container subject to the rule that does not use air emission controls in accordance with the requirements of the rule. A TSDF owner or operator is not required to determine the volatile organic concentration of the waste if it is placed in a tank, surface impoundment, or container using the required air emission controls.'' Consistent with this statement, the EPA is slightly revising the current rule to make clear that the average VO concentration determination is required only for hazardous waste placed in a unit not using subpart CC air emission controls and not otherwise exempt from using subpart CC air emission controls.

Today's action also revises § 265.1084(a)(3)(ii)(B) to clarify the EPA's intent regarding the number of samples required for a waste determination. The amended paragraph states (as did the published rule language at § 265.1084(a)(5)(iv)(A) (see 59 FR 62939, December 6, 1994)), that the average of four or more sample results constitutes a waste determination for the waste stream. This amended paragraph further clarifies that one or more waste determinations may be needed to represent the average VO concentration over the complete range of waste compositions and quantities that occur during the entire averaging period (due to normal variations in the operating conditions for the source or process generating the hazardous waste stream). Therefore, to determine the average VO concentration of a waste stream generated by a process with large seasonal variations in waste quantity, or fluctuations in ambient temperature, several waste determinations (of four or more samples each) will be required.

The affected public has been fully informed of the EPA's intent regarding the fact that four samples constitute a waste determination, and that one or more waste determinations may be needed to characterize the waste stream's VO concentration over the averaging period. To inform the public of the technical requirements and compliance options in the amended subpart CC RCRA air rules, the EPA conducted a series of six seminars during August and September of 1995 and an additional six seminars during August through November of 1996. During these seminars, the EPA presented a thorough discussion of the details associated with making a waste determination. (Refer to EPA RCRA Docket No. F–95–CE3A–FFFFF, Item No. F–95–CE3A–S0017 and Docket No. F–96–CE3A–FFFFF.)

In another clarifying revision, in each citation of Method 8260(B) and Method 8270(C) in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, the reference to version (B) or (C) is being deleted by today's action. The citations that are being revised were added by the November 25, 1996, final rule amendments (61 FR 59932) to the following paragraphs of § 265.1084: (a)(3)(iii), (a)(3)(iii)(F), (a)(3)(iii)(G), (b)(3)(iii), (b)(3)(iii)(F), and (b)(3)(iii)(G).

It was the EPA's intent that the current version of each of these methods, as applicable to the waste being measured, be used in making a waste determination, not necessarily the specific versions cited. At the time the November 25, 1996 amendments were published, the versions 8260(B) and 8270(C) were only proposed methods; the published versions were 8260(A) and 8270(B). Specifying these particular versions was an inadvertent error, which is being corrected by today's action. As was stated in Section IV.F, *Waste Determination Procedures*, of the preamble to the final rule amendments (61 FR 59942, November 25, 1996), after extensive review, the EPA decided that as alternatives to using Method 25D for direct measurement of VO concentration in a hazardous waste for the subpart CC RCRA air rules, it was appropriate to add Methods 624, 625, 1624, and 1625 (all contained in 40 CFR part 136, appendix A) and Methods 8260(B) and 8270(C) (both in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'' in EPA publication SW–846) when these methods are used under certain specified conditions. It was noted that for each of these methods, there is a published list of chemical compounds which the EPA considers the method appropriate to measure. The owner or operator may only use these methods to measure compounds that are contained on the list associated with that method, unless specified validation procedures are also performed. It was further noted that for the purpose of a waste determination, the owner or operator must evaluate the mass of all VO compounds in a waste that have Henry's Law value above the 0.1 Y/X value. Therefore, it is the EPA's position that the owner or operator is responsible for determining that the analytical method being used for a waste determination is sufficient to evaluate all of the applicable organic compounds that are contained in the waste.

(**Note:** Today's action includes a revised list of known compounds with a Henry's Law value less than or equal to 0.1 Y/X, contained in appendix VI of subpart 265; the revisions correct typographical errors, and format the list to be alphabetical.)

Also in today's action, a printing error that placed § 265.1084(a)(3)(iii)(A) at the end of § 265.1084(a)(3)(iii) has been corrected. In addition, in the November 25, 1996 final rule amendments, because of a typographical error in § 265.1084(a)(3)(iii)(G), the words ''introduction and analysis'' were omitted from the sample handling steps for which site-specific procedures must be documented in the quality assurance program to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption. Today's amendments revise § 265.1084(a)(3)(iii)(G) to read as follows: ''Documentation of site specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.''

Several commenters have stated that the subpart CC provisions for treatment of non-detect values in the analysis of treated waste samples, contained in §§ 264.1082(c)(ix) and 265.1083(c)(2)(ix), should also apply to waste determinations at the point of waste origination, for purposes of determining compliance with the 500 ppmw VO concentration action level of the standards. Commenters requested

this application of the non-detect policy to waste determinations because a waste determination consists of the average of four or more samples, and some of the samples analyzed may yield results that are below the analytical method's limit of detection. The commenters' concern is the same rationale that led EPA to amend the provisions at sections 264.1082 and 265.1083 in the November 25, 1996 final rule amendments; without such a provision, the owner or operator does not have a way to assign a numeric value for a non-detect reading, when computing the average of four or more waste samples to calculate a waste determination. The same logic applies to both circumstances, and it was obviously an oversight that EPA did not include this provision in the November 25, 1996 final rule amendments. Thus, the EPA is today adding to the waste determination provisions at § 265.1084(a)(3)(iv), a provision for valuing non-detect analytical results. The new rule language provides the appropriate guidance on the valuing of non-detects in the calculation of the average of four or more samples for a waste determination.

(**Note:** A corresponding amendment is not required at § 265.1084(b)(3)(iv) for treated hazardous waste because those rules, specifically § 264.1082(c)(2)(ix) and § 265.1083(c)(2)(ix), contain provisions for valuing non-detects when determining performance of an organic destruction or removal process.)

The EPA today is also amending regulatory language to reflect a clarification that was addressed in the November 25, 1996 rulemaking preamble (61 FR at 59943), but was inadvertently omitted from the regulatory text. This amendment adds two new paragraphs to the waste determination provisions, § 265.1084 (a)(3)(v) and (b)(3)(v), to state that EPA would determine compliance with the subpart CC regulations based on the same test method used by the facility owner or operator, provided the owner or operator had used a test method appropriate for the waste. The appropriateness of an analytical method is described in paragraphs § 265 (a)(3)(iii) and (b)(3)(iii), respectively. The November 25, 1995 preamble to the final rule amendments (61 FR 59943) stated that, ''* * * as long as one of the allowable test methods is being used for direct measurement of the VO concentration of a hazardous waste, the EPA would only enforce against the facility on that basis (i.e., using the same test method), unless the method used is not appropriate for the hazardous waste managed in the unit.'' Today's amendments add a paragraph to the analysis section of the final rule's waste determination procedures at § 265.1084 (a) and (b) to codify this intended provision.

As published in the November 25, 1996 final rule amendments (61 FR 59975), paragraph 265.1084(a)(4)(iv) provides that the results of a direct measurement of average VO concentration shall be used to resolve a disagreement between the Regional Administrator and the owner or operator regarding a determination of the average VO concentration of a hazardous waste stream using knowledge. To clarify that in such cases where there is disagreement regarding use of knowledge, the owner or operator has the discretion to choose an appropriate test method or methods, the following sentence has been added to § 265.1084(a)(4)(iv): ''The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of paragraph (a)(3)(iii) of this section.''

The EPA is also clarifying the waste determination requirements for treated wastes. Prior to today's amendment, the subpart CC regulatory text required analysis of all treated waste. As explained below, a waste determination is unnecessary for a waste treated by either a boiler or industrial furnace (BIF) operated in accordance with subpart H to 40 CFR part 266, or a hazardous waste incinerator operated in accordance with subpart O to 40 CFR parts 264 or 265; the EPA is amending the rule to clarify this. Today's action revises paragraph (b)(1) of §§ 264.1083 and 265.1084 to require that the owner or operator perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of paragraphs (c)(2)(i) through (c)(2)(vi) of §§ 264.1082 and 265.1083, respectively. Those specific paragraphs are cited in today's amended rule language to clarify that a waste determination is only required for a hazardous waste placed in a waste management unit exempted under one of the treatment demonstration options that is a performance standard, as opposed to an equipment specification standard. As was noted in Section VII.A.2.b, *Treated Hazardous Waste*, of the final rule preamble (59 FR 62914, December 6, 1994), provisions for hazardous waste treatment are specified in the subpart CC standards for the following processes: (1) An organic destruction, biological degradation, or organic removal process that reduces the organic content of the hazardous waste and is designed and operated in accordance with certain conditions specified in the rule; (2) a hazardous waste incinerator that is designed and operated in accordance with the requirements of 40 CFR part 264 subpart O or 40 CFR part 265 subpart O; or (3) a BIF that is subject to the requirements of 40 CFR part 266 subpart H.

Under today's amendments to the rule, the EPA is clarifying its original intent, that a waste determination is required only for a treated hazardous waste placed in a waste management unit, if the unit is exempt from air emission control requirements under provisions contained in paragraphs (c)(2)(i) through (c)(2)(vi) of §§ 264.1082 and 265.1083. The EPA requires waste demonstrations for those treatment demonstration options to ensure that the treatment conditions specified in subpart CC have been met. As explained in the December 1994 final rule preamble (59 FR at 62914, December 6, 1994), the waste demonstration results are required to indicate that a sufficient mass of organic constituents have been removed or destroyed from a regulated waste stream, prior to it being placed in a hazardous waste management unit that is not equipped with air emission controls. The treatment demonstration options listed in paragraphs (c)(2)(i) through (viii) of §§ 264.1082 and 265.1083 are based on the treatment process achieving a 95% reduction by weight of organic constituents in the waste. For the provisions of (c)(2)(i) through (c)(2)(vi) of §§ 264.1082 and 265.1083, the treatment process is not specified in the regulation; rather the requirement is based on the removal efficiency of the treatment process. Thus, to demonstrate compliance, EPA considers it necessary that the owner or operator perform waste determinations to demonstrate the appropriate removal efficiency has been achieved. However, the treatment demonstration provisions of paragraph (c)(2)(vii) in §§ 264.1082 and 265.1083 require that the hazardous waste be treated in an incinerator that is designed and operated in accordance with the requirements of subpart O in 40 CFR part 264 or part 265; and the treatment demonstration provisions of paragraph (c)(2)(viii) in §§ 264.1082 and 265.1083 require that the hazardous waste be treated in a BIF that is designed and operated in accordance with the requirements of 40 CFR part 266, subpart H. The EPA considers compliance with those combustion standards to be sufficient demonstration that the organics in the waste will be destroyed by 95 percent or more, by weight, and does not consider a waste

determination necessary. The EPA has consistently given verbal guidance that waste determinations are not required for waste treated in the above-mentioned specific units, and is today making an amendment to the regulatory text to make the regulatory requirements consistent with this guidance.

In a further clarification, the EPA intended that the owner or operator use the same test method to determine the average VO concentration at the point of waste treatment as is used at the point of waste origination, if these values are to be used to determine the effectiveness of a treatment system. As was stated in Section IV.F, *Waste Determination Procedures*, of the preamble to the final rule amendments (61 FR 59942, November 25, 1996), ''The main point that must be reemphasized regarding direct measurement of VO concentration is that, although the EPA is amending the rule to allow various test methods other than Method 25D to be used in a waste determination, the owner or operator must use a test method(s) that is appropriate for the compounds contained in the waste. The method(s) used for the waste determination must be suitable for and must reflect or account for all compounds in the waste with a Henry's Law constant equal to or greater than 0.1 Y/X at 25 degrees Celsius.''

Since the effectiveness of a waste treatment process must be judged on the basis of the process's capacity to reduce the organics in waste relative to their concentration at the point of waste origination or at the point of entry to the treatment system, the method(s) used for the waste determination at the point of waste treatment must be appropriate to detect and measure the compounds in the waste at the point of waste origination; to put the measurements on a common basis and provide an accurate comparison, the EPA considers it necessary that the method(s) used at the point of waste origination must be the same as the method(s) used at the point of waste treatment. To clarify this requirement, which the EPA has heretofore considered implicit, the following sentence is being added to § 265.1084(b)(3)(iii): ''When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system, to determine if the conditions of § 264.1082(c)(2)(i) through (c)(2)(vi) or § 265.1083(c)(2)(i) through (c)(2)(vi) are met, then the waste samples shall be prepared and analyzed using the same method(s) as were used in making the initial waste determination(s) at the point of waste origination or at the point of entry to the treatment system.'' (Only the waste determination provisions in part 265 are being revised in connection with this rule clarification and the following rule clarification, because the subpart CC waste determination protocols are contained in part 265, and the part 264 standards cross-reference part 265.)

Because of a printing error, the equations for calculating the actual organic mass removal rate in § 265.1084(b)(8)(iii) and for calculating the actual organic mass biodegradation rate in § 265.1084(b)(9)(iv) were out of place in the November 25, 1996 amendments (61 FR 59978). This document corrects the placement of these equations.

In a further clarification to the waste determination procedures of subpart CC, paragraph 265.1084(d)(5)(ii) required that a mixture of methane in air at a concentration of approximately, but less than, 10,000 ppmw be used to calibrate the detection instrument used to determine no detectable organic emissions. It was the EPA's intent that the calibration procedure be consistent with the procedure specified in the subpart BB equipment leak test methods and procedures at §§ 264.1063 and 265.1063, as they reference the same monitoring procedure. Paragraph (b)(4)(ii) of §§ 264.1063 and 265.1063 specifies that calibration gases for the detection instrument shall be, ''A mixture of methane or n-hexane and air at a concentration of approximately, but less than 10,000 ppm methane or n-hexane. Consistent with this requirement, today's action revises the requirement for calibration gases in parts 264 and 265 to provide the owner or operator the choice of using a mixture of methane or n-hexane and air.

E. Standards: Tanks

Commenters have questioned whether a facility owner or operator is permitted to install a closure device on a tank manifold system or header vent when a series of tanks have their vents (i.e., tank openings) connected to a common header. In many tanks systems, tank vents are connected to a manifold or central header, and a closure device (or pressure/vacuum device such as a conservation vent) is installed on the header rather than on the individual tanks. Prior to today's amendment, the subpart CC level 1 tank requirements at paragraph (2)(2)(iii) in § 264.1084 and § 265.1085 could have been interpreted to require that each opening on a Level 1 tank fixed roof must be either equipped with a closure device or connected through a closed-vent system to a control device, with no allowance for the closure device or pressure/vacuum device to be installed on the tank manifold system. The EPA did not intend the regulatory requirement to disallow a closure device or pressure/vacuum device from being installed on a tank manifold system. The EPA is aware that such tank manifold or vent header systems provide a degree of emissions reduction which is derived from vapor balancing between tanks during unloading and inter-tank transfers; the EPA clearly did not intend to discourage their use. The EPA is therefore amending the subpart CC tank standards to provide that a closure device can be installed on a manifold vent header for Level 1 tanks, by revising paragraph (c)(2)(iii) in § 264.1084 and § 265.1085.

In the November 25, 1996 final rule amendments, the EPA promulgated a provision that allowed a facility to install and operate air emission control devices on Level 1 tanks. As published, the regulatory language for that provision inadvertently made it mandatory that these control devices be operating at all times when hazardous waste is managed in the tank, even at times of routine maintenance. The EPA is amending the rules today to clarify that the control device is not required to be operating during specified periods, including those instances it is necessary to provide access to the tank for performing routine inspections, maintenance, or other activities needed for normal operations. Examples of such activities include those times when a worker needs to open a port or hatch to maintain or repair equipment. Paragraph (B) is being revised in § 264.1084(c)(2)(iii) and § 265.1085(c)(2)(iii) to better convey this intent.

In the amendments to the final rule published on November 25, 1996 (61 FR 59944), the preamble at Section G. *Standards: Tanks* that discussed the revisions to the subpart CC tank standards, stated ''* * * an option is being provided allowing the use of an enclosure vented through a closed-vent system to an enclosed combustion device or a control device designed and operated to reduce the total organic content of the inlet vapor stream by at least 95 percent by weight,'' in order to comply with the tank level 2 air emission control requirements. However, the latter portion of this statement was incorrect and the EPA is clarifying that it was the EPA's intent that only enclosed combustion devices can be used as control devices under this alternative to comply with the Tank

Level 2 air emission control requirements. It should also be noted that the regulation as amended by the November 25,1996 **Federal Register** document (at §§ 264.1084(d)(5) and 265.1085(d)(5)) was correct and did not contain the statement regarding the use of a (non-combustion) ''control device designed and operated to reduce the total organic content of the inlet vapor stream by at least 95 percent by weight.'' Since publication of the November 25, 1996 preamble, the EPA has consistently and repeatedly provided verbal clarification in all forums where the subject of level 2 tank enclosures has been raised, that the noted preamble text is incorrect, and that level 2 tanks operated inside an enclosure must be vented to an enclosed combustion device. The EPA provided this information publicly at each of the six seminars EPA conducted in September through December of 1996; additionally, an industry trade association provided this same clarification at the two seminars the industry trade group conducted in March and April of 1997 (these seminars are discussed in the Background section of today's preamble). Additionally, the requirement for enclosed combustion devices on level 2 tank enclosures was strongly affirmed in the accompanying printed materials for each of these EPA and industry trade group seminars; those printed materials were distributed to all seminar attendees, and to additional members of EPA and the regulated community, for informational purposes and peer review. Further, the RCRA Hotline has been clarifying the regulatory text requirement for enclosed combustion devices to callers who have raised the topic to Hotline representatives. The requirement for enclosed combustion devices on level 2 tank enclosures is not being amended by today's action. However, the EPA is currently considering a future amendment to this requirement that would allow owners or operators to operate a Level 2 tank enclosure vented to an alternate control device, provided they make certain site-specific demonstrations. The reason EPA currently requires enclosure emissions to be vented to an enclosed combustion device is because organic concentrations in air within the enclosure are very dilute, due to the inherent dilution in the enclosure, and are often less than 100 ppm organics by volume. It is not clear to the EPA that control devices other than enclosed combustion devices, can reduce organics in such a dilute vent stream by the 95 percent control efficiency required the subpart CC standards. The EPA has agreed to investigate the possibility whereby a facility could make a case-by-case demonstration of a non-combustion control device efficiency; the EPA would require the demonstration to show that a mass of organics would be removed from a given waste, using a particular enclosure and control device, equivalent to 95 percent reduction of organics in the tank headspace, if the tank were to be equipped with a discreet cover. Though such a demonstration would likely be fairly detailed and costly, commenters have indicated that they would be interested in pursuing such an option if it were included in the subpart CC tank enclosure requirements. The EPA considers that such an equivalency would be consistent with the existing tank standards; if a technically feasible and verifiable equivalency demonstration technique can be developed, this could be a reasonable alternative to the requirement for enclosed combustion devices under the Level 2 tank enclosure control option. The EPA will continue to investigate this option, and if a viable approach can be developed, will publish a future amendment to incorporate it into the subpart CC Level 2 tank standards.

The EPA has received inquiries as to whether doors are allowed to be open on level 2 tank enclosures, and how doors are regarded under the provisions for natural draft openings (NDO) in the ''Procedure T—Criteria for and Verification of a Permanent or Temporary Total Enclosure'' under 40 CFR 52.741, appendix B (''Criteria T'') requirements. The Criteria T evaluation of NDO is intended to evaluate the effectiveness of the enclosure at capturing emissions from within the enclosure. Therefore, for purposes of Criteria T, the evaluation of the enclosure must be conducted on the enclosure as it is operated during hazardous waste management operations. If the enclosure has a door that is closed during waste operations, then the open doorway would not be considered an NDO; however, cracks or openings that exist around the door when it is closed would be considered NDO. Doors on enclosures are often very large, to accommodate waste transportation vehicles; thus, the effectiveness of an enclosure is severely altered by the positioning of such a door. Obviously, if a door is normally open during times when hazardous waste is managed in the enclosed tank, the open doorway would be considered an NDO.

By this clarification, the EPA is not precluding the opening of enclosure doors. The EPA considers it appropriate to allow enclosure doors to be open for the same circumstances that tank covers can be open under paragraph 265.1085(g)(2)(i)(A) and similar paragraphs for tanks equipped with fixed roofs—when necessary to provide access to the tank for performing routine inspection, maintenance, or other activities needed for normal operations. Also commensurate with paragraph 265.1085(g)(2)(i)(A), following completion of the activity, the owner or operator should promptly secure the door in the position it was in during the evaluation of the NDO.

It also warrants clarification that the enclosure door (and other openings not accounted for as Criteria T NDO) must be closed at all times that hazardous waste is managed in the enclosed tank (unless the tank is exempt from subpart CC air emission control requirements), not just when waste is being treated in the tank. The EPA considers it inherently obvious within the tank standards that the enclosure around a tank must be operated in the same manner in which it was evaluated for the Criteria T requirements. Specifically, paragraphs § 264.1084(i)(1) and § 265.1085(i)(1) require that the enclosure be designed and operated in accordance with the Criteria T.

The EPA recognizes that it is not feasible to require all waste transfer to and from a tank enclosure to be conducted by enclosed transfer systems. However, the EPA does consider it reasonable to interpret the provisions of § 264.1084(i)(1) and § 265.1085(i)(1) to require that the enclosure be operated in the same manner in which it was evaluated for compliance with Criteria T. Thus, the EPA is clarifying that enclosure doors and other openings not evaluated as NDO shall be closed when hazardous waste is managed inside the enclosure, except when it is necessary to open the door or opening for waste transfer, equipment access, or worker access.

In the December 6, 1994 final regulation, the regulatory text at §§ 264.1084(g) and 265.1085(g) allowed that an owner or operator may install and operate a safety device on tank covers, closed-vent systems and control devices. The amendments published on November 25, 1996 amended the tank requirements; in those amendments, the provision for safety devices was inadvertently omitted from the tank requirements for floating roof covers. Today's action adds new paragraphs 264.1084(e)(4), 264.1084(f)(4), 265.1085(e)(4), and 265.1085(f)(4) stating that safety devices are allowed

on both internal and external floating roof tank covers.

Today's action amends § 264.1084(f)(3)(iii) to correct a typographical error. The sentence ''Prior to each inspection required by paragraph (f)(3)(i) or (f)(3)(ii) of this subpart * * *'' is revised to read as follows, ''Prior to each inspection required by paragraph (f)(3)(i) or (f)(3)(ii) of this section * * *'' Also, to correct another typographical error in § 264.1084(f)(3)(i)(D)(*4*) and § 265.1085(f)(3)(i)(D)(*4*), the phrase ''* * * and then dividing the sum for each seal type by the nominal perimeter of the tank.'' is revised to read as follows ''* * * and then dividing the sum for each seal type by the nominal diameter of the tank.''

In the November 25, 1996 final rule amendments (61 FR 59932), an exemption from the control requirements of subpart CC was added for a tank, surface impoundment, or container for which all the hazardous waste placed in the unit meets the Land Disposal Restrictions (LDR) as specified in §§ 264.1082(c)(4) and 265.1083(c)(4). However, the EPA inadvertently failed to add this exemption based on meeting applicable LDR treatment standards to the exemption from the closed system transfer requirements. Today's change adds paragraph (iii) under §§ 264.1084(j)(2) and 265.1085(j)(2) to correct this oversight. It was originally the EPA's intent to make this conforming amendment for closed system transfer requirements in the November 25, 1996 action. The basic structure of the subpart CC rule is that once a hazardous waste is subject to the provisions of the rule, all containers, tanks, and impoundments managing the waste are subject to the rule's requirements. However, once a waste is treated to destroy or remove organics in a manner specified in the rule, downstream tanks, containers, and surface impoundments are not subject to the subpart CC air requirements to operate the units with covers and/or control devices.

(Note: Recordkeeping, monitoring, reporting and testing requirements may apply to those downstream units.) See Section VII.A.2.b, *Treated Hazardous Waste*, of the preamble to the final rule (59 FR 62914, December 6, 1994). The EPA inadvertently failed to codify this core principle for closed system transfer and is correcting the omission in today's rule.

F. Standards: Surface Impoundments

Today's action corrects a typographical error in §§ 264.1085(b)(2) and 265.1086(b)(2) by revising the phrase ''* * * paragraph (d) of this sections.'' to read ''* * * paragraph (d) of this section.'' Also, the EPA is clarifying the requirements of §§ 264.1085(d)(1)(iii) and 265.1086(d)(1)(iii) by making a non-substantive editing change. ''Factors to be considered when selecting the materials for * * *'' is redrafted to read ''Factors to be considered when selecting the materials of construction * * *'' To correct another typographical error in §§ 264.1085(d)(2)(i)(B) and § 265.1086(d)(2)(i)(B), ''To remove accumulated sludge or other residues from the bottom of surface impoundment.'' is revised to read, ''To remove accumulated sludge or other residues from the bottom of the surface impoundment.''

As is discussed regarding tanks, in Section E of this preamble, the EPA inadvertently failed to add the exemption for hazardous wastes that have been treated to meet applicable LDR treatment standards to the exemption from the closed system transfer requirements for hazardous waste that is transferred to a surface impoundment. Today's action adds this exemption to the exemptions from closed system transfer requirements in §§ 264.1085(e)(2)(iii) and 265.1086(e)(2)(iii).

G. Standards: Containers

The EPA has received comments from the regulated community regarding the inspection requirements for containers; these comments clearly indicate a wide-spread misinterpretation of the rule requirements relevant to container inspections. Numerous commenters referenced in their statements to the EPA that the language in § 264.1086(c)(4)(i) and (d)(4)(i), and the corresponding paragraphs in 40 CFR part 265, require a visual inspection to occur within 24 hours after acceptance of each regulated container which is transported to a regulated facility and which contains hazardous waste at the time it arrives at the facility. They also noted that the requirement for an inspection to be conducted within a 24-hour time frame is unnecessarily burdensome in some limited and infrequent situations.

The visual container inspection requirement is intended to provide means for the facility owner or operator to ensure that the container has no visible openings or gaps through which organics could be emitted; see Section IV.I.3 of the preamble, 61 FR 59948, November 25, 1996. The amended container regulations published November 25, 1996, did not specify the time frame in which the initial visual inspection must be conducted. The regulation states, ''In the case when * * * the container is not emptied (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)) within 24 hours after the container is accepted at the facility, the owner or operator shall visually inspect the container * * *'' The 24-hour period in the rule language refers to the time limit on emptying the container that triggers the visual inspection; the rule language in § 265.1087(c)(4)(i) and (d)(4)(i), and the corresponding paragraphs in 40 CFR part 265, as published in November 1996, do not specify the time frame in which the visual inspections must be conducted. However, it is the intent of the EPA that the initial inspection be subject to the same time requirements as were set out in the December 6, 1994, final regulation (see 40 CFR 265.1089(f)(1) of the December 6, 1994 published regulation (at 59 FR 62947)). Specifically, the container inspection must be conducted on or before the date that the container is initially subject to the subpart CC container standards. Thus, for a container with hazardous waste that is transported to a regulated facility, the inspection of the container is required on or before the date that the container is accepted at the facility.

In those situations where it would be infeasible to inspect a container on the date it is accepted at the facility, for the purpose of compliance with the subpart CC container standards, it would be acceptable for the container to be inspected prior to that date. For example, if an owner or operator of an affected facility accepts a shipment of containers that arrives at the TSDF on a truck, and the TSDF owner or operator is unable to conduct a visual inspection of the containers at the time of acceptance of the container shipment, it is acceptable under the rule to have the generator or transporter perform the visual inspection of the individual containers before or during loading of the containers onto the truck for transport to the affected facility. The transporter or generator could provide the recipient TSDF with some level of information (e.g., written documentation) to confirm the inspection has been conducted on or before the date that the container is accepted at the facility. It is likely that the TSDF owner or operator would then perform their own visual inspection when possible, (e.g., at the time that the containers are unloaded from the truck at the TSDF). The EPA considers the use of generator or transporter supplied information to comply with the visual inspection requirements similar to owner or operator use of generator

information regarding the organic content of a hazardous waste as a means to comply with the waste determination (i.e., VO concentration determination) requirements of the rule. It should be noted that in either case, it is ultimately the responsibility of the owner or operator of the affected facility to be in compliance with all the applicable regulatory requirements. The EPA is amending the language in § 264.1086(c)(4)(i) and (d)(4)(i), and the corresponding paragraphs in 40 CFR part 265, to clarify that the 24-hour period noted in the rule refers to the time frame for emptying a container, and that this 24-hour criterion then triggers the need for a visual inspection that must be conducted on or before the date that the container is accepted at the facility.

The amendment to §§ 264.1086 (c)(4)(i) and (d)(4)(i), and the corresponding language in part 265, also clarify the phrase ''accepted at the facility.'' For the purposes of this inspection requirement for containers, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest of the appendix to 40 CFR part 262 (EPA Form 8700–22), as required under subpart E of this part, at § 264.71 and § 265.71. The instructions to EPA Form 8700–22 at Item 20, Facility Owner or Operator: Certification of Receipt of Hazardous Materials Covered by This Manifest Except as Noted in Item 19, state, ''Print or type the name of the person accepting the waste on behalf of the owner or operator of the facility. That person must acknowledge acceptance of the waste described on the Manifest by signing and entering the date of receipt.'' The EPA considers acceptance of the waste to occur at the time of manifest signature. This has been the EPA's consistent interpretation of this phrase, and is the guidance that EPA has supplied both verbally and in written seminar materials.

The EPA has received questions regarding when the opening of a cover or closure device is allowed on containers. Several of these questions have concerned the opening of the vent on vacuum trucks during loading operations and the opening of containers vents to allow venting of vapors for the purpose of worker safety. With regard to vacuum trucks, the EPA has always intended the subpart CC final rules to allow containers to vent emissions directly to the atmosphere during filling operations. This would include use of a vacuum system to fill a tank truck (i.e., a container under RCRA). Although the December 6, 1994 final rules only allowed the opening through which waste was transferred to be open during waste transfer, this was inadvertent; the EPA intended to allow venting during waste transfer operations, either through the opening through which the waste is transferred, or through a second opening that would serve as a vent. To this effect, the EPA amended the subpart CC rules on February 9, 1996 to clarify this point (see 61 FR 4909). The fact that EPA is not requiring control of vacuum trucks is also discussed in the document *Hazardous Waste Treatment, Storage, and Disposal Facilities—Background Information for Promulgated Organic Air Emission Standards for Tanks, Surface Impoundments, and containers;* see EPA–453/R–94–076b, November 1994, Section 6.6.5. where it is clear that the EPA is fully aware that a practical means of controlling the exhaust from the vacuum pump on a vacuum truck has not been demonstrated. The EPA is now reiterating that these types of systems are allowed under the subpart CC container rules.

In response to commenters, EPA is providing clarification that venting of containers for worker safety is also allowed under the subpart CC container rules. Provision (iii) of §§ 264.1086(c)(3) and 265.1087(c)(3), which allows opening of a closure device or cover when access inside is needed, would allow the owner or operator to vent a container prior to sending a worker into a tanker or other container for clean-out. This type of venting is necessary to avoid an unsafe condition when entering a confined space. For example, venting both before and during the cleaning operations is needed to reduce the organic vapor concentration below the lower explosive limit (LEL) for worker safety. In addition, provision (v) of §§ 264.1086(c)(3) and 265.1087(c)(3), which allows opening of a safety device at any time clearly shows the EPA intent regarding the implementation measures necessary to avoid an unsafe condition. The EPA considers that the current rule language allows this type of venting for maintenance of worker safety, and is providing this preamble discussion in response to requests from commenters.

An additional interpretive clarification is required, regarding the transfer requirements to, from, and among hazardous waste containers, specifically when transfers occur in conjunction with hazardous waste stabilization operations.

The first clarification addresses whether the addition of sorbent materials is considered to be waste stabilization for the purposes of compliance with subpart CC, and thus, whether such activities are required to be conducted in containers equipped with level 3 controls. There has been specific inquiry as to whether the subpart CC level 3 container standards apply in situations where an owner or operator ''transfers'' hazardous waste from one container, such as a bulk container or roll off box, to a second unit, and adds the sorbent to the waste after each scoop of waste is placed in the second unit. The container standards at § 264.1086(b)(2) state that, ''* * * the owner or operator shall control air pollutant emissions from the container in accordance with the Container Level 3 standards specified in paragraph (e) of this section at those times during the waste stabilization process when the hazardous waste in the container is exposed to the atmosphere.'' In its definition of waste stabilization at 40 CFR 265.1081, the EPA has stated that stabilization includes the elimination of free liquids, but does ''not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.'' The associated preamble language clearly defined what activities EPA was excluding from the waste stabilization definition. See 61 FR at 4905, February 9, 1996. That preamble discussion stated, ''The EPA is also amending the term ''waste stabilization'' to specifically exclude the process of adding non-reactive absorbent material to the surface of a waste. The EPA recognizes that to meet certain criteria under the Land Disposal Restrictions, or to prevent the introduction of liquid into certain combustion devices, owners or operators apply absorbent material to the surface of wastes just prior to disposal. In such procedures, the container is opened, absorbent material is placed on the surface of the waste to absorb a relatively small amount of liquid, and the container is closed. No mixing or agitation is involved in the process.''

It is clear from the text of the regulation, as well as the February 9, 1996 preamble discussion, that addition of absorbent, even with very limited mixing or agitation, must be performed in compliance with the container level 3 standards. In fact, this is the literal meaning of the provision—such ''transfer'' operations result in mixing of the sorbent material with the waste, a condition that qualifies as waste stabilization under subpart CC, and requires container level 3 controls. (See also the discussion of the EPA's intentions regarding requirements for containers in the February 9, 1996

preamble at 61 FR 4903, which makes clear that a hazardous waste transfer operation conducted as described above would not satisfy the EPA's stated intent with regard to the general transfer requirements of the container standards. Therefore, the type of transfer operation described above can only occur if the containers meet the container level 3 requirements. The EPA repeats that this requirement has a sound environmental basis. Containers would remain open to the environment during such operations, and the volatile hazardous constituents will be released. The reaction of the sorbent materials with the hazardous waste would, in fact, be likely to increase the volatilization of the organics in the waste, while the container would remain uncovered as subsequent layers of waste and sorbent were applied. Such a situation would result in organic emissions that the EPA considers most appropriately controlled under the container level 3 requirements, and the rules so require.

The EPA recognizes, however, that there are circumstances where addition of sorbent is not stabilization and therefore will not trigger subpart CC container standards. This is why the rule states that stabilization ''does not include the adding of absorbent materials to the surface of a waste, without mixing, agitation, or subsequent curing, to absorb free liquid.'' The chief example EPA has provided of such an activity is addition of sorbent just prior to the final disposition of the material (the situation given in the February 9, 1996 preamble discussion). Other examples would involve situations where tanks are covered immediately after addition of sorbent and stay covered thereafter.

Examples could occur when sorbent is added to a container at the end of a work day, or at the final completion of a waste transfer. The EPA's technical basis for allowing sorbent material to be placed on the waste surface in these limited situations, we repeat, is that any potential for volatilization to the atmosphere of the organics in the waste would be prevented by the immediate application of the container cover.

A similar issue has come to the attention of EPA, regarding the container standards at § 264.1086(d)(2) and § 265.1087(d)(2), which require that transfer of hazardous waste in or out of a container ''* * * be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical * * *'' This provision was an amendment to the more extensive transfer requirements that were promulgated in the December 6, 1994 rule. The November 25, 1996 amendment also revised the tank and surface impoundment transfer requirements such that only transfer between and among subpart CC-regulated tanks and surface impoundments are required to be conducted in an enclosed transfer system. This amendment was made in recognition that it is often impractical for waste in containers to be transferred to tanks or surface impoundments through an enclosed system. However, it is the EPA's intent that transfer of hazardous waste among containers, and between containers and surface impoundments or tanks, be conducted in a manner to minimize waste exposure to the atmosphere. See § 264.1084(j), § 264.1085(e), § 264.1086(d)(2) and corresponding paragraphs in part 265.

Members of the regulated community have questioned whether it is possible to evade these less extensive transfer requirements by including an intervening non-subpart CC unit when performing a transfer of hazardous waste. Specifically, certain regulated facilities have discussed transferring waste from a subpart CC-regulated unit (e.g., a tank or container) to a unit not subject to subpart CC (e.g., the floor of a containment building), then subsequently transferring the waste to a second subpart CC-regulated unit. Since the containment building is not a unit regulated by subpart CC, the subpart CC standards do not impose transfer requirements to or from containment buildings; thus, the facilities suggest that the subpart CC transfer requirements would be met. As noted above, the subpart CC container requirements state that transfer of hazardous waste to and from a regulated container shall be conducted in a manner which minimizes the waste's exposure to the atmosphere, considering practical factors. The EPA considers an unnecessary and open-air transfer of waste to or from a container, conducted in whole or in part, to avoid the subpart CC container (or tank) requirements, to not meet the obvious intent of the container transfer requirement (e.g., see 264.1086(d)(2)). The EPA is aware of waste transfer methods that would be more effective in minimizing exposure of the waste to the atmosphere—the owner or operator is responsible for conducting waste transfer in such a manner as to minimize exposure of the hazardous waste to the atmosphere. Rather than leaving this issue open to interpretation, the EPA will instruct permit writers to invoke omnibus authority under RCRA section 3005(c)(3) to assure control of such transfers where necessary to protect human health and the environment.

There are other aspects of the container standards that also require some further clarification; one point that needs some additional explanation is in regard to the Department of Transportation (DOT) compliance demonstration option for containers. The subpart CC container standards, as amended November 25, 1996, allow three options for compliance demonstration, one of which is through compliance with certain applicable DOT regulations for packaging of hazardous materials for transportation. Commenters have stated that they consider the specification in subpart CC, as to which DOT packaging requirements qualify for that compliance option, to have resulted in an overly stringent requirement. However, the EPA has clarified that demonstration of compliance through the use of certain DOT packagings is only one approach to demonstrating compliance with the container standards. The regulated industry has indicated to EPA that the vast majority of hazardous waste that is shipped in DOT transport packagings meets the requirements for container level 1 standards. Thus, if a facility owner or operator is using a DOT packaging which is not among those specified under the subpart CC container standards, the facility owner or operator must conduct a visual inspection to determine that there are no visible openings, cracks, etc. in the container. See § 265.1087(c)(1)(ii). The EPA considers the existing regulatory language to adequately convey this intent, and is including this preamble discussion in response to commenters' requests.

The container option to comply with applicable DOT packaging regulations, described at 40 CFR 265.1087(f) and 264.1086(f), includes four requirements which must all be met to comply with the subpart CC compliance demonstration. The regulatory language of that paragraph clearly indicates (in fact, literally indicates) that compliance with all four of the subparagraphs at § 265.1087(f)(1) through § 265.1087(f)(4) is required, since the requirements are not presented as alternatives. The following paragraphs provide a detailed description of each of the four requirements found at § 265.1087(f).

The first requirement, found at 40 CFR 265.1087(f)(1), specifies that the container must meet the applicable requirements specified in 40 CFR part 178 or part 179. It is EPA's intent to require that in order to comply with 40 CFR part 265.1087(f), a container must

be subject to 49 CFR part 178 or part 179; it is also the EPA's intent to require that such a container be in compliance with all the requirements of 49 CFR parts 178 and 179 that are applicable. (Again, this is the direct and literal reading of the provision.) In developing the final rule, the EPA determined that containers subject to and in compliance with these requirements would achieve the appropriate level of air emission control; see the preamble discussion at Section IV.I.1, 61 FR 59947, November 25, 1996. The Agency could not make that finding for containers not subject to these provisions. A container not subject to 49 CFR part 178 or 179 is thus not eligible to comply with the subpart CC rule through the requirements of 40 CFR 265.1087 (c)(1)(i) or (d)(1)(i), nor the corresponding paragraphs in 40 CFR part 264; it would have to comply with the subpart CC rule through the requirements of 40 CFR 265.1087 (c)(1)(ii), (c)(1)(iii), (d)(1)(ii) or d(1)(iii), or the corresponding paragraphs in 40 CFR part 264, as appropriate.

The second requirement within 40 CFR 265.1087(f) for DOT-compliant containers stipulates that the hazardous waste must be managed in the DOT container in accordance with all the requirements contained in 49 CFR part 107 subpart B, part 172, part 173, and part 180 that are applicable to that container and the waste managed in that container. The EPA listed these regulatory parts because they were characterized by the industry and by DOT as the parts which describe the requirements for management of hazardous waste, for the types of containers that are specified in 49 CFR parts 178 and 179. The reference to 49 CFR part 107 subpart B is included to recognize the exemptions for containers that have been determined by DOT to be equivalent or superior to those required within 49 CFR part 178 and 179 standards.

The third and fourth requirements, listed in 40 CFR 265.1087(f)(3) and (f)(4) and their corresponding paragraphs in 40 CFR part 264, state that, ''* * * For the purpose of complying with this subpart, no exceptions to the 40 CFR part 178 and part 179 regulations are allowed except as provided for in paragraph (f)(4) of this section,'' and ''For a lab pack that is managed in accordance with the requirements of 40 CFR part 178 for the purpose of complying with this subpart, an owner or operator may comply with the exceptions for combination packagings specified in 40 CFR 173.12(b).'' These requirements indicate that the DOT-authorized container must be in compliance with all applicable requirements in 49 CFR parts 178 and 179. Paragraph 265.1087(f)(3) of the subpart CC rule specifically means that for the purposes of the subpart CC rule provisions, compliance with 49 CFR parts 178 and 179 is required, and no exceptions to those provisions are allowed (unless the container were a lab pack, as described in § 265.1087(f)(4)). As with the earlier provisions discussed above, this is the literal meaning of the provision. There are many exceptions, both explicit and implicit, to the 49 CFR part 178 and 179 standards which are contained in other sections of the DOT standards. The EPA's intent in 40 CFR 265.1087(f)(3) is to disallow any regulatory provision which removes or alters a requirement contained in 49 CFR parts 178 or 179, regardless of where that disallowing regulatory provision is codified, or whether that provision is specifically described as an ''exception.'' For instance, 49 CFR 173.28(e) states that a non-reusable container may be reused for certain circumstances; however, the allowance of that paragraph would not be recognized for compliance with the subpart CC container standards at 40 CFR 265.1087(f) or 40 CFR 264.1086(f). As another example, 49 CFR 173.204 contains an implicit exception for certain hazardous materials that states, ''packaging need not conform to the requirements of part 178.'' However, if that packaging were used to manage a hazardous waste subject to the container regulations of the subpart CC rule, the effect of 40 CFR 265.1087(f)(3) would be to require that, for compliance with the subpart CC rule, such packaging must comply with the requirements of 49 CFR part 178. In this example, 40 CFR 265.1087(f) and 264.1086(f) would disallow the exception to 49 part 178 provided by 49 CFR 173.204. Thus, as a general matter, 40 CFR 265.1087(f) and 264.1086(f) have the intended effect of requiring strict compliance with all applicable requirements of 49 CFR parts 178 and 179 (other than the exception for lab packs at 49 CFR 173.12(b)), for the purpose of the DOT compliance option within the subpart CC container standards. Strict compliance with these provisions is necessary to ensure that the emission reduction intended by the rule is achieved.

Today's action also corrects two typographical errors in § 264.1086. In § 264.1086(c)(2), ''* * * Organic vapor permeability, the effects of the contact with the hazardous waste * * *'' is revised to read as follows, ''Organic vapor permeability; the effects of the contact with the hazardous waste * * *'' and in § 264.1086(d)(2), ''* * * any one of the following: a submerged-fill pipe * * *'' is revised to read as follows, ''* * * any one of the following: A submerged-fill pipe * * *''

For containers required to use Level 2 controls under the subpart CC standards, one option under the final rules requires that the hazardous waste be managed in a ''container that operates with no detectable organic emissions.'' (See §§ 264.1086(d)(ii) and 265.1087(d)(ii).) The test for conducting no detectable organic emissions for the purpose of complying with this requirement must be conducted in accordance with the procedures specified in Method 21 of 40 CFR part 60, appendix A. However, under subpart CC, there are no requirements for periodic Method 21 leak monitoring of containers. (See Section IV.I.3 of the preamble to the final rule, 61 FR 59948, November 25, 1996.) Any Method 21 monitoring to determine if the containers operate with no detectable organic emissions is conducted at the owner's or operator's discretion. In order to clarify this point, the EPA has amended the language in paragraph (g) of the container standards.

H. Standards: Closed-Vent Systems and Control Devices

The inspection and monitoring requirements under paragraph (c) of § 264.1087 and § 265.1088 are being amended to clarify that the inspection and monitoring procedures specifically cited in paragraph (c)(7) are applicable to closed-vent systems as well as to the control devices. The reference to closed-vent system in paragraph (c)(7) was inadvertently left out of the sentence specifying what shall be inspected and monitored; however, the procedures specified in the paragraph did cite the requirements applicable to closed-vent systems, and it was thus the EPA's intent that closed-vent systems be included.

The EPA has received several comments concerning how a TSDF owner or operator would demonstrate compliance with the 95 percent removal requirement (see § 265.1088(c)(1)(i)) for a vent stream with low concentration organic vapor entering an organic air emission control device. The commenters contended that the 95 percent removal or destruction performance demonstration is not feasible for low concentration organic streams. However, the EPA has not at this time found adequate technical reasons to change the 95 percent control requirement. Similar requirements have been included in other regulations controlling air emissions from process vents on hazardous and non-hazardous

waste management operations (e.g., subpart DD in 40 CFR part 63) and guidance regarding compliance with the 95 percent control requirement has been published by the EPA, see EPA–450/3–89–021, *Hazardous Waste TSDF—Technical Guidance Document for RCRA Air Emission Standards for Process Vents and Equipment Leaks*; or EPA–450/3–91–007, *Alternative Control Technology Document—Organic Waste Process Vents.* The EPA has also published guidance regarding the control of low concentration organic vapor streams; see EPA–450/R–95–003, *Survey of Control Technologies for Low concentration Organic Vapor Gas Streams.*

It has been suggested that the EPA include the use of an activated carbon adsorption control system as a specified technology and/or use of surrogate compounds to demonstrate compliance. Again, the EPA does not have an adequate technical basis to revise the control device requirements to include a carbon adsorption control equipment specification. Carbon adsorption systems require considerable constituent and other site-specific information for proper control device design, unlike combustion systems, for which organic control efficiency is less dependent on the particular organic constituent present in the gas stream. Therefore, the EPA has not included a carbon adsorption equipment specification in the rule as an alternative to the 95 percent organic removal efficiency demonstration.

Commenters also have requested that the EPA amend the control device requirements of the rule to allow that the temperature sensor for condensers be placed in the coolant exhaust rather than in the exhaust vent stream from the condenser exit. The EPA selected this monitoring location because its was judged that monitoring the exhaust gas provided a better and more direct characterization of the performance of the condenser. In addition, the standards for closed-vent systems and control devices in subpart AA (see § 264.1033(i)) allow that ''an alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control devices's design specifications.'' This same allowance is not contained in the part 265 standards for interim status facilities because the rules do not have provisions for reporting and thus there is no direct mechanism for Agency review of the appropriateness of the alternative parameter. The EPA did not seek to burden the owner or operator of interim status facilities with the additional reporting requirements associated with the technical demonstration of equivalent characterization of performance. For those facilities that are monitoring an alternative parameter, e.g., condenser coolant exhaust rather than the condenser vent stream exhaust, in compliance with provisions of a Clean Air Act regulation such as the HON, the owner or operator of the unit may be able to comply with the RCRA air rules through one of the Clean Air Act applicability exemptions contained in the RCRA air rules at §§ 264.1030(d) and 265.1030(d) of subpart AA and §§ 264.1080(b)(7) and 265.1080(b)(7) of subpart CC. The EPA continues to believe that the monitoring requirements specified in the 40 CFR part 265 rules are reasonable, and the EPA does not consider it appropriate to allow alternative parameters to be monitored without a mechanism for Agency review of the alternative approach (e.g., a Clean Air Act or RCRA permit). Therefore, the EPA is not amending the rule in this regard.

As previously noted in Section III.C of this preamble, the November 25, 1996, amendments to the subpart CC standards for control devices and closed vent systems (at § 265.1088(c)(2)(i)), added provisions to allow up to 240 hours per year for periods of planned routine maintenance of a control device, during which time the control device is not required to meet the performance requirements for emission reductions specified in the rule. The EPA has received comments that control devices such as boilers, industrial furnaces, and incinerators often require routine maintenance that takes longer than 10 days per year. In connection with this, the commenters also requested that the EPA provide an extension to the repair period so long as the owner or operator documents the decision to use an extension by including certain material in the operating record. The EPA considers the emissions from hazardous waste to be a significant source of nationwide organic air emissions, and does not consider it appropriate to lengthen the time that a control device may be out of service for routine maintenance, while hazardous waste is being managed in the unit. As promulgated in December 1994, the subpart CC standards did not allow provisions for planned maintenance time, because the modeled emission reductions attributed to the implementation of these standards were based on control device operation at all times that affected waste is managed in a unit requiring a control device. In the November 1996 amendments, the EPA revised the control device provisions in recognition that planned or routine maintenance of control devices, within reason, would limit the unplanned malfunctions. However, the EPA continues to consider that 240 hours per year is an appropriate maximum amount of time for hazardous waste to be managed in units without the required control device operating. Thus, the EPA is not amending this provision. Instances of control device down time beyond the allowed 240 hours for maintenance would be considered periods in which the facility is not in compliance with the control requirements of the rule.

The EPA is today clarifying that the requirements for management of spent carbon, at § 264.1088(c)(3)(ii) and § 265.1089(c)(3)(ii) apply only to carbon that is a hazardous waste. This clarification has been made in both the February 9, 1996 technical amendments (see 61 FR at 4910) and the November 25, 1996 final rule amendments (see 61 FR at 59936). When amending the regulatory text at § 264.1087(c)(3)(ii) and § 265.1088(c)(3)(ii) in the November 25, 1996 action, the EPA inadvertently omitted the phrases that state the requirement applies to carbon that is a hazardous waste, and the requirement applies regardless of the VO concentration of the carbon. These statements had been included in the regulatory text prior to that November 25 **Federal Register** document; today's amendment clarifies the EPA's intent by correcting that omission.

I. Recordkeeping and Reporting Requirements

In the November 25, 1996 final rule amendments (61 FR 59952 and 59971) to parts 264 and 265, the subpart CC applicability was amended to exempt any hazardous waste management unit that the owner or operator certifies is equipped with and operating air emission controls in accordance with an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. Though the requirement for owner or operator certification was established at § 264.1080(b)(7), the EPA inadvertently failed to add the associated recordkeeping requirement to the recordkeeping sections of subpart CC. In order to establish minimum recordkeeping requirements for those units that are exempted from the subpart because the unit is in compliance with control requirements under a Clean Air Act regulation, the subpart CC recordkeeping requirements are being amended by today's action. A

new paragraph (j) is being added to § 264.1089 and § 265.1090 that requires the owner or operator to record and maintain: (1) a certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified in 40 CFR parts 60, 61, or 63; and (2) identification of the specific requirements with which the unit is in compliance.

Adding these requirements also necessitated a change to paragraph (a) of § 264.1089 and § 265.1090 in order to include paragraph (j) in the list of information specified for recordkeeping under the subpart.

In addition, today's action corrects typographical errors in § 264.1089(a) and § 265.1090(a). In the last sentence of § 264.1089(a), ''* * * air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1084(d) of this subpart.'' is revised to read as follows, ''* * * air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1080(d) or § 264.1080(b)(7), respectively, of this subpart.'' Similarly, in the last sentence of § 265.1090(a), ''* * * air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1084(d) of this subpart'' is revised to read as follows, ''* * * air emission controls specified in §§ 265.1085 through 265.1088 of this subpart in accordance with the conditions specified in § 265.1080(d) or § 265.1080(b)(7), respectively, of this subpart.''

Also in the recordkeeping sections of subpart CC, paragraph (f) of § 264.1089 and § 265.1090 are being amended to provide the full citation referenced in the paragraph; the references to § 264.1082(c)(2) and § 265.1083(c)(2) are being expanded to state (c)(2)(i) through (c)(2)(vi)'' in paragraph (f) to cover specifically each of the exemption options, for which a waste determination for a treated hazardous waste is required.

In a further correction, paragraph (b)(1)(ii)(B) of § 264.1089 and § 265.1090 is being amended to correct the sentence structure and eliminate the redundant phrase ''the following information.''

J. Appendix VI to Part 265

Appendix VI to part 265 is revised and reprinted in total. The revisions made by today's action correct printing errors in the November 25, 1996, final rule amendments (61 FR 59993), reformat the list to be alphabetical, correct typographical errors in compound names (for example, dimethyl hydrazine (1,) is corrected to read 1,1-dimethyl hydrazine), and add CAS numbers that were not available in the November 25, 1996, final rule amendments.

There has been some uncertainty among the regulated community with respect to whether or not cyanide (CN) is classified as an ''organic'' compound. For purposes of subpart CC, cyanide is listed in Appendix VI to Part 265 as one of the compounds with a Henry's Law Constant less than 0.1 Y/X and as such it is not necessary to quantify CN as a part of the volatile organic concentration determination.

VI Administrative Requirements

A. Docket

Six RCRA dockets contain information pertaining to today's rulemaking: (1) RCRA docket number F–91–CESP–FFFFF, which contains copies of all BID references and other information related to the development of the rule up through proposal; (2) RCRA docket number F–92–CESA–FFFFF, which contains copies of the supplemental data made available for public comment prior to promulgation; (3) RCRA docket number F–94–CESF-FFFFF, which contains copies of all BID references and other information related to development of the final rule following proposal; (4) RCRA docket number F–94–CE2A–FFFFF, which contains information pertaining to waste stabilization operations performed in tanks; (5) RCRA docket number F–95–CE3A–FFFFF, which contains information about potential final rule revisions made available for public comment; and (6) RCRA docket number F–96–CE4A–FFFFF, which contains a copy of each of the comment letters submitted in regard to the revisions that the EPA was considering for the final subpart CC standards. The public may review all materials in these dockets at the EPA RCRA Docket Office.

The EPA RCRA Docket Office is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Hand delivery of items and review of docket materials are made at the Virginia address. The public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA Docket Office is RCRA Information Center (5305W), 401 M Street SW, Washington, DC 20460. The Docket Office is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays.

B. Paperwork Reduction Act

The information collection requirements of the previously promulgated RCRA air rules were submitted to and approved by the Office of Management and Budget (OMB). A copy of this Information Collection Request (ICR) document (OMB control number 1593.02) may be obtained from Sandy Farmer, Information Policy Branch (2136); U.S. Environmental Protection Agency; 401 M Street, SW; Washington, DC 20460 or by calling (202) 260–2740.

Today's amendments to the RCRA air rules should have only a minor impact on the information collection burden estimates made previously, and that impact is expected to be a reduction. The changes consist of new definitions, alternative test procedures, clarifications of requirements, and additional compliance options. The changes are not additional requirements, but rather, are reductions in previously published requirements. The overall information-keeping requirements in the rule are being reduced. Consequently, the ICR has not been revised.

C. Executive Order 12866

Under Executive Order 12866, the EPA must determine whether the proposed regulatory action is ''significant'' and, therefore, subject to the OMB review and the requirements of the Executive Order. The Order defines ''significant'' regulatory action as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The RCRA subpart CC air rules published on December 6, 1994, were considered significant under Executive Order 12866, and a regulatory impact analysis (RIA) was prepared. The amendments published today clarify the

rule, provide more compliance alternatives, make certain regulatory provisions more lenient, and correct structural problems with the drafting of some sections. The OMB has evaluated this action, and determined it to be non-significant; thus it did not require their review.

D. Regulatory Flexibility

This rule is not subject to notice and comment rulemaking requirements and therefore is not subject to the Regulatory Flexibility Act. However, for the reasons discussed in the December 6, 1994 **Federal Register** (59 FR 62923), this rule does not have a significant impact on a substantial number of small entities. The changes to the rule do not add new control requirements to the December 1994 rule. The amendments in fact reduce the already-existing requirements. Therefore, the amendments are also not considered significant.

Under 5 U.S.C. 801(a)(1)(A) as added by the Small Business Regulatory Enforcement Fairness Act of 1996, EPA submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives and the Comptroller General of the General Accounting Office prior to publication of the rule in today's **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2) given that it amends the rule published in 1994 to reduce the extent of regulation.

E. Unfunded Mandates Act

Under section 202 of the Unfunded Mandates Reform Act of 1995 (''Unfunded Mandates Act''), the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under section 205, the EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that the action promulgated today does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate or to the private sector. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

F. Immediate Effective Date

The EPA has determined to make today's action effective immediately. The EPA believes that the corrections being made in today's action are either interpretations of existing regulations which do not require prior notice and opportunity for comment, or are technical corrections of obvious errors in the published rules (for example, corrections to regulations inconsistent with or not carrying out statements in the preamble or Background Information Document). Comment on such changes is unnecessary, within the meaning of 5 U.S.C. 553(b)(3)(B). In addition, the EPA notes that many of these clarifications result from the public meeting process, so that the Agency has provided a measure of opportunity for comment.

VII. Legal Authority

These regulations are amended under the authority of sections 2002, 3001–3007, 3010, and 7004 of the Solid Waste Disposal Act of 1970, as amended by RCRA, as amended (42 U.S.C. 6921–6927, 6930, and 6974).

List of Subjects

40 CFR Parts 264 and 265

Environmental protection, Air pollution control, Container, Control device, Hazardous waste, Inspection, Monitoring, Reporting and recordkeeping requirements, Surface impoundment, Tank, TSDF, Waste determination.

40 CFR Part 270

Environmental protection, Administrative practice and procedure, Air pollution, Confidential business information, Hazardous waste, Permit modification, Reporting and recordkeeping requirements.

Dated: November 28, 1997.

Richard D. Wilson,

Acting Asssistant Administrator for Air and Radiation.

For the reasons set out in the preamble, title 40, chapter I, parts 264, 265, and 270 of the Code of Federal Regulations are amended as follows:

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

1. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart B—General Facility Standards

2. Section 264.15 is amended by revising paragraph (b)(4), and leaving the ''COMMENT'' at the end of the paragraph to read as follows:

§ 264.15 General inspection requirements.

* * * * *

(b) * * *

(4) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§ 264.174, 264.193, 264.195, 264.226, 264.254, 264.278, 264.303, 264.347, 264.602, 264.1033, 264.1052, 264.1053, 264.1058, and 264.1083 through 264.1089 of this part, where applicable.

* * * * *

Subpart E—Manifest System, Recordkeeping, and Reporting

3. Section 264.73 is amended by revising paragraph (b)(6) to read as follows:

§ 264.73 Operating record.

* * * * *

(b) * * *

(6) Monitoring, testing or analytical data, and corrective action where required by subpart F of this part and §§ 264.19, 264.191, 264.193, 264.195, 264.222, 264.223, 264.226, 264.252—264.254, 264.276, 264.278, 264.280, 264.302—264.304, 264.309, 264.347, 264.602, 264.1034(c)—264.1034(f), 264.1035, 264.1063(d)—264.1063(i), 264.1064, and 264.1082 through 264.1090 of this part.

* * * * *

Subpart AA—Air Emission Standards for Process Vents

4. Section 264.1030 is amended by revising paragraphs (b)(3) and (c), leaving the ''NOTE'' at the end of paragraph (c), and adding paragraph (e), to read as:

§ 264.1030 Applicability.

* * * * *

(b) * * *

(3) A unit that is exempt from permitting under the provisions of 40

CFR 262.34(a) (i.e., a ''90-day'' tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.

(c) For the owner and operator of a facility subject to this subpart and who received a final permit under RCRA section 3005 prior to December 6, 1996, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 40 CFR 124.15 or reviewed in accordance with the requirements of 40 CFR 270.50(d). Until such date when the owner and operator receives a final permit incorporating the requirements of this subpart, the owner and operator is subject to the requirements of 40 CFR 265, subpart AA.

* * * * *

(e) The requirements of this subpart do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this subpart are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. The documentation of compliance under regulations at 40 CFR part 60, part 61, or part 63 shall be kept with, or made readily available with, the facility operating record.

* * * * *

5. Section 264.1031 is amended by revising the definition of ''In light liquid service'' to read as follows:

§ 264.1031 Definitions.

* * * * *

In light liquid service means that the piece of equipment contains or contacts a waste stream where the vapor pressure of one or more of the organic components in the stream is greater than 0.3 kilopascals (kPa) at 20°C, the total concentration of the pure organic components having a vapor pressure greater than 0.3 kilopascals (kPa) at 20°C is equal to or greater than 20 percent by weight, and the fluid is a liquid at operating conditions.

* * * * *

6. Section 264.1033 is amended by revising paragraph (a)(2) to read as follows:

§ 264.1033 Standards: Closed-vent systems and control devices.

(a) * * *

(2)(i) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this subpart on the effective date that the facility becomes subject to the provisions of this subpart must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup.

(ii) Any unit that begins operation after December 21, 1990, and is subject to the provisions of this subpart when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(iii) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this subpart shall comply with all requirements of this subpart as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subpart can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subpart. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(iv) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997, due to an action other than those described in paragraph (a)(2)(iii) of this section must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subpart; the 30-month implementation schedule does not apply).

* * * * *

Subpart BB—Air Emission Standards for Equipment Leaks

7. Section 264.1050 is amended by revising paragraphs (b)(3), (c) and (f) to read as follows:

§ 264.1050 Applicability.

* * * * *

(b) * * *

(3) A unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a ''90-day'' tank or container) and is not a recycling unit under the provisions of 40 CFR 261.6.

(c) For the owner or operator of a facility subject to this subpart and who received a final permit under RCRA section 3005 prior to December 6, 1996, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 40 CFR 124.15 or reviewed in accordance with the requirements of 40 CFR 270.50(d). Until such date when the owner or operator receives a final permit incorporating the requirements of this subpart, the owner or operator is subject to the requirements of 40 CFR part 265, subpart BB.

* * * * *

(f) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of §§ 264.1052 through 264.1060 of this subpart if it is identified, as required in § 264,1064(g)(6) of this subpart.

* * * * *

8. Section 264.1060 is revised to read as follows:

§ 264.1060 Standards: Closed-vent systems and control devices.

(a) Owners and operators of closed-vent systems and control devices subject to this subpart shall comply with the provisions of § 264.1033 of this part.

(b)(1) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this subpart on the effective date that the facility becomes subject to the provisions of this subpart must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup.

(2) Any unit that begins operation after December 21, 1990, and is subject to the provisions of this subpart when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(3) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this subpart shall comply with all requirements of this subpart as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subpart can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award or contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subpart. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(4) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997, due to an action other than those described in paragraph (b)(3) of this section must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subpart; the 30-month implementation schedule does not apply).

9. Section 264.1062 is amended by revising paragraphs (b)(2) and (b)(3) to read as follows:

§ 264.1062 Alternative standards for valves in gas/vapor service or in light liquid service: skip period leak detection and repair.

* * * * *

(b) * * *

(2) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves subject to the requirements in § 264.1057 of this subpart.

(3) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in § 264.1057 of this subpart.

* * * * *

10. Section 264.1064 is amended by revising paragraphs (g)(6) and (m) to read as follows:

§ 264.1064 Recordkeeping requirements.

* * * * *

(g) * * *

(6) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year.

* * * * *

(m) The owner or operator of a facility with equipment that is subject to this subpart and to regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with this subpart either by documentation pursuant to § 264.1064 of this subpart, or by documentation of compliance with the regulations at 40 CFR part 60, part 61, or part 63 pursuant to the relevant provisions of the regulations at 40 part 60, part 61, or part 63. The documentation of compliance under regulations at 40 CFR part 60, part 61, or part 63 shall be kept with or made readily available with the facility operating record.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

11. Section 264.1080 is amended by revising paragraphs (b)(1) and (c) to read as follows:

§ 264.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.

* * * * *

(c) For the owner and operator of a facility subject to this subpart who received a final permit under RCRA section 3005 prior to December 6, 1996, the requirements of this subpart shall be incorporated into the permit when the permit is reissued in accordance with the requirements of 40 CFR 124.15 of this chapter or reviewed in accordance with the requirements of 40 CFR 270.50(d) of this chapter. Until such date when the permit is reissued in accordance with the requirements of 40 CFR 124.15 or reviewed in accordance with the requirements of 40 CFR 270.50(d), the owner and operator is subject to the requirements of 40 CFR part 265, subpart CC.

* * * * *

12. Section 264.1082 is amended by revising paragraphs (b), (c)(2)(ix)(A), (c)(2)(ix)(B), (c)(3) and (c)(4)(ii) to read as follows:

§ 264.1082 Standards: General.

* * * * *

(b) The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in §§ 264.1084 through 264.1087 of this subpart, as applicable to the hazardous waste management unit, except as provided for in paragraph (c) of this section.

(c) * * *

(2) * * *

(ix) * * *

(A) If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR part 60, appendix A, or a value of 25 ppmw, whichever is less.

(B) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius.

(3) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of paragraph (c)(2)(iv) of this section.

(4) * * *

(ii) The organic hazardous constituents in the waste have been treated by the treatment technology established by the EPA for the waste in 40 CFR 268.42(a), or have been removed or destroyed by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).

* * * * *

13. Section 264.1083 is amended by revising paragraphs (a)(2) and (b)(1) to read as follows:

§ 264.1083 Waste determination procedures.

(a) * * *

(2) For a waste determination that is required by paragraph (a)(1) of this section, the average VO concentration of a hazardous waste at the point of waste origination shall be determined in accordance with the procedures specified in 40 CFR 265.1084(a)(2) through (a)(4).

(b) * * *

(1) An owner or operator shall perform the applicable waste determinations for each treated hazardous waste placed in waste management units exempted under the provisions of § 264.1082(c)(2)(i) through (c)(2)(vi) of this subpart from using air emission controls in accordance with standards specified in §§ 264.1084 through 264.1087 of this subpart, as applicable to the waste management unit.

* * * * *

14. Section 264.1084 is amended by revising paragraph (c)(2)(iii) introductory text and paragraph (c)(2)(iii)(B), adding paragraph (e)(4), revising paragraph (f)(3)(i)(D)(*4*) and paragraph (f)(3)(iii) itroductory text, adding paragraph (f)(4), and adding paragraph (j)(2)(iii) to read as follows:

§ 264.1084 Standards: Tanks.

* * * * *

(c) * * *

(2) * * *

(iii) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:

* * * * *

(B) Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever hazardous waste is managed in the tank, except as provided for in paragraphs (c)(2)(iii)(B) (*1*) and (*2*) of this section.

(*1*) During periods when it is necessary to provide access to the tank for performing the activities of paragraph (c)(2)(iii)(B)(*2*) of this section, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

(*2*) During periods of routine inspection, maintenance, or other activities needed for normal operations, and for removal of accumulated sludge or other residues from the bottom of the tank.

* * * * *

(e) * * *

(4) Safety devices, as defined in 40 CFR 265.1081, may be installed and operated as necessary on any tank complying with the requirements of paragraph (e) of this section.

(f) * * *

(3) * * *

(i) * * *

(D) * * *

(*4*) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in paragraph (f)(1)(ii) of this section.

* * * * *

(iii) Prior to each inspection required by paragraph (f)(3)(i) or (f)(3)(ii) of this section, the owner or operator shall notify the Regional Administrator in advance of each inspection to provide the Regional Administrator with the opportunity to have an observer present during the inspection. The owner or operator shall notify the Regional Administrator of the date and location of the inspection as follows:

* * * * *

(4) Safety devices, as defined in 40 CFR 265.1081, may be installed and operated as necessary on any tank complying with the requirements of paragraph (f) of this section.

* * * * *

(j) * * *

(2) * * *

(iii) The hazardous waste meets the requirements of § 264.1082(c)(4) of this subpart.

* * * * *

15. Section 264.1085 is amended by revising paragraphs (b)(2), (d)(1)(iii), and (d)(2)(i)(B) and adding paragraph (e)(2)(iii) to read as follows:

§ 264.1085 Standards: Surface impoundments.

* * * * *

(b) * * *

(2) A cover that is vented through a closed-vent system to a control device in accordance with the provisions specified in paragraph (d) of this section.

* * * * *

(d) * * *

(1) * * *

(iii) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

* * * * *

(2) * * *

(i) * * *

(B) To remove accumulated sludge or other residues from the bottom of the surface impoundment.

* * * * *

(e) * * *

(2) * * *

(iii) The hazardous waste meets the requirements of § 264.1082(c)(4) of this subpart.

* * * * *

16. Section 264.1086 is amended by revising paragraphs (c)(2), (c)(4)(i), (d)(2), (d)(4)(i), and paragraph (g) introductory text to read as follows:

§ 264.1086 Standards: Containers.

* * * * *

(c) * * *

(2) A container used to meet the requirements of paragraph (c)(1)(ii) or (c)(1)(iii) of this section shall be equipped with covers and closure devices, as applicable to the container, that are composed of suitable materials to minimize exposure of the hazardous waste to the atmosphere and to maintain the equipment integrity, for as long as the container is in service. Factors to be considered in selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of contact with the hazardous waste or its vapor managed in the container; the effects of outdoor exposure of the closure device or cover material to wind, moisture, and sunlight; and the operating practices for which the container is intended to be used.

* * * * *

(4) * * *

(i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the

container is accepted at the facility (i.e., the date the container becomes subject to the subpart CC container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to 40 CFR part 262 (EPA Forms 8700–22 and 8700–22A), as required under subpart E of this part, at 40 CFR 264.71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c)(4)(iii) of this section.

* * * * *

(d) * * *

(2) Transfer of hazardous waste in or out of a container using Container Level 2 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the EPA considers to meet the requirements of this paragraph include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

* * * * *

(4) * * *

(i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the subpart CC container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to 40 CFR part 262 (EPA Forms 8700–22 and 8700–22A), as required under subpart E of this part, at 40 CFR 264.71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d)(4)(iii) of this section.

* * * * *

(g) To determine compliance with the no detectable organic emissions requirement of paragraph (d)(1)(ii) of this section, the procedure specified in § 264.1083(d) of this subpart shall be used.

* * * * *

17. Section 264.1087 is amended by revising paragraphs (c)(3)(ii) and (c)(7) to read as follows:

§ 264.1087 Standards: Closed-vent systems and control devices.

* * * * *

(c) * * *

(3) * * *

(ii) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of 40 CFR 264.1033(n), regardless of the average volatile organic concentration of the carbon.

* * * * *

(7) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in 40 CFR 264.1033(f)(2) and 40 CFR 264.1033(l). The readings from each monitoring device required by 40 CFR 264.1033(f)(2) shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this section.

18. Section 264.1089 is amended by revising paragraphs (a), (b)(1)(ii)(B), and (f)(1) and adding paragraph (j) to read as follows:

§ 264.1089 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to requirements of this subpart shall record and maintain the information specified in paragraphs (b) through (j) of this section, as applicable to the facility. Except for air emission control equipment design documentation and information required by paragraphs (i) and (j) of this section, records required by this section shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by paragraphs (i) and (j) of this section shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the conditions specified in § 264.1080(d) or § 264.1080(b)(7) of this subpart, respectively.

(b) * * *

(1) * * *

(ii) * * *

(B) For each defect detected during the inspection: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the requirements of § 264.1084 of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

* * * * *

(f) * * *

(1) For tanks, surface impoundments, and containers exempted under the hazardous waste organic concentration conditions specified in § 264.1082(c)(1) or §§ 264.1082(c)(2)(i) through (c)(2)(vi) of this subpart, the owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of § 264.1083 of this subpart.

* * * * *

(j) For each hazardous waste management unit not using air emission controls specified in §§ 264.1084 through 264.1087 of this subpart in accordance with the requirements of § 264.1080(b)(7) of this subpart, the owner and operator shall record and maintain the following information:

(1) Certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63.

(2) Identification of the specific requirements codified under 40 CFR

part 60, part 61, or part 63 with which the waste management unit is in compliance.

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

19. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, 6925, and 6935.

Subpart B—General Facility Standards

20. Section 265.15 is amended by revising paragraph (b)(4) to read as follows:

§ 265.15 General inspection requirements.

* * * * *

(b) * * *

(4) The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in §§ 265.174, 265.193, 265.195, 265.226, 265.260, 265.278, 265.304, 265.347, 265.377, 265.403, 265.1033, 265.1052, 265.1053, 265.1058, and 265.1084 through 265.1090 of this part, where applicable.

* * * * *

Subpart E—Manifest System, Recordkeeping, and Reporting

21. Section 265.73 is amended by revising paragraph (b)(6), and leaving the ''COMMENT'' at the end of the paragraph, to read as follows:

§ 265.73 Operating record.

* * * * *

(b) * * *

(6) Monitoring, testing or analytical data, and corrective action where required by subpart F of this part and by §§ 265.19, 265.90, 265.94, 265.191, 265.193, 265.195, 265.222, 265.223, 265.226, 265.255, 265.259, 265.260, 265.276, 265.278, 265.280(d)(1), 265.302 through 265.304, 265.347, 265.377, 265.1034(c) through 265.1034(f), 265.1035, 265.1063(d) through 265.1063(i), 265.1064, and 265.1083 through 265.1090 of this part.

* * * * *

Subpart AA—Air Emission Standards for Process Vents

22. Section 265.1030 is amended by revising paragraph (b)(3), leaving the ''NOTE'' at the end of paragrpah (b)(3), and adding paragraph (d), to read as follows:

§ 265.1030 Applicability.

* * * * *

(b) * * *

(3) A unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a ''90-day'' tank or container) and is not a recycling unit under the requirements of 40 CFR 261.6.

(d) The requirements of this subpart do not apply to the process vents at a facility where the facility owner or operator certifies that all of the process vents that would otherwise be subject to this subpart are equipped with and operating air emission controls in accordance with the process vent requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63. The documentation of compliance under regulations at 40 CFR part 60, part 61, or part 63 shall be kept with, or made readily available with, the facility operating record.

23. Section 265.1033 is amended by revising paragraphs (a)(2) and (f)(2)(vi)(B) to read as follows:

§ 265.1033 Standards: Closed-vent systems and control devices.

(a) * * *

(2)(i) The owner or operator of an existing facility who cannot install a closed-vent system and control device to comply with the provisions of this subpart on the effective date that the facility becomes subject to the requirements of this subpart must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup.

(ii) Any unit that begins operation after December 21, 1990, and is subject to the requirements of this subpart when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(iii) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this subpart shall comply with all requirements of this subpart as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subpart can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subpart. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(iv) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997, due to an action other than those described in paragraph (a)(2)(iii) of this section must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subpart; the 30-month implementation schedule does not apply).

* * * * *

(f) * * *

(2) * * *

(vi) * * *

(B) A temperature monitoring device equipped with a continuous recorder. The device shall be capable of monitoring temperature with an accuracy of ±1 percent of the temperature being monitored in degrees Celsius (°C) or ±0.5 °C, whichever is greater. The temperature sensor shall be installed at a location in the exhaust vent stream from the condenser exit (i.e., product side).

* * * * *

Subpart BB—Air Emission Standards for Equipment Leaks

24. Section 265.1050 is amended by revising paragraphs (b)(3) and (e) to read as follows:

§ 265.1050 Applicability.

* * * * *

(b) * * *

(3) A unit that is exempt from permitting under the provisions of 40 CFR 262.34(a) (i.e., a ''90-day'' tank or

container) and is not a recycling unit under the provisions of 40 CFR 261.6.

* * * * *

(e) Equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year is excluded from the requirements of §§ 265.1052 through 265.1060 of this subpart if it is identified, as required in § 265.1064(g)(6) of this subpart.

* * * * *

25. Section 265.1060 is revised to read as follows:

§ 265.1060 Standards: Closed-vent systems and control devices.

(a) Owners and operators of closed-vent systems and control devices subject to this subpart shall comply with the provisions of § 265.1033 of this part.

(b)(1) The owner or operator of an existing facility who can not install a closed-vent system and control device to comply with the provisions of this subpart on the effective date that the facility becomes subject to the provisions of this subpart must prepare an implementation schedule that includes dates by which the closed-vent system and control device will be installed and in operation. The controls must be installed as soon as possible, but the implementation schedule may allow up to 30 months after the effective date that the facility becomes subject to this subpart for installation and startup.

(2) Any units that begin operation after December 21, 1990, and are subject to the provisions of this subpart when operation begins, must comply with the rules immediately (i.e., must have control devices installed and operating on startup of the affected unit); the 30-month implementation schedule does not apply.

(3) The owner or operator of any facility in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to this subpart shall comply with all requirements of this subpart as soon as practicable but no later than 30 months after the amendment's effective date. When control equipment required by this subpart can not be installed and begin operation by the effective date of the amendment, the facility owner or operator shall prepare an implementation schedule that includes the following information: Specific calendar dates for award of contracts or issuance of purchase orders for the control equipment, initiation of on-site installation of the control equipment, completion of the control equipment installation, and performance of any testing to demonstrate that the installed equipment meets the applicable standards of this subpart. The owner or operator shall enter the implementation schedule in the operating record or in a permanent, readily available file located at the facility.

(4) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997 due to an action other than those described in paragraph (b)(3) of this section must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subpart; the 30-month implementation schedule does not apply).

26. Section 265.1062 is amended by revising paragraphs (b)(2) and (b)(3) to read as follows:

§ 265.1062 Alternative standards for valves in gas/vapor service or in light liquid service: skip period leak detection and repair.

* * * * *

(b) * * *

(2) After two consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip one of the quarterly leak detection periods (i.e., monitor for leaks once every six months) for the valves subject to the requirements in § 265.1057 of this subpart.

(3) After five consecutive quarterly leak detection periods with the percentage of valves leaking equal to or less than 2 percent, an owner or operator may begin to skip three of the quarterly leak detection periods (i.e., monitor for leaks once every year) for the valves subject to the requirements in § 265.1057 of this subpart.

* * * * *

27. Section 265.1064 is amended by revising paragraphs (g)(6) and (m) to read as follows:

§ 265.1064 Recordkeeping requirements.

* * * * *

(g) * * *

(6) Identification, either by list or location (area or group) of equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year.

* * * * *

(m) The owner or operator of any facility with equipment that is subject to this subpart and to leak detection, monitoring, and repair requirements under regulations at 40 CFR part 60, part 61, or part 63 may elect to determine compliance with this subpart either by documentation pursuant to § 265.1064 of this subpart, or by documentation of compliance with the regulations at 40 CFR part 60, part 61, or part 63 pursuant to the relevant provisions of the regulations at 40 part 60, part 61, or part 63. The documentation of compliance under regulation at 40 CFR part 60, part 61, or part 63 shall be kept with or made readily available with the facility operating record.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

28. Section 265.1080 is amended by revising paragraphs (b)(1) and the introductory paragraph of (c) to read as follows:

§ 265.1080 Applicability.

* * * * *

(b) * * *

(1) A waste management unit that holds hazardous waste placed in the unit before December 6, 1996, and in which no hazardous waste is added to the unit on or after December 6, 1996.

* * * * *

(c) For the owner and operator of a facility subject to this subpart who has received a final permit under RCRA section 3005 prior to December 6, 1996, the following requirements apply:

* * * * *

29. Section 265.1081 is amended by revising the definition of ''In light material service'' to read as follows:

§ 265.1081 Definitions.

* * * * *

In light material service means the container is used to manage a material for which both of the following conditions apply: The vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals (kPa) at 20 °C; and the total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kPa at 20 °C is equal to or greater than 20 percent by weight.

* * * * *

30. Section 265.1082 is revised to read as follows:

§ 265.1082 Schedule for implementation of air emission standards.

(a) Owners or operators of facilities existing on December 6, 1996 and subject to subparts I, J, and K of this part shall meet the following requirements:

(1) Install and begin operation of all control equipment or waste management units required to comply with this subpart and complete modifications of production or

treatment processes to satisfy exemption criteria in accordance with § 265.1083(c) of this subpart by December 6, 1996, except as provided for in paragraph (a)(2) of this section.

(2) When control equipment or waste management units required to comply with this subpart cannot be installed and in operation or modifications of production or treatment processes to satisfy exemption criteria in accordance with § 265.1083(c) of this subpart cannot be completed by December 6, 1996, the owner or operator shall:

(i) Install and begin operation of the control equipment and waste management units, and complete modifications of production or treatment processes as soon as possible but no later than December 8, 1997.

(ii) Prepare an implementation schedule that includes the following information: specific calendar dates for award of contracts or issuance of purchase orders for control equipment, waste management units, and production or treatment process modifications; initiation of on-site installation of control equipment or waste management units, and modifications of production or treatment processes; completion of control equipment or waste management unit installation, and production or treatment process modifications; and performance of testing to demonstrate that the installed equipment or waste management units, and modified production or treatment processes meet the applicable standards of this subpart.

(iii) For facilities subject to the recordkeeping requirements of § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than December 6, 1996.

(iv) For facilities not subject to § 265.73 of this part, the owner or operator shall enter the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility no later than December 6, 1996.

(b) Owners or operators of facilities and units in existence on the effective date of a statutory or EPA regulatory amendment that renders the facility subject to subparts I, J, or K of this part shall meet the following requirements:

(1) Install and begin operation of control equipment or waste management units required to comply with this subpart, and complete modifications of production or treatment processes to satisfy exemption criteria of § 265.1083(c) of this subpart by the effective date of the amendment, except as provided for in paragraph (b)(2) of this section.

(2) When control equipment or waste management units required to comply with this subpart cannot be installed and begin operation, or when modifications of production or treatment processes to satisfy exemption criteria of § 265.1083(c) of this subpart cannot be completed by the effective date of the amendment, the owner or operator shall:

(i) Install and begin operation of the control equipment or waste management unit, and complete modification of production or treatment processes as soon as possible but no later than 30 months after the effective date of the amendment.

(ii) For facilities subject to the recordkeeping requirements of § 265.73 of this part, enter and maintain the implementation schedule specified in paragraph (a)(2)(ii) of this section in the operating record no later than the effective date of the amendment, or

(iii) For facilities not subject to § 265.73 of this part, the owner or operator shall enter and maintain the implementation schedule specified in paragraph (a)(2)(ii) of this section in a permanent, readily available file located at the facility site no later than the effective date of the amendment.

(c) Owners and operators of facilities and units that become newly subject to the requirements of this subpart after December 8, 1997 due to an action other than those described in paragraph (b) of this section must comply with all applicable requirements immediately (i.e., must have control devices installed and operating on the date the facility or unit becomes subject to this subpart; the 30-month implementation schedule does not apply).

(d) The Regional Administrator may elect to extend the implementation date for control equipment at a facility, on a case by case basis, to a date later than December 8, 1997, when special circumstances that are beyond the facility owner's or operator's control delay installation or operation of control equipment, and the owner or operator has made all reasonable and prudent attempts to comply with the requirements of this subpart.

31. Section 265.1083 is amended by revising paragraphs (b), (c)(2)(i), (c)(2)(ix)(A), (c)(2)(ix)(B), (c)(3), and (c)(4)(ii) to read as follows:

§ 265.1083 Standards: General.

* * * * *

(b) The owner or operator shall control air pollutant emissions from each hazardous waste management unit in accordance with standards specified in §§ 265.1085 through 265.1088 of this subpart, as applicable to the hazardous waste management unit, except as provided for in paragraph (c) of this section.

(c) * * *

(2) * * *

(i) A process that removes or destroys the organics contained in the hazardous waste to a level such that the average VO concentration of the hazardous waste at the point of waste treatment is less than the exit concentration limit (C_t) established for the process. The average VO concentration of the hazardous waste at the point of waste treatment and the exit concentration limit for the process shall be determined using the procedures specified in § 265.1084(b) of this subpart.

* * * * *

(ix) * * *

(A) If Method 25D in 40 CFR part 60, appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR part 60, appendix A, or a value of 25 ppmw, whichever is less.

(B) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant value at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8 x 10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius.

(3) A tank or surface impoundment used for biological treatment of hazardous waste in accordance with the requirements of paragraph (c)(2)(iv) of this section.

(4) * * *

(ii) The organic hazardous constituents in the waste have been treated by the treatment technology established by the EPA for the waste in 40 CFR 268.42(a), or have been removed or destroyed by an equivalent method of treatment approved by EPA pursuant to 40 CFR 268.42(b).

* * * * *

32. Section 265.1084 is amended by adding paragraphs (a)(3)(v) and (b)(3)(v) and by revising paragraphs (a)(2), (a)(3)(ii)(B), (a)(3)(iii) introductory text, (a)(3)(iii)(A), (a)(3)(iii)(F) introductory text, (a)(3)(iii)(G), (a)(3)(iii)(G)(*1*), (a)(3)(iv), (a)(4)(iv), (b)(1), (b)(3)(ii)(B), (b)(3)(iii) introductory text, (b)(3)(iii)(F) introductory text, (b)(3)(iii)(G) introductory text, (b)(3)(iv), (b)(8)(iii), (b)(9)(iv), and (d)(5)(ii) to read as follows:

§ 265.1084 Waste determination procedures.

(a)* * *

(2) For a waste determination that is required by paragraph (a)(1) of this section, the average VO concentration of a hazardous waste at the point of waste origination shall be determined using either direct measurement as specified in paragraph (a)(3) of this section or by knowledge as specified in paragraph (a)(4) of this section.

(3) * * *

(ii) * * *

(B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

* * * * *

(iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (a)(3)(iii)(A) through (a)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8 x 10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (a)(3)(iii)(B) through (a)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260 or 8270 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's published list, the procedures in paragraph (a)(3)(iii)(H) of this section must be followed. At the owner or operator's discretion, the concentration of each individual chemical constituent measured in the waste by a method other than Method 25D may be corrected to the concentration had it been measured using Method 25D by multiplying the measured concentration by the constituent-specific adjustment factor (f_{m25D}) as specified in paragraph (a)(4)(iii) of this section. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

(A) Method 25D in 40 CFR part 60, appendix A.

* * * * *

(F) Method 8260 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8260. The quality assurance program shall include the following elements:

* * * * *

(G) Method 8270 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8270. The quality assurance program shall include the following elements:

(*1*) Documentation of site-specific procedures to minimize the loss of compounds due to volatilization, biodegradation, reaction, or sorption during the sample collection, storage, preparation, introduction, and analysis steps.

* * * * *

(iv) Calculations.

(A) The average VO concentration ($\tilde{C}$) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with paragraphs (a)(3) (ii) and (iii) of this section and the following equation:

$$\overline{C} = \frac{1}{Q_T} \times \sum_{i=1}^{\eta} \left(Q_i \times C_i \right)$$

where:

$\tilde{C}$ = Average VO concentration of the hazardous waste at the point of waste origination on a mass-weighted basis, ppmw.

i = Individual waste determination ''i'' of the hazardous waste.

n = Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i = Mass quantity of hazardous waste stream represented by C_i, kg/hr.

Q_T = Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i = Measured VO concentration of waste determination ''i'' as determined in accordance with the requirements of paragraph (a)(3)(iii) of this section (i.e. the average of the four or more samples specified in paragraph (a)(3)(ii)(B) of this section), ppmw.

(B) For the purpose of determining C_i, for individual waste samples analyzed in accordance with paragraph (a)(3)(iii) of this section, the owner or operator shall account for VO concentrations determined to be below the limit of detection of the analytical method by using the following VO concentration:

(*1*) If Method 25D in 40 CFR part 60, Appendix A is used for the analysis, one-half the blank value determined in the method at section 4.4 of Method 25D in 40 CFR part 60, appendix A.

(*2*) If any other analytical method is used, one-half the sum of the limits of detection established for each organic constituent in the waste that has a Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8 x 10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius.

(v) Provided that the test method is appropriate for the waste as required under paragraph (a)(3)(iii) of this section, the EPA will determine compliance based on the test method used by the owner or operator as recorded pursuant to § 265.1090(f)(1) of this subpart.

(4) * * *

(iv) In the event that the Regional Administrator and the owner or operator disagree on a determination of the average VO concentration for a hazardous waste stream using knowledge, then the results from a determination of average VO concentration using direct measurement as specified in paragraph (a)(3) of this section shall be used to establish compliance with the applicable requirements of this subpart. The Regional Administrator may perform or request that the owner or operator perform this determination using direct measurement. The owner or operator may choose one or more appropriate methods to analyze each collected sample in accordance with the requirements of paragraph (a)(3)(iii) of this section.

(b) * * *

(1) An owner or operator shall perform the applicable waste determination for each treated hazardous waste placed in a waste management unit exempted under the provisions of § 265.1083 (c)(2)(i) through (c)(2)(vi) of this subpart from using air emission controls in accordance with standards specified in §§ 265.1085 through 265.1088 of this subpart, as applicable to the waste management unit.

* * * * *

(3) * * *

(ii) * * *

(B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

* * * * *

(iii) *Analysis.* Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (b)(3)(iii)(A) through (b)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system, to determine if the conditions of § 264.1082(c)(2)(i) through (c)(2)(vi) of this part, or § 265.1083(c)(2)(i) through (c)(2)(vi) of this subpart are met, then the waste samples shall be prepared and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8 x 10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (b)(3)(iii)(B) through (b)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses Method 8260 or 8270 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's published list, the procedures in paragraph (b)(3)(iii)(H) of this section must be followed. At the owner or operator's discretion, the concentration of each individual chemical constituent measured in the waste by a method other than Method 25D may be corrected to the concentration had it been measured using Method 25D by multiplying the measured concentration by the constituent-specific adjustment factor (f_{m25D}) as specified in paragraph (b)(4)(iii) of this section. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

* * * * *

(F) Method 8260 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8260. The quality assurance program shall include the following elements:

* * * * *

(G) Method 8270 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 (incorporated by reference—refer to § 260.11(a) of this chapter). Maintain a formal quality assurance program consistent with the requirements of Method 8270. The quality assurance program shall include the following elements:

* * * * *

(iv) *Calculations.* The average VO concentration ($\overline{C}$) on a mass-weighted basis shall be calculated by using the results for all waste determinations conducted in accordance with paragraphs (b)(3)(ii) and (iii) of this section and the following equation:

$$\overline{C} = \frac{1}{Q_T} \times \sum_{i=1}^{\eta} \left(Q_i \times C_i \right)$$

where:

$\overline{C}$=Average VO concentration of the hazardous waste at the point of waste treatment on a mass-weighted basis, ppmw.

i=Individual waste determination ''i'' of the hazardous waste.

n=Total number of waste determinations of the hazardous waste conducted for the averaging period (not to exceed 1 year).

Q_i=Mass quantity of hazardous waste stream represented by C_i, kg/hr.

Q_T=Total mass quantity of hazardous waste during the averaging period, kg/hr.

C_i=Measured VO concentration of waste determination ''i'' as determined in accordance with the requirements of paragraph (b)(3)(iii) of this

section (i.e. the average of the four or more samples specified in paragraph (b)(3)(ii)(B) of this section), ppmw.

(v) Provided that the test method is appropriate for the waste as required under paragraph (b)(3)(iii) of this section, compliance shall be determined based on the test method used by the owner or operator as recorded pursuant to § 265.1090(f)(1) of this subpart.

* * * * *

(8) * * *

(iii) The MR shall be calculated by using the mass flow rate determined in accordance with the requirements of paragraph (b)(8)(ii) of this section and the following equation:

$MR = E_b - E_a$

Where:

MR=Actual organic mass removal rate, kg/hr.

E_b=Waste volatile organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

E_a=Waste volatile organic mass flow exiting process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

* * * * *

(9) * * *

(iv) The MR_{bio} shall be calculated by using the mass flow rates and fraction of organic biodegraded determined in accordance with the requirements of paragraphs (b)(9)(ii) and (b)(9)(iii) of this section, respectively, and the following equation:

$MR_{bio} = E_b \times F_{bio}$

Where:

MR_{bio}=Actual organic mass biodegradation rate, kg/hr.

E_b=Waste organic mass flow entering process as determined in accordance with the requirements of paragraph (b)(5)(iv) of this section, kg/hr.

F_{bio}=Fraction of organic biodegraded as determined in accordance with the requirements of paragraph (b)(9)(iii) of this section.

* * * * *

(d) * * *

(5) * * *

(ii) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppmv methane or n-hexane.

* * * * *

33. Section 265.1085 is amended by revising the introductory text of paragraph (c)(2)(iii), revising (c)(2)(iii)(B), adding paragraph (e)(4), revising paragraph (f)(3)(i)(D)(*4*), adding paragraph (f)(4), and adding paragraph (j)(2)(iii) to read as follows:

§ 265.1085 Standards: Tanks.

* * * * *

(c) * * *

(2) * * *

(iii) Each opening in the fixed roof, and any manifold system associated with the fixed roof, shall be either:

* * * * *

(B) Connected by a closed-vent system that is vented to a control device. The control device shall remove or destroy organics in the vent stream, and shall be operating whenever hazardous waste is managed in the tank, except as provided for in paragraphs (c)(2)(iii)(B)(*1*) and (*2*) of this section.

(*1*) During periods it is necessary to provide access to the tank for performing the activities of paragraph (c)(2)(iii)(B)(*2*) of this section, venting of the vapor headspace underneath the fixed roof to the control device is not required, opening of closure devices is allowed, and removal of the fixed roof is allowed. Following completion of the activity, the owner or operator shall promptly secure the closure device in the closed position or reinstall the cover, as applicable, and resume operation of the control device.

(*2*) During periods of routine inspection, maintenance, or other activities needed for normal operations, and for the removal of accumulated sludge or other residues from the bottom of the tank.

* * * * *

(e) * * *

(4) Safety devices, as defined in § 265.1081 of this subpart, may be installed and operated as necessary on any tank complying with the requirements of paragraph (e) of this section.

(f) * * *

(3) * * *

(i) * * *

(D) * * *

(*4*) The total gap area shall be calculated by adding the gap surface areas determined for each identified gap location for the primary seal and the secondary seal individually, and then dividing the sum for each seal type by the nominal diameter of the tank. These total gap areas for the primary seal and secondary seal are then compared to the respective standards for the seal type as specified in paragraph (f)(1)(ii) of this section.

* * * * *

(4) Safety devices, as defined in 40 CFR 265.1081, may be installed and operated as necessary on any tank complying with the requirements of paragraph (f) of this section.

* * * * *

(j) * * *

(2) * * *

(iii) The hazardous waste meets the requirements of § 265.1083(c)(4) of this subpart.

* * * * *

34. Section 265.1086 is amended by revising paragraphs (b)(2), (d)(1)(iii), and (d)(2)(i)(B) and adding paragraph (e)(2)(iii) to read as follows:

§ 265.1086 Standards: Surface impoundments.

* * * * *

(b) * * *

(2) A cover that is vented through a closed-vent system to a control device in accordance with the requirements specified in paragraph (d) of this section.

* * * * *

(d) * * *

(1) * * *

(iii) The cover and its closure devices shall be made of suitable materials that will minimize exposure of the hazardous waste to the atmosphere, to the extent practical, and will maintain the integrity of the cover and closure devices throughout their intended service life. Factors to be considered when selecting the materials of construction and designing the cover and closure devices shall include: Organic vapor permeability; the effects of any contact with the liquid or its vapors managed in the surface impoundment; the effects of outdoor exposure to wind, moisture, and sunlight; and the operating practices used for the surface impoundment on which the cover is installed.

* * * * *

(2) * * *

(i) * * *

(B) To remove accumulated sludge or other residues from the bottom of the surface impoundment.

* * * * *

(e) * * *

(2) * * *

(iii) The hazardous waste meets the requirements of § 265.1083(c)(4) of this subpart.

* * * * *

35. Section 265.1087 is amended by revising paragraphs (c)(4)(i), (d)(4)(i), and the introductory text of paragraph (g) to read as follows:

§ 265.1087 Standards: Containers.

* * * * *

(c) * * *

(4) * * *

(i) In the case when a hazardous waste already is in the container at the time

the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the subpart CC container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to 40 CFR part 262 (EPA Forms 8700–22 and 8700–22A), as required under subpart E of this part, at 40 CFR 265.71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (c)(4)(iii) of this section.

* * * * *

(d) * * *

(4) * * *

(i) In the case when a hazardous waste already is in the container at the time the owner or operator first accepts possession of the container at the facility and the container is not emptied within 24 hours after the container is accepted at the facility (i.e., does not meet the conditions for an empty container as specified in 40 CFR 261.7(b)), the owner or operator shall visually inspect the container and its cover and closure devices to check for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position. The container visual inspection shall be conducted on or before the date that the container is accepted at the facility (i.e., the date the container becomes subject to the subpart CC container standards). For purposes of this requirement, the date of acceptance is the date of signature that the facility owner or operator enters on Item 20 of the Uniform Hazardous Waste Manifest in the appendix to 40 CFR part 262 (EPA Forms 8700–22 and 8700–22A), as required under subpart E of this part, at § 265.71. If a defect is detected, the owner or operator shall repair the defect in accordance with the requirements of paragraph (d)(4)(iii) of this section.

* * * * *

(g) To determine compliance with the no detectable organic emissions requirements of paragraph (d)(1)(ii) of this section, the procedure specified in § 265.1084(d) of this subpart shall be used.

* * * * *

36. Section 265.1088 is amended by revising paragraphs (c)(3)(ii) and (c)(7) to read as follows:

§ 265.1088 Standards: Closed-vent systems and control devices.

* * * * *

(c) * * *

(3) * * *

(ii) All carbon that is a hazardous waste and that is removed from the control device shall be managed in accordance with the requirements of 40 CFR 265.1033(m), regardless of the average volatile organic concentration of the carbon.

* * * * *

(7) The closed-vent system and control device shall be inspected and monitored by the owner or operator in accordance with the procedures specified in 40 CFR 265.1033(f)(2) and 40 CFR 265.1033(k). The readings from each monitoring device required by 40 CFR 265.1033(f)(2) shall be inspected at least once each operating day to check control device operation. Any necessary corrective measures shall be immediately implemented to ensure the control device is operated in compliance with the requirements of this section.

37. Section 265.1090 is amended by revising paragraphs (a), (b)(1)(ii)(B), and (f)(1) and adding paragraph (j) to read as follows:

§ 265.1090 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to requirements in this subpart shall record and maintain the information specified in paragraphs (b) through (j) of this section, as applicable to the facility. Except for air emission control equipment design documentation and information required by paragraphs (i) and (j) of this section, records required by this section shall be maintained in the operating record for a minimum of 3 years. Air emission control equipment design documentation shall be maintained in the operating record until the air emission control equipment is replaced or otherwise no longer in service. Information required by paragraphs (i) and (j) of this section shall be maintained in the operating record for as long as the waste management unit is not using air emission controls specified in §§ 265.1085 through 265.1088 of this subpart in accordance with the conditions specified in § 265.1080(d) or § 265.1080(b)(7) of this subpart, respectively.

(b) * * *

(1) * * *

(ii) * * *

(B) For each defect detected during the inspection: The location of the defect, a description of the defect, the date of detection, and corrective action taken to repair the defect. In the event that repair of the defect is delayed in accordance with the provisions of § 265.1085 of this subpart, the owner or operator shall also record the reason for the delay and the date that completion of repair of the defect is expected.

* * * * *

(f) * * *

(1) For tanks, surface impoundments, or containers exempted under the hazardous waste organic concentration conditions specified in § 265.1083(c)(1) or § 265.1084(c)(2)(i) through (c)(2)(vi) of this subpart, the owner or operator shall record the information used for each waste determination (e.g., test results, measurements, calculations, and other documentation) in the facility operating log. If analysis results for waste samples are used for the waste determination, then the owner or operator shall record the date, time, and location that each waste sample is collected in accordance with applicable requirements of § 265.1084 of this subpart.

* * * * *

(j) For each hazardous waste management unit not using air emission controls specified in §§ 265.1085 through 265.1088 of this subpart in accordance with the provisions of § 265.1080(b)(7) of this subpart, the owner and operator shall record and maintain the following information:

(1) Certification that the waste management unit is equipped with and operating air emission controls in accordance with the requirements of an applicable Clean Air Act regulation codified under 40 CFR part 60, part 61, or part 63.

(2) Identification of the specific requirements codified under 40 CFR part 60, part 61, or part 63 with which the waste management unit is in compliance.

* * * * *

38. Part 265, Appendix VI is revised to read as follows:

Appendix VI to Part 265—Compounds With Henry's Law Constant Less Than 0.1 Y/X

Compound name	CAS No.
Acetaldol	107–89–1
Acetamide	60–35–5
2-Acetylaminofluorene	53–96–3
3-Acetyl-5-hydroxypiperidine.	
3-Acetylpiperidine	618–42–8
1-Acetyl-2-thiourea	591–08–2
Acrylamide	79–06–1
Acrylic acid	79–10–7
Adenine	73–24–5
Adipic acid	124–04–9
Adiponitrile	111–69–3
Alachlor	15972–60–8
Aldicarb	116–06–3
Ametryn	834–12–8
4-Aminobiphenyl	92–67–1
4-Aminopyridine	504–24–5
Aniline	62–53–3
o-Anisidine	90–04–0
Anthraquinone	84–65–1
Atrazine	1912–24–9
Benzenearsonic acid	98–05–5
Benzenesulfonic acid	98–11–3
Benzidine	92–87–5
Benzo(a)anthracene	56–55–3
Benzo(k)fluoranthene	207–08–9
Benzoic acid	65–85–0
Benzo(g,h,i)perylene	191–24–2
Benzo(a)pyrene	50–32–8
Benzyl alcohol	100–51–6
gamma-BHC	58–89–9
Bis(2-ethylhexyl)phthalate	117–81–7
Bromochloromethyl acetate.	
Bromoxynil	1689–84–5
Butyric acid	107–92–6
Caprolactam (hexahydro-2H-azepin-2-one)	105–60–2
Catechol (o-dihydroxybenzene)	120–80–9
Cellulose	9004–34–6
Cell wall.	
Chlorhydrin (3-Chloro-1,2-propanediol)	96–24–2
Chloroacetic acid	79–11–8
2-Chloroacetophenone	93–76–5
p-Chloroaniline	106–47–8
p-Chlorobenzophenone	134–85–0
Chlorobenzilate	510–15–6
p-Chloro-m-cresol (6-chloro-m-cresol)	59–50–7
3-Chloro-2,5-diketopyrrolidine.	
Chloro-1,2-ethane diol.	
4-Chlorophenol	106–48–9
Chlorophenol polymers (2-chlorophenol & 4-chlorophenol)	95–57–8 & 106–48–9
1-(o-Chlorophenyl)thiourea	5344–82–1
Chrysene	218–01–9
Citric acid	77–92–9
Creosote	8001–58–9
m-Cresol	108–39–4
o-Cresol	95–48–7
p-Cresol	106–44–5
Cresol (mixed isomers)	1319–77–3
4-Cumylphenol	27576–86
Cyanide	57–12–5
4-Cyanomethyl benzoate.	
Diazinon	333–41–5
Dibenzo(a,h)anthracene	53–70–3
Dibutylphthalate	84–74–2
2,5-Dichloroaniline (N,N'-dichloroaniline)	95–82–9
2,6-Dichlorobenzonitrile11	1194–65–6
2,6-Dichloro-4-nitroaniline	99–30–9
2,5-Dichlorophenol	333–41–5
3,4-Dichlorotetrahydrofuran	3511–19
Dichlorvos (DDVP)	62737
Diethanolamine	111–42–2
N,N-Diethylaniline	91–66–7

Compound name	CAS No.
Diethylene glycol	111–46–6
Diethylene glycol dimethyl ether (dimethyl Carbitol)	111–96–6
Diethylene glycol monobutyl ether (butyl Carbitol)	112–34–5
Diethylene glycol monoethyl ether acetate (Carbitol acetate)	112–15–2
Diethylene glycol monoethyl ether (Carbitol Cellosolve)	111–90–0
Diethylene glycol monomethyl ether (methyl Carbitol)	111–77–3
N,N'-Diethylhydrazine	1615–80–1
Diethyl (4-methylumbelliferyl) thionophosphate	299–45–6
Diethyl phosphorothioate	126–75–0
N,N'-Diethylpropionamide	15299–99–7
Dimethoate	60–51–5
2,3-Dimethoxystrychnidin-10-one	357–57–3
4-Dimethylaminoazobenzene	60–11–7
7,12-Dimethylbenz(a)anthracene	57–97–6
3,3-Dimethylbenzidine	119–93–7
Dimethylcarbamoyl chloride	79–44–7
Dimethyldisulfide	624–92–0
Dimethylformamide	68–12–2
1,1-Dimethylhydrazine	57–14–7
Dimethylphthalate	131–11–3
Dimethylsulfone	67–71–0
Dimethylsulfoxide	67–68–5
4,6-Dinitro-o-cresol	534–52–1
1,2-Diphenylhydrazine	122–66–7
Dipropylene glycol (1,1'-oxydi-2-propanol)	110–98–5
Endrin	72–20–8
Epinephrine	51–43–4
mono-Ethanolamine	141–43–5
Ethyl carbamate (urethane)	5–17–96
Ethylene glycol	107–21–1
Ethylene glycol monobutyl ether (butyl Cellosolve)	111–76–2
Ethylene glycol monoethyl ether (Cellosolve)	110–80–5
Ethylene glycol monoethyl ether acetate (Cellosolve acetate)	111–15–9
Ethylene glycol monomethyl ether (methyl Cellosolve)	109–86–4
Ethylene glycol monophenyl ether (phenyl Cellosolve)	122–99–6
Ethylene glycol monopropyl ether (propyl Cellosolve)	2807–30–9
Ethylene thiourea (2-imidazolidinethione)	9–64–57
4-Ethylmorpholine	100–74–3
3-Ethylphenol	620–17–7
Fluoroacetic acid, sodium salt	62–74–8
Formaldehyde	50–00–0
Formamide	75–12–7
Formic acid	64–18–6
Fumaric acid	110–17–8
Glutaric acid	110–94–1
Glycerin (Glycerol)	56–81–5
Glycidol	556–52–5
Glycinamide	598–41–4
Glyphosate	1071–83–6
Guthion	86–50–0
Hexamethylene-1,6-diisocyanate (1,6-diisocyanatohexane)	822–06–0
Hexamethyl phosphoramide	680–31–9
Hexanoic acid	142–62–1
Hydrazine	302–01–2
Hydrocyanic acid	74–90–8
Hydroquinone	123–31–9
Hydroxy-2-propionitrile (hydracrylonitrile)	109–78–4
Indeno (1,2,3-cd) pyrene	193–39–5
Lead acetate	301–04–2
Lead subacetate (lead acetate, monobasic)	1335–32–6
Leucine	61–90–5
Malathion	121–75–5
Maleic acid	110–16–7
Maleic anhydride	108–31–6
Mesityl oxide	141–79–7
Methane sulfonic acid	75–75–2
Methomyl	16752–77–5
p-Methoxyphenol	150–76–5
Methyl acrylate	96–33–3
4,4'-Methylene-bis-(2-chloroaniline)	101–14–4
4,4'-Methylenediphenyl diisocyanate (diphenyl methane diisocyanate)	101–68–8
4,4'-Methylenedianiline	101–77–9
Methylene diphenylamine (MDA).	
5-Methylfurfural	620–02–0

Compound name	CAS No.
Methylhydrazine	60–34–4
Methyliminoacetic acid.	
Methyl methane sulfonate	66–27–3
1-Methyl-2-methoxyaziridine.	
Methylparathion	298–00–0
Methyl sulfuric acid (sulfuric acid, dimethyl ester)	77–78–1
4-Methylthiophenol	106–45–6
Monomethylformamide (N-methylformamide)	123–39–7
Nabam	142–59–6
alpha-Naphthol	90–15–3
beta-Naphthol	135–19–3
alpha-Naphthylamine	134–32–7
beta-Naphthylamine	91–59–8
Neopentyl glycol (dimethylolpropane)	126–30–7
Niacinamide	98–92–0
o-Nitroaniline	88–74–4
Nitroglycerin	55–63–0
2-Nitrophenol	88–75–5
4-Nitrophenol	100–02–7
N-Nitrosodimethylamine	62–75–9
Nitrosoguanidine	674–81–7
N-Nitroso-n-methylurea	684–93–5
N-Nitrosomorpholine (4-nitrosomorpholine)	59–89–2
Oxalic acid	144–62–7
Parathion	56–38–2
Pentaerythritol	115–77–5
Phenacetin	62–44–2
Phenol	108–95–2
Phenylacetic acid	103–82–2
m-Phenylene diamine	108–45–2
o-Phenylene diamine	95–54–5
p-Phenylene diamine	106–50–3
Phenyl mercuric acetate	62–38–4
Phorate	298–02–2
Phthalic anhydride	85–44–9
alpha-Picoline (2-methyl pyridine)	109–06–8
1,3-Propane sulfone	1120–71–4
beta-Propiolactone	57–57–8
Proporur (Baygon).	
Propylene glycol	57–55–6
Pyrene	129–00–0
Pyridinium bromide	39416–48–3
Quinoline	91–22–5
Quinone (p-benzoquinone)	106–51–4
Resorcinol	108–46–3
Simazine	122–34–9
Sodium acetate	127–09–3
Sodium formate	141–53–7
Strychnine	57–24–9
Succinic acid	110–15–6
Succinimide	123–56–8
Sulfanilic acid	121–47–1
Terephthalic acid	100–21–0
Tetraethyldithiopyrophosphate	3689–24–5
Tetraethylenepentamine	112–57–2
Thiofanox	39196–18–4
Thiosemicarbazide	79–19–6
2,4-Toluenediamine	95–80–7
2,6-Toluenediamine	823–40–5
3,4-Toluenediamine	496–72–0
2,4-Toluene diisocyanate	584–84–9
p-Toluic acid	99–94–5
m-Toluidine	108–44–1
1,1,2-Trichloro-1,2,2-trifluoroethane	76–13–1
Triethanolamine	102–71–6
Triethylene glycol dimethyl ether.	
Tripropylene glycol	24800–44–0
Warfarin	81–81–2
3,4-Xylenol (3,4-dimethylphenol)	95–65–8

PART 270—EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

39. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

Subpart B—Permit Application

40. Section 270.14 is amended by revising paragraph (b)(5) to read as follows:

§ 270.14 Contents of part B: General requirements.

* * * * *

(b) * * *

(5) A copy of the general inspection schedule required by § 264.15(b) of this part. Include where applicable, as part of the inspection schedule, specific requirements in §§ 264.174, 264.193(i), 264.195, 264.226, 264.254, 264.273, 264.303, 264.602, 264.1033, 264.1052, 264.1053, 264.1058, 264.1084, 264.1085, 264.1086, and 264.1088 of this part.

* * * * *

[FR Doc. 97–31792 Filed 12–5–97; 8:45 am]

BILLING CODE 6560–50–P

Corrections

Federal Register
Vol. 63, No. 109
Monday, June 8, 1998

This section of the FEDERAL REGISTER contains editorial corrections of previously published Presidential, Rule, Proposed Rule, and Notice documents. These corrections are prepared by the Office of the Federal Register. Agency prepared corrections are issued as signed documents and appear in the appropriate document categories elsewhere in the issue.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[EPA–F–98–2P4F–FFFFF; FRL–6010–5]

RIN 2050 AE05

Land Disposal Restrictions Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters

Correction

In rule document 98–12575 beginning on page 28556 in the issue of Tuesday, May 26, 1998, make the following correction:

Table 1 to Appendix VII [Corrected]

On page 28751, in the third column, in amendatory instruction 19., in the fourth line from the bottom, after ''and'' insert ''adding''.

BILLING CODE 1505-01-D

SOCIAL SECURITY ADMINISTRATION

[Social Security Acquiescence Ruling 98-4(6)]

Drummond v. Commissioner of Social Security; Effect of Prior Findings on Adjudication of a Subsequent Disability Claim Arising Under the Same Title of the Social Security Act–Titles II and XVI of the Social Security Act

Correction

In notice document 98–14265 beginning on page 29771 in the issue of Monday, June 1, 1998, make the following correction:

On page 29771, in the third column, in the 12th and 13th lines, ''*(Insert the* **Federal Register** *publication date)*'' should read ''June 1, 1998''.

BILLING CODE 1505-01-D

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

49 CFR Parts 375 and 377

[Docket No. FHWA-97-2979]

RIN 2125-AE30

Transportation of Household Goods; Consumer Protection Regulations

Correction

In proposed rule document 98–12582, beginning on page 27126, in the issue of Friday, May 15, 1998, make the following correction:

On page 27129, in the table for Part 375—Transportation of Household Goods in Interstate Commerce, the entry for Liability Consideration under Subpart B should read as follows:

PART 375.—TRANSPORTATION OF HOUSEHOLD GOODS IN INTERSTATE COMMERCE

Proposed section	Old section	Title of proposed section
* * * * *		
SUBPART B—BEFORE OFFERING SERVICES TO CUSTOMERS		
Liability Considerations		
375.201	375.12	What is my normal liability for loss and damage when I accept goods from an individual shipper?
375.203	375.12	What actions of an individual shipper may limit or reduce my normal liability?
* * * * *		

BILLING CODE 1505-01-D

Federal Register

Tuesday
May 26, 1998

Part II

Environmental Protection Agency

40 CFR Parts 148, 261, 266, 268, and 271 Land Disposal Restrictions Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261, 266, 268, and 271

[EPA–F–98–2P4F–FFFFF; FRL–6010–5]

RIN 2050 AE05

Land Disposal Restrictions Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: This rule promulgates Land Disposal Restrictions treatment standards for metal-bearing wastes, including toxicity characteristic metal wastes, and hazardous wastes from mineral processing. The set of standards being applied to these wastes is the universal treatment standards. These standards are based upon the performance of the Best Demonstrated Available technologies for treating these, or similar, wastes. This rule also revises the universal treatment standards for twelve metal constituents, which means that listed and characteristic wastes containing one or more of these constituents may have to meet different standards than they currently do.

In a related section regarding wastes and secondary materials from mineral processing, EPA is amending the rules to define which secondary materials from mineral processing are considered to be wastes and potentially subject to Land Disposal Restrictions. The intended effect is to encourage safe recycling of mineral processing secondary materials by reducing regulatory obstacles to recycling, while ensuring that hazardous wastes are properly treated and disposed. EPA also is finalizing decisions on a set of mineral processing issues wastes which courts have been remanded to EPA. These include retaining the Toxicity Characteristic Leaching Procedure as the test for identifying the toxicity characteristic for mineral processing wastes, and readdressing the regulatory status of a number of miscellaneous mineral processing wastes.

This rule also amends the LDR treatment standards for soil contaminated with hazardous waste. The purpose of this revision is to create standards which are more technically and environmentally appropriate to contaminated soils than those which currently apply.

Finally, this rule excludes from the definition of solid waste certain shredded circuit boards in recycling operations, as well as certain materials reused in wood preserving operations.

EFFECTIVE DATES: This final rule is effective on August 24, 1998.

Compliance dates:

—For prohibition on underground injection of certain wastes at 40 CFR 148.18: May 26, 2000;

—For definition of solid waste provisions at 40 CFR 261.2, 261.4(a)(15), and 261.4(b): November 27, 1998;

—For exclusion of recycled wood preserving wastewaters at 40 CFR 261.4(a)(9): May 26, 1998;

—For prohibition on land disposal of wastes from elemental phosphorus processing and on mixed radioactive wastes at 40 CFR 268.34(b): May 26, 2000; and

—For land Disposal Restrictions treatment standards at 40 CFR 268.49 for soil contaminated with previously prohibited wastes: May 26, 1998.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, Virginia. The docket information number is F–98–2P4F–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. The index and some supporting materials are available electronically. See the ''Supplementary Information'' section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C. metropolitan area, call (703) 412–9810 or TDD (703) 412–3323.

For more detailed information on specific aspects of this rulemaking, contact the Waste Treatment Branch (5302W), Office of Solid Waste (OSW), U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460; phone (703) 308–8434. For information on the issue of treatment standards for metal-bearing wastes, contact Elaine Eby (703) 308–8449 or Anita Cummings at (703) 308–8303. For questions on land disposal restrictions (LDR) treatment standards for mineral processing wastes, radioactive mixed wastes, and grab versus composite sampling methods, contact Anita Cummings at (703) 308–8303. For information on treatment standards for manufactured gas plant wastes, contact Rita Chow at (703) 308–6158. Contact Rhonda Minnick at (703) 308–8771 for information on improvements and corrections to the Land Disposal Restrictions. For information on secondary mineral processing materials and Bevill issues, call Ashley Allen at 703–308–8419 or Stephen Hoffman of the Industrial and Extractive Wastes Branch at (703) 308–8413. For questions on treatment standards for hazardous soil, contact Elizabeth McManus of the Permits and State Programs Division at (703) 308–8657. Contact Stephen Bergman of the Hazardous Waste Identification Division at (703) 308–7262 for questions on the exclusion for wood preserving wastewaters. For information on the capacity analyses, contact Bill Kline at (703) 308–8440 or C. Pan Lee at (703) 308–8478. For questions on the regulatory impact analyses, contact Paul Borst at (703) 308–0481. For other questions, call Sue Slotnick at (703) 308–8462.

SUPPLEMENTARY INFORMATION:

Availability of Rule on the Internet: Please follow these instructions to access the rule: From the World Wide Web (WWW), type http://www.epa.gov/rules and regulations. In addition, several technical background documents contained in the docket supporting this rule will be available on the Internet at http://www.epa.gov/offices and regions/oswer.

Table of Contents

I. Introduction to the Phase IV Rule

In the 1984 Hazardous and Solid Waste Amendments (HSWA) to the Resource Conservation and Recovery Act (RCRA), Congress specified that land disposal of hazardous waste is prohibited unless the waste first meets

treatment standards established by EPA or is disposed in units from which there will be no migration of hazardous constituents for as long as the waste remains hazardous. The HSWA amendments require that treatment standards must substantially diminish the toxicity or mobility of hazardous waste, so that short- and long-term threats to human health and the environment are minimized.

Today's Phase IV final rule is the latest in a series of LDR rules that establish treatment standards for wastes identified or listed as hazardous after the date of the 1984 amendments. (See RCRA § 3004(g)(4)). EPA proposed the Phase IV rule in four **Federal Register** notices, and issued three NODAs setting out additional data relevant to this proceeding. In two **Federal Register** notices prior to today's, EPA promulgated various rules proposed in the Phase IV proposals: treatment standards for wood preserving wastes, paperwork reduction, and clarification of treatability variances. Today's final rule promulgates regulations addressing most of the remaining issues discussed in Phase IV proposals and NODAs. The table at the end of this introduction lists references for all the Phase IV Notices, plus others cited frequently in the preamble.

This final Phase IV preamble contains five major, interrelated sections. The first section explains the new land disposal restrictions treatment standards for wastes identified as hazardous because they exhibit the toxicity characteristic for metals (referred to as ''TC metal wastes''). The section also revises the universal treatment standards (UTS) for 12 metal constituents in all hazardous wastes. The TC metal wastes will now be required to meet the universal treatment standards as do most other hazardous wastes. The second major preamble section establishes the prohibition on land disposal plus treatment standards for a particular type of newly identified hazardous waste: mineral processing waste that exhibits a characteristic of hazardous waste. The third section addresses additional issues affecting both TC metal wastes and characteristic mineral processing wastes. The fourth section amends the rules defining when secondary materials being recycled are solid wastes. It states that secondary materials from mineral processing which are generated and reclaimed within that industry are not solid wastes unless they are managed in land disposal units before being reclaimed. Such materials are not subject to regulation as hazardous wastes. That part of the preamble also addresses other issues related to mineral processing. The final major preamble section promulgates amended treatment standards for soil that contains hazardous waste or which exhibits a characteristic of hazardous waste.

Today's rule also includes two brief sections on hazardous waste issues unrelated to the major sections. One clarifies that a previously-promulgated exclusion from hazardous waste regulation for recycled shredded circuit boards also applies to whole circuit boards under certain conditions. The other section promulgates an exclusion from RCRA jurisdiction for certain wood preserving wastewaters and spent wood preserving solutions when recycled.

TABLE OF SELECTED LDR FEDERAL REGISTER NOTICES

Common name	Title of rule in FEDERAL REGISTER	Date	Citation
Third Third LDR Final Rule	Land Disposal Restrictions for Third Third Scheduled Wastes; Rule.	June 1, 1990	55 FR 22520.
Phase II LDR Proposal	Land Disposal Restrictions for Newly Identified and Listed hazardous Waste and hazardous soil; Proposed Rule.	September 14, 1993	58 FR 48092.
Phase III LDR Proposal	Land Disposal Restrictions Phase III: Decharacterized Wastewaters, Carbamate and Organobromine Wastes, and Spent Potliners; Proposed Rule.	March 2, 1995	60 FR 11702.
Phase IV Original Proposal	Land Disposal Restrictions—Phase IV: Issues Associated With Clean Water Act Treatment Equivalency, and Treatment Standards for Wood Preserving Wastes and Toxicity Characteristic Metal Wastes; Proposed Rule.	August 22, 1995	60 FR 43654.
Phase IV First Supplemental Proposal.	Land Disposal Restrictions—Clarification of Bevill Exclusion for Mining Wastes, to the Definition of Solid Waste for Mineral Processing Wastes, Treatment Standards for Characteristic Mineral Processing Wastes, and Associated Issues.	January 25, 1996	61 FR 2338.
HWIR Media Proposal	Requirements for Management of Hazardous Contaminated Media.	April 29, 1996	61 FR 11804.
Phase IV NODA #1	Land Disposal Restrictions Phase IV Proposed Rule—Issues Associated With Clean Water Act Treatment Equivalency, and Treatment Standards for Wood Preserving Wastes and Toxicity Characteristic Metal Wastes; Notice of Data Availability.	May 10, 1996	61 FR 21417.
Phase IV NODA #2	Land Disposal Restrictions—Phase IV: Treatment Standards for Characteristic Metal Wastes; Notice of Data Availability.	March 5, 1997	FR 62 10004.
Phase IV LDR Wood Preserving Final Rule.	Land Disposal Restrictions Phase IV: Treatment Standards for Wood Preserving Waste, Paperwork Reduction and Streamlining, Exemptions from RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions; Final Rule.	May 12, 1997	62 FR 25998.
Phase IV Second Supplemental Proposal.	Land Disposal Restrictions Phase IV: Second Supplemental Proposal on Treatment Standards for Metal Wastes and Mineral Processing Wastes, Mineral Processing and Bevill Exclusion Issues, and the Use of Hazardous Waste as Fill.	May 12, 1997	62 FR 26041.

TABLE OF SELECTED LDR FEDERAL REGISTER NOTICES—Continued

Common name	Title of rule in FEDERAL REGISTER	Date	Citation
Phase IV NODA #3	Land Disposal Restrictions Phase IV: Second Supplemental Proposal on Treatment Standards for Metal Wastes and Mineral Processing Wastes, Mineral Processing and Bevill Exclusion Issues, and the Use of Hazardous Waste as Fill; Notice of Data Availability.	November 10, 1997	62 FR 60465.
Treatability Variance Final Rule	Clarification of Standards for Hazardous Waste Land Disposal Restriction Treatment Variances.	December 5, 1997	62 FR 64504.

II. Potentially Regulated Entities

Entities potentially regulated by this final rule vary according to the section of the rule. The following table shows the industry categories that may be regulated according to each major section of the rule. The table is not intended to be exhaustive or definitive with respect to every case-specific circumstance. Rather, it is a general guide for readers regarding entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated, and failure to mention them in the table should not be taken as any type of regulatory determination on the part of the Agency.

TABLE OF ENTITIES POTENTIALLY AFFECTED BY THE PHASE IV FINAL RULE

Section of the rule	Category	Examples of entities potentially affected
LDR treatment standards for TC metal hazardous wastes, characteristic mineral processing wastes, and other metal-bearing wastes.	Generators of Toxicity Characteristic (TC) metal hazardous wastes (D004—D011), characteristic mineral processing waste, or any hazardous waste required to meet the LDR treatment standard for antimony, barium, beryllium, cadmium, chromium, lead, nickel, selenium, silver, thallium, vanadium, or zinc.	Facilities in the following industries: primary mineral processing, chemical manufacturers, pharmaceutical producers, paint producers, manufacturers of motor vehicle parts, blast furnaces and steel mills, metal plating and polishing, and aircraft parts and equipment.
	Facilities that treat and/or dispose of TC metal hazardous wastes, characteristic mineral processing wastes, and other metal-bearing hazardous wastes.	Hazardous waste treatment and disposal facilities.
LDR treatment standards for hazardous soil.	Entities managing hazardous soil	Private or public parties remediating sites containing hazardous soil
Mineral Processing Secondary Materials	Facilities that generate, store, and/or recycle secondary materials from primary mineral processing.	Copper smelters, gold refiners, and other primary metals producers that return wastestreams to units for additional recovery
Exclusion for Recycled Wood Preserving Process Wastewaters.	Wood Preserving Facilities	Facilities that generate and reclaim drippage and wastewaters on-site from the wood processing industry.

III. Revised Land Disposal Restrictions (i.e., Universal Treatment Standards) for Metal Constituents in all Hazardous Wastes, Including Toxic Characteristic Metals

Summary

There are two purposes to today's new treatment standards for metal-containing wastes. First, EPA is revising the numerical standards because new data are available on which to base more accurate standards. Second, EPA is including a new set of wastes in the current treatment standard regime, continuing EPA's efforts to apply the same LDR treatment standards when technically and legally possible. (In a subsequent section of this rule, EPA is expanding the treatment standard regime to include yet another set of wastes. These are characteristic mineral processing wastes that are not currently subject to land disposal restrictions.)

The numerical standards that EPA is revising are the universal treatment standards (UTS) for 12 metal constituents. The new UTS will apply to nonwastewater forms of any listed or characteristic hazardous waste that is already required to meet the UTS for those constituents in the waste. The revised UTS are less stringent for 7 constituents, and more stringent for 5. The rule does not affect the UTS for wastewater forms of these wastes, and does not change the UTS for any other constituents, including any of the organics.

The new set of wastes that EPA is bringing into the current LDR regime is the group of 8 wastes known as TC metal wastes—wastes identified as hazardous because they exhibit the toxicity characteristic due to the presence of the metals enumerated in 261.24 (Waste codes D004–D011). These are wastes that exhibit the toxicity characteristic because of high toxic metal content. By today's rule, that key metal must be treated to the UTS for that metal. Furthermore, any underlying hazardous constituents (UHCs) must be treated to UTS levels as well, whether these UHCs are organics or metals. Both wastewater and nonwastewater forms of the TC metal wastes are affected by today's rule, except for arsenic, for which only the wastewater forms are affected.

Hazardous wastes that exhibit both the TC for metals and the predecessor characteristic based on the Extraction Procedure (EP) are presently only required to be treated to reduce metal levels to below the characteristic level. Today's rule, for the most part, will require additional treatment of these metal constituents before land disposal can occur.

The Agency also finds that the treatment standards established in

today's rule are not established below levels at which threats to human health and the environment are minimized. See *Hazardous Waste Treatment Council v. EPA*, 886 F.2d 355, 362 (D.C. Cir. 1990). That case held that the statute can be read to allow either technology-based or risk-based LDR treatment standards, and further held that technology-based standards are permissible so long as they are not established ''beyond the point at which there is no 'threat' to human health or the environment.'' *Id*. at 362. EPA's finding that today's standards are not below a ''minimize threat'' level is based on the Agency's inability at the present time to establish concentration levels for hazardous constituents which represent levels at which threats to human health and the environment are minimized. As the Agency has explained a number of times, determining these levels on a national basis—which requires determination of relevant exposure pathways and potential receptors for all hazardous constituents in hazardous wastes, with all the attendant uncertainties involved in such a national determination—has not yet proven possible. See, *e.g.*, 55 FR at 6642 (February 26, 1990). Thus, the Agency continues to find that technology-based standards remain the best approach for the national treatment standards since such standards eliminate as much of the inherent uncertainty of hazardous waste land disposal and so fulfill the Congressional intent in promulgating the land disposal restrictions provisions. *Id*. However, the Agency believes that it may be possible to make valid determinations that threats to human health and the environment are minimized on an individualized basis in the context of certain site-specific remediations, and accordingly has provided in this rule a variance from technology-based treatment requirements for contaminated soils generated in certain remediations. See section VII below.

A. History of Metal Treatment Standards

Land disposal of hazardous wastes is largely prohibited by statute, unless the wastes meet the applicable treatment standards established by EPA prior to land disposal. See RCRA sections 3004(d)–(g), (m); (the exception for no-migration units is not relevant to today's rule). Until today's rule, metals that were characteristic because they failed the Toxicity Characteristic Leaching Procedure (TCLP) and also failed the Extraction Procedure (EP)—which preceded the use of the TCLP as a means of identifying whether a waste exhibited a characteristic of hazardous waste—were subject to treatment standards at levels equal to the TC levels (55 FR 22520, June 1, 1990). (Note that wastes that were characteristic according to the TCLP but did not fail the EP were considered, until promulgation of today's rule, to be newly identified wastes, and were not subject to the LDR requirements. Today's rule makes these wastes subject to LDR). However, the TC levels are typically higher than those treatment levels for which threats posed by land disposal of the wastes are minimized. (*Waste Management v. EPA*, 976 F.2d 2, 13–14, 26–27, 32 (D.C. Cir. 1992). Consequently, treatment to levels lower than the characteristic levels normally is required. *Id*.

In an effort to make treatment standards as uniform as possible while adhering to the fundamental requirement that the standards must minimize threats to human health and the environment, EPA developed the UTS. Under the UTS, whenever technically and legally possible, the Agency adopts the same technology-based numerical limit for a hazardous constituent regardless of the type of hazardous waste in which the constituent is present (see 40 CFR 268.40; and 59 FR 47982, September 19, 1994). In the original Phase IV proposal, EPA proposed to apply the metal UTS, as measured by the TCLP (60 FR 43582, August 22, 1995; see 40 CFR 261.24), to all TC metal wastes. The TCLP measures the possibility that a waste may leach toxic metals above a designated concentration level under certain assumed disposal conditions, and so is a measure of the potential mobility of toxic metals in a waste.

Commenters in response to the original proposal took issue with the Agency's use of data previously used to establish metal UTS as a basis for establishing the treatment standards for characteristic metal wastes. The commenters raised three basic issues with regard to the data transfer. First, they said that characteristic metal wastes are extremely variable and the data used to calculate the treatment standards were not representative of the diversity of TC metal wastes. Second, the commenters said that although two treatment technologies—high temperature metals recovery (HTMR) and stabilization—were determined to be Best Demonstrated Available Technology (BDAT), the current metals UTS were based solely on HTMR, a technology not commercially available for many TC metal wastes. Finally, commenters asserted that individual metal UTS values were not uniformly achievable when waste streams with multiple toxic metals were being treated. In light of these concerns, the commenters urged the Agency to obtain additional data that would demonstrate the effectiveness of stabilization on TC metal waste streams and more fully characterize the diversity of treatment of these nonwastewaters. The following commenters provided the Agency with stabilization performance data: Battery Council International, American Foundrymen's Association, Chemical Waste Management, and the Environmental Treatment Council. While extensive, the data unfortunately was based on composite samples and could not be used as the basis for treatment standards (see USEPA, Final Best Demonstrated Available Technology (BDAT) Background Document for Quality Assurance/ Quality Control Procedures and Methodology, Office of Solid Waste, October 23, 1991 and 62 FR 26041 for a discussion of grab and composite sampling).

The Agency, however, was convinced that additional data were needed to further assess the treatment of TC metal nonwastewaters. During September 1996, EPA conducted site visits at three hazardous waste treatment facilities and collected additional treatment performance data. One facility was a large commercial TSDF that employed conventional stabilization techniques to treat a wide array of inorganic metal wastes. Another was an on-site treatment facility that focused on the stabilization of inorganic metal slag. A third facility was commercial and focused on stabilization of inorganic materials using non-conventional stabilization techniques. During these site visits, the Agency either gathered performance data from company records or requested the collection of actual treatment performance data through sampling and analysis.

Treatment data were collected for the following types of hazardous waste: mineral processing waste, baghouse dust, battery slag, soils, pot solids, recycling by-products, and sludge. See the memorandum, Final Revised Calculation of Treatment Standards Using Data Obtained From Rollins Environmental's Highway 36 Commercial Waste Treatment Facility and GNB's Frisco, Texas Waste Treatment Facility, March 10, 1997 and the memorandum, Transferability of UTS to Mineral Processing Wastes, January 28, 1997 for a complete description of the waste constituents and concentrations. Most of the wastes contained multiple metals in various concentrations while some had

significant concentrations of typically two metal combinations, including lead and cadmium, barium and lead, and chromium and antimony. In addition, between October 1994 and December 1995, the Agency obtained performance data from one HTMR facility; (other HTMR data became available very late in 1997). The assessment of the new data sets began with the calculation of treatment standards for each of the two data sets representing stabilization and HTMR. The same methodology, sometimes called ''C 99,'' and used in past LDR rulemakings, was used to calculate the treatment levels (see 56 FR 41164, August 18, 1991, and the BDAT Background Document for K061, dated August, 1991). Next, the Agency compared the treatment levels for stabilization verses HTMR. Based on this comparison, the Agency selected the highest level for each metal as the proposed UTS to allow for waste and process variability and detection limit difficulties. This approach is consistent with the legislative goal of providing substantial treatment through standards that are achievable by an array of well-performing, available treatment technologies. See 130 Cong. Rec. S 9184 (Daily ed., July 25, 1984) (statement of Senator Chafee).

As a result, the Agency issued a Second Supplemental Proposal on May 12, 1997 (62 FR 26041). In it, EPA proposed to change the numerical limits for all nonwastewater wastes containing the following metal constituents: antimony, barium, beryllium, cadmium, chromium, lead, nickel, selenium, silver, and thallium. (62 FR at 26047, May 12, 1997). The Agency also reproposed to change the numerical limits for vanadium in P119 and P120 nonwastewaters, and for zinc in K061 nonwastewaters. (62 FR at 26047, May 12, 1997). EPA also proposed these same UTS treatment standards for TC metal wastes identified as hazardous due to concentrations of barium, cadmium, chromium, lead, selenium and silver.

The Agency would like to correct in today's rule a prior error that was discovered in calculating the metals treatment levels using the HTMR treatment data. As previously stated, in the Second Supplemental and in today's preamble, in determining the treatment levels for each metal constituent, the Agency compared the treatment standards calculated with data from HTMR and stabilization. Based on this comparison, the highest level for each metal was chosen as the treatment standard. In reviewing the calculations from the HTMR data set, the Agency discovered an error in the calculations. When applying the methodology presented in USEPA, ''Final Best Demonstrated Technology (BDAT) Background Document for Quality Assurance/Quality Control Procedures and Methodology,'' dated October 23, 1991, it was discovered that the Agency failed to conduct a ''Z-score test'' to remove any outliers—data that is either so high or so low that it is not considered to be representative of the population from which the data are drawn. EPA uses this statistical method to confirm that certain data do not represent treatment by a well-operated system, or reflect anomalously low levels which are not typically achievable. This error was found to have occurred only in the calculation of the treatment standards based on the performance of HTMR; the treatment standards based on the performance of stabilization were properly calculated. The proposed treatment standards for cadmium, chromium, nickel, and silver were affected. The application of the Z-score outlier test resulted in 2 data points out of 40 being eliminated as outliers for both cadmium and chromium. For nickel, 5 out of 122 data points were identified as outliers.

For silver, 3 out of 114 data points were identified as outliers. Three of the resulting, calculated treatment standards changed slightly and are slightly more stringent than the proposed standards: cadmium from proposed 0.20 to corrected 0.11 mg/L TCLP; chromium from proposed 0.85 to corrected 0.60 mg/L TCLP; and nickel from proposed 13.6 to corrected 11 mg/L TCLP. Silver, on the other hand, changed from the proposed 0.11 mg/L TCLP to a corrected, slightly less stringent 0.14 mg/L TCLP. (Note: In re-calculating this standard, the Agency added an additional 74 data points which were submitted by the INMETCO Company (a high temperature metal reclaimer) in their comments to the May 12 supplemental proposal.) The Agency believes that these re-calculations are not significant because these four revised standards are each still achievable. See Memorandum, ''Calculation of Universal Treatment Standard (UTS) for HTMR Residues Using Data Submitted by Horsehead Research Development (HRD) Co., Inc. And INMETCO,'' December 17, 1997.

B. Applicability of Metal Treatment Standards

As noted earlier, today's rule finalizes LDR treatment standards in two ways. First, it revises the UTS levels for 10 metal constituents in nonwastewater forms of hazardous wastes. The 10 include antimony, barium, beryllium, cadmium, chromium, lead, nickel, selenium, silver, and thallium. These treatment standards will replace the existing UTS values. In addition, EPA is applying UTS for the first time to 8 TC metal wastes: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. The UTS apply to both wastewater and nonwastewater forms of the wastes (except for TC arsenic wastes, for which the UTS apply to wastewater forms only), and to both organic and metal underlying hazardous constituents in them. No TC metal wastes have had to meet standards for underlying hazardous constituents before today, and wastes exhibiting only the TC and not the EP were not yet prohibited. (Note, some subcategories of mercury and arsenic TC metal wastes have treatment methods requiring use of a specified technology, and are not affected by today's rule.) The Agency is also adjusting the treatment standards for vanadium in P019 and P020 nonwastewaters as well as zinc in K061 nonwastewaters.

The metal treatment standards being promulgated today have broad applicability. They apply to the following metal-containing hazardous wastes: (1) characteristic metal wastes, including both the newly identified wastes that, heretofore, were not prohibited from land disposal; and metal wastes that were identified as hazardous under the predecessor leaching protocol, the Extraction Procedure (EP), which remain hazardous because they also exhibit the TC by the TCLP; (2) mineral processing wastes which exhibit the toxicity characteristic for metal (this is actually a subset of wastes in (1) above); (3) listed hazardous wastes which have metal constituents; (4) underlying hazardous constituents (UHCs) that are metals in any characteristic hazardous waste (including mineral processing waste which exhibit a characteristic) that is disposed in other than a Clean Water Act (CWA) or CWA-equivalent wastewater treatment system (see 40 CFR 268.2(i); 59 FR 47982, September 19, 1994); and (5) radioactive wastes mixed with the wastes mentioned in (1)–(4) above.

C. Development of New Treatment Standards for Hazardous Wastes Containing Metals

1. Measuring Compliance by Grab or Composite Sampling

As explained in the May 12, 1997 Second Supplemental Phase IV proposal, EPA establishes treatment standards using data obtained by grab sampling, not composite sampling, and

likewise assesses compliance with these standards using grab sampling. 62 FR at 26047. This approach was sustained by the D.C. Circuit Court of Appeals in *Chemical Waste Management v. EPA*, 976 F. 2d at 34, and EPA did not and is not reopening the issue in this proceeding. The Agency has now obtained requisite grab sampling data. As a result, the treatment standards promulgated in this rule are all based upon treatment performance that was measured through the use of grab sampling. All compliance likewise will be based on grab sampling.

2. Development of Treatment Standards for Metal Wastes

All of the metals described below are on the UTS list and some are also TC metals. This section discusses development of both the TC and UTS treatment standard levels. The Agency is presenting the metal treatment standards alphabetically by constituent. Depending on the constituent, one or more treatment standards is discussed. For example in the section entitled, ''Treatment Standards for Barium Waste,'' the Agency discusses the promulgation of three treatment standards: (1) 21 mg/L TCLP for nonwastewater forms of D005 waste (based on the UTS); (2) 1.2 mg/L for wastewater forms of D005 waste (also based on the UTS); and (3) a revised UTS of 21 mg/L TCLP for barium nonwastewaters. If a metal constituent is not one of the TC metals, its presence cannot be the basis for determining if a waste exhibits the toxicity characteristic—but it could be an underlying hazardous constituent in the waste, in which case that constituent would need to meet the standard for that metal in today's rule before the waste could be land disposed.

a. Final Universal Treatment Standard for Nonwastewater Forms of Antimony. The Agency proposed in the Second Supplemental (62 FR 26041, May 12, 1997), to change the UTS for nonwastewaters containing antimony from 2.1 mg/L TCLP to 0.07 mg/L TCLP. This proposed change was a result of new data collection efforts conducted by the Agency to gather performance data that was representative of the diversity of metal-containing wastes.

In response, the Agency received several comments. Two commenters supported the proposed change; however the remaining commenters argued against the proposed level for antimony of 0.07 mg/L TCLP for a number of reasons. One commercial waste management facility stated that very few of the waste streams they treat using conventional stabilization techniques, including furnace ash, incinerator ash, scrubber brine sludge, furnace baghouse dust, and stripper rinse waters, would meet the proposed standard. The commenter submitted 48 data points supporting its claim. A third commenter stated that meeting the standard would significantly increase their compliance costs. Another stated that commercial stabilization techniques were not capable of meeting the proposed UTS for antimony. In general, these commenters suggested a higher UTS for antimony in the range of 1.3 mg/L TCLP to 2.98 mg/L TCLP.

In response to the commenters' concerns regarding the difficulty in treating antimony wastes, the Agency has conducted a thorough review of its BDAT data set and has determined that while it represents a diverse collection of waste streams containing metals, the concentration of antimony in the 9 data points used to calculate the proposed standard may not be representative of the most difficult to treat antimony waste. The data used by the Agency to calculate the proposed UTS of 0.07 mg/L TCLP, showed a range of antimony concentrations in the untreated waste of between 0.2440 mg/L TCLP and 16.1 mg/L TCLP. While the Agency, at the time, believed that these data were sufficient to establish a treatment standard, new data submitted by a commercial hazardous waste treatment facility provide a compelling argument to amend this standard. The new data consist of 48 additional data points representing various multiple metal waste streams, including incinerator or furnace ash, scrubber brine sludge, lab pack waste, stripper rinse water and baghouse dust. These wastes have all been treated with conventional stabilization techniques and meet the proposed UTS values for all metal constituents except for antimony. The Agency has reviewed the data, the treatment technology, and the QA/QC information submitted by the commenter and believes that the data should be incorporated into the existing BDAT data set. After doing so, the Agency recalculated the treatment standard for antimony nonwastewaters and is today promulgating a revised standard of 1.15 mg/L TCLP. All data available to the Agency indicate that the revised treatment standard for antimony nonwastewaters can be achieved by either stabilization or HTMR processes and addresses the commenter's concerns.

*b. Treatment Standard for Wastewater Forms of Arsenic Waste.*The Agency proposed in the original Phase IV proposal (60 FR 43683, August 22, 1995), to change the treatment standard for wastewater forms of toxicity characteristic arsenic (D004) waste from the characteristic level of 5.0 mg/L established in the Third Third rule (55 FR 22520 June 1, 1990) to the previously promulgated UTS for arsenic wastewaters of 1.4 mg/L. The Agency did not propose to change the treatment standard for nonwastewater forms of toxicity characteristic arsenic (D004) waste in that the UTS of 5.0 mg/L TCLP was the same as the TC level. The Agency received no comment on the proposed change to D004 wastewaters. Therefore, the Agency is today promulgating as proposed the UTS standard of 1.4 mg/L for D004 wastewaters.

c. Treatment Standards for Barium Waste. (i) Treatment standards for TC Barium (D005) Waste. In 60 FR 43684 (August 22, 1995), EPA proposed to change the treatment standards for wastewater forms of TC metal barium waste (D005) from the characteristic level of 100 mg/L (established in the Third Third rule, 55 FR 22520, June 1, 1990) to the previously promulgated UTS for barium of 1.2 mg/L. Likewise, EPA proposed for D005 nonwastewaters a change from the characteristic level of 100 mg/L TCLP (55 FR 22520, June 1, 1990) to the previously promulgated UTS of 7.6 mg/L TCLP. In support of these revised treatment standards, the Agency had performed a comprehensive re-evaluation of the available treatment performance data from wastes containing significant concentrations of barium.

For D005 wastewaters, the Agency determined that the existing UTS level for barium (1.2 mg/L) was appropriate, based on the performance of lime conditioning followed by sedimentation and filtration as BDAT. For D005 nonwastewaters, the Agency determined that the existing UTS level of 7.6 mg/L TCLP, based on treatment of barium in K061 (electric arc furnace dust) using HTMR was also appropriate. The Agency believed that these treatment standards could be routinely met by industry. Additionally, the Agency reviewed stabilization data and determined that the treatment standards for barium could be achieved by stabilization for a wide variety of waste matrices. (See Proposed Best Demonstrated Available Technology (BDAT) Background Document for Toxicity Characteristic Metal Wastes D004–D011, July 26, 1995.)

The Agency received no significant comment on the proposed change to the wastewater standard for D005. However, as previously discussed in Section III.A of today's rule, new data collection efforts and new analysis of BDAT data

for nonwastewaters resulted in a reproposal of the barium treatment standard in the Phase IV Second Supplement (62 FR 26047) . In this notice, the Agency proposed to revise the treatment standard for barium nonwastewaters to 21 mg/L TCLP based on stabilization. The Agency received no comments in response to the reproposal. Therefore, the Agency today is promulgating a nonwastewater treatment standard of 21 mg/L TCLP as proposed in 62 FR 26041. In addition, the treatment standard of 1.2 mg/L for wastewater forms of D005 is promulgated as proposed in 60 FR 43654.

(ii) Universal Treatment Standard (UTS) for Barium Nonwastewaters. (Please refer to the discussion above about the development of the treatment standard for D005 for additional information on the development of the barium UTS levels.) The Agency proposed to change the UTS for barium nonwastewaters from 7.6 mg/L to 21 mg/L TCLP (see 62 FR 26041). It was proposed that such a treatment standard would better reflect the diversity of metal-containing waste streams and their treatment.

The Agency received no significant comment in response to the reproposal. Therefore, the Agency is today promulgating a nonwastewater UTS of 21 mg/L TCLP, as proposed.

d. Final Universal Treatment Standard for Nonwastewater Forms of Beryllium Waste. The Agency proposed in the original Phase IV proposal (60 FR 43683, August 22, 1995), to revise the UTS for nonwastewaters containing beryllium from 0.014 mg/L TCLP to 0.04 mg/L TCLP. As previously discussed, new data collection efforts and new analysis of BDAT data resulted in a reproposal of the beryllium treatment standard to 0.02 mg/L TCLP in the Phase IV Second Supplemental (62 FR 26041, May 12, 1997).

The Agency received numerous comments on the proposed revision. One commenter supported the proposed treatment level for beryllium, but stated that current stabilization technologies could achieve lower treatment levels. Several other commenters stated that while the proposed standard for beryllium was consistent with the data considered by the Agency, the stabilization data for beryllium were quite limited and reflected the treatment of wastes having very low beryllium content. Commenters further questioned whether the proposed standard of 0.02 mg/L TCLP could be met by conventional stabilization techniques if higher concentrations of beryllium were treated. Other commenters stated that they could not support the treatment standards because EPA has not demonstrated that existing commercial technologies were capable of achieving the proposed standards or that technologies were otherwise available.

In light of the comments received, the Agency conducted a review of the data set used to calculate the proposed standard. The review indicated that, consistent with the commenter's concerns, the data used by the Agency to calculate the standard were based on wastes containing low concentrations of beryllium (between 0.0050 and 0.5 mg/L TCLP). These concentration levels and the subsequent treatment standard developed from them does not appear to adequately account for the difficulty in treating wastes containing higher concentrations of beryllium. Data generated and submitted by Brush Wellman, Inc., consisting of seven data points, showed characteristic wastes (D008) with concentrations of beryllium ranging from 32 to 95 mg/L TCLP. When treated with conventional stabilization techniques, treatment resulted in beryllium levels ranging from 0.05 mg/L to 0.31 mg/L TCLP. As a result of these data, the proposed UTS for beryllium must be revised to reflect a more difficult-to-treat or high-concentration beryllium waste. Accordingly, the Agency is today promulgating a revised UTS for beryllium nonwastewaters of 1.22 mg/L based on this newly acquired data. All treatment performance data available to the Agency indicates that this revised treatment standard can be met, thereby addressing concerns raised by the commenters to the proposal. It should be noted that the UTS for beryllium wastewaters remains unchanged at 0.82 mg/L.

e. Treatment Standards for Cadmium Wastes. (i) Treatment standards for TC Cadmium (D006) Waste. The Agency proposed to change the treatment standards for wastewater forms of TC cadmium (D006) waste from the characteristic level of 1.0 mg/L (established in the Third Third rule (55 FR 22520. June 1, 1990) to the previously promulgated UTS for cadmium wastewaters of 0.69 mg/L. EPA also proposed to change the treatment standard for D006 nonwastewaters from the characteristic level of 1.0 mg/L TCLP (55 FR 22520 (June 1,1990)) to the previously promulgated UTS for cadmium nonwastewaters of 0.19 mg/L TCLP. In support of these revised treatment standards, the Agency had performed a comprehensive re-evaluation of the available treatment performance data from wastes containing significant concentrations of cadmium.

For D006 wastewaters, the Agency determined that the existing UTS for cadmium (0.69 mg/L) based on a BDAT of lime conditioning followed by sedimentation was appropriate. The treatment standard for nonwastewater forms of D006 wastes was based on a transfer from the UTS for cadmium of 0.19 mg/L TCLP based on the K061–HTMR treatment standard data. The Agency chose to use these data because they represented performance of an HTMR treatment unit. The UTS based on K061–HTMR could be routinely met by industry. Additionally the Agency reviewed stabilization performance data and determined that the UTS for cadmium could be achieved by stabilization for a wide variety of waste matrices. See Proposed Best Demonstrated Available Technology (BDAT) Background Document for Toxicity Characteristic Metal Waste D004–D011 (July 26, 1995).

The Agency received no comments on the proposed change to the wastewater standard for D006. However, for reasons previously discussed in Section III.A of today's preamble, the Agency in the Phase IV Second Supplemental proposed to revise the treatment standard for cadmium nonwastewaters to 0.20 mg/L TCLP based on HTMR.

All comments received in response to the revised standard for cadmium supported the change. However, as discussed earlier in Section III.A of today's preamble, the Agency discovered an error in the calculation of the treatment standard. In applying the LDR methodology for calculating a treatment standard, the Agency failed to conduct a ''Z-score'' outlier test. With the application of this test, 2 out of the 40 data points were determined to be outliers, resulting in a revised treatment standard for cadmium nonwastewaters of 0.11 mg/L TCLP. (The proposed treatment standard of 0.20 mg/L TCLP was based on all 40 data points.) The Agency has reviewed the comments in light of this amended treatment standard and believes that it can be achieved by both HTMR and stabilization treatment. Data submitted by commenters in support of this rule does clearly indicate that the standard can be achieved. See supporting information contained in docket for this rule. Therefore, the Agency is today promulgating a nonwastewater treatment standard of 0.11 mg/L TCLP for D006. In addition, the treatment standard of 0.69 mg/L for wastewater forms of D006 waste is being promulgated as proposed in 60 FR 43654.

(ii) Universal Treatment Standard (UTS) for Nonwastewaters Containing Cadmium. The reader is referred to the above discussion about the development of the treatment standard for D006 nonwastewaters for additional information of the development of the UTS level for cadmium nonwastewaters. EPA is promulgating an UTS of 0.11 mg/L TCLP for nonwastewaters containing cadmium. No change was proposed for the cadmium wastewater UTS; therefore it remains at 0.69 mg/L.

f. Treatment Standards for Chromium Wastes. (i) Treatment Standards for TC Chromium Wastes (D007). In 60 FR 43654 (August 22, 1995), the Agency proposed to change the treatment standards for wastewater forms of toxicity characteristic chromium (D007) waste from the characteristic level of 5.0 mg/L (established in the Third Third rule (55 FR 22520. June 1, 1990) to the previously promulgated UTS for chromium (total) wastewaters of 2.77 mg/L. EPA also proposed to change the treatment standards for D007 nonwastewaters from the characteristic level of 5.0 mg/L TCLP (55 FR 22520, June 1,1990) (a standard remanded by the D.C. Circuit as insufficiently stringent in *Chemical Waste Management v. EPA*, 976 F. 2d at 32) to the previously promulgated UTS for nonwastewater forms of chromium (total) of 0.86 mg/L TCLP. In support of these revised standards, the Agency had performed a comprehensive re-evaluation of the available treatment performance data from wastes containing significant concentrations of chromium.

For D007 wastewaters, the Agency determined that the existing UTS (2.77 mg/L) based on a BDAT of lime conditioning followed by sedimentation was appropriate. The treatment standard for D007 nonwastewaters was based on a transfer from the UTS for chromium (total) of 0.86 mg/L TCLP based on the K061–HTMR treatment standard data. In addition, the Agency reviewed stabilization performance data and determined that the UTS for chromium (total) could be achieved by stabilization for a wide variety of waste matrices. See Proposed Best Demonstrated Available Technology (BDAT) Background Document for Toxicity Characteristic Wastes D004–D011, July 26, 1995.

The Agency received no comments on the proposed change to the wastewater standard for D007. However, as previously discussed in Section III.A of today's preamble, new data collection efforts and further analysis of BDAT data, resulted in a proposed revision to the treatment standard for nonwastewater containing chromium to 0.85 mg/L TCLP based on a BDAT of stabilization (62 FR 26041).

In response to the reproposal, the Agency received no significant comments. However, as discussed earlier in Section III.A of today's preamble, the Agency discovered an error in the calculation of the treatment standard. In applying the LDR methodology for calculating a treatment standard, the Agency failed to conduct a ''Z-score'' outlier test. With the application of this test, 2 out of the 40 data points, originally used to calculate the standard, were determined to be outliers, resulting in a revised treatment standard for chromium nonwastewaters of 0.60 mg/L TCLP. The Agency has reviewed the comments in light of this amended standard and believes that it can be achieved by both HTMR and stabilization technologies. Data submitted by commenters in response to this proposal also support this conclusion. See supporting information contained in the docket for this rule. Therefore, the Agency is today promulgating an amended nonwastewater treatment standard of 0.60 mg/L TCLP. In addition, EPA is also promulgating a treatment standard of 2.77 mg/L for wastewater forms of D007 as proposed in 60 FR 43654.

(ii) Universal Treatment Standard (UTS) for Chromium Nonwastewaters. (Please refer to the discussion above about the development of the treatment standard for D007 for additional information on the development of the chromium UTS levels.) The Agency proposed to change the UTS for chromium (total) nonwastewaters to 0.85 mg/L TCLP to better reflect the diversity of metal-containing waste streams and their treatment (see 62 FR 26041). No change was proposed for the chromium wastewater UTS.

The Agency received no significant comments on the reproposal. However, as a result of an error in the calculation of the proposed treatment standard, as previously discussed, the Agency is today promulgating a revised chromium nonwastewater UTS of 0.60 mg/L TCLP. The chromium wastewater UTS remains unchanged at 2.77 mg/L.

g. Final Treatment Standards for Lead Wastes. (i) Treatment standards for TC Lead Wastes (D008). In 60 FR 43654 (August 22, 1995), the Agency proposed to change the treatment standards for wastewater forms of toxicity characteristic lead (D008) waste from the characteristic level of 5.0 mg/L established in the Third Third rule (55 FR 22520, June 1, 1990) to the previously promulgated UTS for lead wastewaters of 0.69 mg/L. EPA also proposed to change the treatment standard for D008 nonwastewaters from the characteristic level of 5.0 mg/L TCLP (55 FR 22520, June 1, 1990) (a standard remanded by the D.C. Circuit as insufficiently stringent in *Chemical Waste Management v. EPA*, 976 F. 2d at 27) to the previously promulgated UTS for lead nonwastewaters of 0.37 mg/L TCLP. In support of these revised treatment standards, the Agency had performed a comprehensive re-evaluation of the available treatment performance data from wastes containing significant concentrations of lead.

For D008 wastewaters, the Agency determined that the existing UTS for lead (0.69 mg/L) based on a BDAT of lime conditioning followed by sedimentation was appropriate. The treatment standard for nonwastewater forms of D008 waste was based on a transfer from the UTS for lead of 0.37 mg/L TCLP, which in turn, was based on K061–HTMR treatment standard data. The Agency believed that the UTS could be routinely met by industry using HTMR. Additionally, the Agency reviewed stabilization performance data and determined that the UTS for lead could also be achieved by stabilization for a wide variety of waste matrices. See Proposed Best Demonstrated Available Technology (BDAT) Background Document for Toxicity Characteristic Metal Wastes D004–D011, July 26, 1995.

The Agency did not receive any comments on the proposed change for D008 wastewaters. However as previously discussed in today's preamble, numerous comments on the proposed nonwastewater treatment standard were submitted. As a result, the Agency in the Phase IV Second Supplemental proposed to change the D008 nonwastewater standard to 0.75 mg/L TCLP based on new BDAT stabilization data (62 FR 26047) collected by the Agency. The Agency felt that these data better reflected the diversity of lead-containing waste streams and their treatment.

Numerous commenters concurred with the Agency's reproposal. However, other commenters, specifically those representing various sectors of the secondary lead industry, argued that EPA's proposed treatment standard for lead was not achievable. In particular, comments from Battery Council International (BCI) and the Association of Battery Recyclers (ABR) argued that new data developed by their association members showed that no facility in the secondary lead industry could meet EPA's proposed treatment standard for lead. Instead, they supported setting a treatment standard of 8.39 mg/L TCLP for D008 nonwastewaters based on

stabilization. The commenters argued that smelter slag has chemical and physical characteristics distinctly different from the wastes used to develop the treatment standard and that because of its physical variability, treatment of secondary smelter slag through stabilization was much less effective than other types of D008 wastes. The commenter further questioned EPA's decision to ignore data submitted by BCI, ABR and others in response to the original Phase IV proposal, stating that these data were much more comprehensive and representative. The commenter stated that these data contained 276 composite data points for lead from secondary smelter slag, with a 99th percentile confidence interval for stabilized slag of 2.97 mg/L TCLP. Another commenter, which uses a chemical fixation process on the generated blast furnace slag, argued that they could only meet a 2.0 mg/L TCLP for lead, based on composite rather than grab sampling.

In response to the commenters' concerns, the Agency would first like to respond to the commenters' statement that data previously submitted to the Agency was ignored. The Agency is careful to review and analyze all data that are submitted in support or response to its rulemakings. In fact, the referenced data were analyzed extensively, but were found to be so seriously lacking in form and quality assurance/quality control prerequisites that it was impossible to use them for BDAT development. (In the docket for this rule see the documents, ''Draft—Overview of Five Data Sets Submitted in Response to the Land Disposal Restrictions Phase IV Proposed Rule: Treatment of Metals,'' November 1996; and correspondence from Michael Petruska, USEPA to David B. Weinberg, Battery Council International Re: Request for Additional Data in Support of the Previous Submitted Data in Response to the Land Disposal Restriction Phase IV,'' July 22, 1996). Specifically, the data submitted to the Agency were (1) based on composite samples rather than grab samples, the latter being the only type used to develop treatment standards; (2) lacking in any quality assurance/quality control (QA/QC) documentation; and (3) not accompanied with specific treatment information, or any indication that performance of the treatment process was in fact optimized. As such, the Agency was unable to utilize these data.

Other additional data were subsequently submitted by the commenter in response to the ''Second Supplemental'' and analyzed by the Agency. These data were based on grab sampling, but there were no specifics on the type of stabilization treatment conducted on the waste. The data does indicate that secondary smelter slags can be treated to meet today's treatment standards for all metals except lead and thallium. With respect to lead, approximately 24 out of 83 samples have treated lead values greater than 0.75 mg/L TCLP, but less than the characteristic level of 5.0 mg/L TCLP. No information was provided for the majority of the thallium data sets. Based on these data, the commenter proposed a treatment standard of 8.39 mg/L TCLP for lead nonwastewaters and 0.79 mg/L TCLP for thallium nonwastewaters. However, these data failed to show effective treatment of the thallium and lead constituents. (In the docket for this rule, see memorandum to Nick Vizzone, USEPA from Howard Finkel of ICF, ''Calculation of Universal Treatment Standard (UTS) for Stabilized Secondary Lead Slag Using Data Submitted by the Battery Council International and Association of Battery Recyclers,'' December 5, 1997).

Commenters have failed to provide reliable and convincing data or information to persuade the Agency that stabilization can not meet the proposed treatment standard of 0.75 mg/L TCLP for lead slags. While the physical variability of the slag may indeed affect treatment performance, the Agency is unconvinced that the commenter's data were the result of optimized treatment conditions and, therefore, are not indicative of true treatment difficulties. EPA's own performance data from treatment of D008 battery slags (which were used in part for the calculation of the treatment standard) clearly support the view that slags from secondary battery recyclers can be treated to meet the nonwastewater standard of 0.75 mg/L TCLP. These data indicate that slags with lead concentrations ranging from 5 to 846 mg/L TCLP (a range similar to that associated with the data submitted in response to the May 12 Second Supplemental proposal and which are discussed above) can be treated with stabilization techniques to levels less than 0.01 mg/L to 0.3 mg/L TCLP. Furthermore, data and information available to the Agency suggest that with optimized treatment these standards should be achievable regardless of the waste matrix. (See ''Treatment Technology Background Document'', January 1991, for a discussion of Waste Characteristics Affecting Performance (WCAPS and other pertinent material). As such, the Agency is unpersuaded by the commenter's arguments and is today promulgating as proposed a treatment standard of 0.75 mg/L TCLP for D008 nonwastewaters and a standard of 0.69 mg/L for D008 wastewaters. The Agency notes that if a particular waste is unique or possesses properties making it unusually difficult to treat by the treatment technologies whose performance was used to develop the treatment standard, the affected party may petition the Agency, on a case-by-case basis, for a treatment variance as provided in 40 CFR 268.44.

(ii) Final Universal Treatment Standard (UTS) for Nonwastewaters Containing Lead. (Please refer to the discussion above about the development of the treatment standard for D008 for additional information on the development of the lead UTS levels.) The Agency proposed to change the UTS for lead nonwastewaters from 0.37 mg/L TCLP to 0.75 mg/L TCLP to better reflect the diversity of metal-containing waste streams and their treatment (see 62 FR 26041). In response to the proposed revision, the Agency did receive a number of comments on the nonwastewater level, discussed above. For reasons also discussed above, the Agency is today promulgating a lead nonwastewater UTS of 0.75 mg/L TCLP as proposed.

(iii) Secondary Smelter Battery Slag—Additional Issue. EPA published a Notice of Data Availability (NODA) on May 10, 1996 (61 FR 21419) that discussed, among other things, an issue regarding application of the LDR standards to slags resulting from the smelting of lead acid batteries. The LDR treatment standard, established in the Third Third Rule in 1990, for lead acid batteries is RLEAD (see 40 CFR 268.40 and 268.42, Table 1), which means recovery of lead. The NODA stated that ''[o]nce the batteries are smelted, the LDR requirements have been satisfied, and, therefore, the slag resulting from this smelting need not be treated further. The standards proposed under Phase IV (i.e., compliance with UTS) would not apply to this slag, even if the slag exhibits a characteristic of hazardous waste (i.e., contains lead in amounts greater than 5.0 mg/L).'' This position was based on EPA's usual interpretation that ''when EPA specifies a treatment method as the treatment standard, residues resulting from the required treatment method are no longer prohibited from land disposal *unless EPA should otherwise specify*.'' (emphasis added) 55 FR at 22538 (June 1, 1990).

After the publication of the May 10, 1996 NODA, EPA realized that it had, in fact, ''otherwise specified'' that lead slags resulting from the smelting of lead

acid batteries would be a separate treatability group in the Third Third rule, and they would indeed require further treatment if the slags exceeded the TC for lead (5.0 mg/L) as generated. See 55 FR at 22568 (June 1, 1990). The Third Third rule states that ''The residuals from the recovery process are a new treatability group (i.e., the residues are not lead acid batteries) and, therefore, their status as prohibited or nonprohibited is determined at the point the residues are generated. Such residues would thus only be prohibited and therefore require further treatment if they exhibit a characteristic.'' This point was clarified both in person and in a letter, dated July 31, 1996, sent to representatives of Battery Council International. The letter explained that the Agency had mischaracterized the status of lead slags in the May 10, 1996 NODA and requested comment on the appropriate treatment standard for these lead slags.

EPA published the Phase IV Second Supplemental Proposed Rule on May 12, 1997, and among other things, used new data from the treatment of lead slags in revising the treatment standards for lead. In response to this issue, one commenter stated that EPA was prohibited under RCRA 3004(m) from requiring further treatment for residuals that resulted from a treatment process that was determined to be BDAT (such as RLEAD). The commenter believes RCRA 3004(m) states that once threats are minimized, EPA cannot require further treatment of the residuals after the specified BDAT treatment has been performed on the waste, or the BDAT numerical level has been achieved. Because the Agency's data on lead slag residuals show concentrations of 283 mg/L TCLP lead are not uncommon, potential threats from treated lead slag (using RLEAD only) are clearly not minimized. In fact, the concentrations of lead in these residuals resulting from RLEAD of lead acid batteries are among the most concentrated TC lead wastes for which the Agency has data. The Agency only is requiring further treatment of slag residuals which exhibit the characteristic for lead (i.e., contain lead in amounts greater than the TC level of 5.0 mg/l). Those residuals, by definition, are still hazardous and potential threats posed by their land disposal have not been minimized.

Another commenter raised the issue of whether there had been adequate notice and comment given regarding the status of lead slag residuals. The Agency believes that adequate notice and opportunity to comment were given in light of the facts recited. We note also that all comments received on the Phase IV second supplemental rule regarding lead slag residuals took issue with the treatment standard for lead and the data used to develop the standard, but did not question that the slags could be required to be treated further. Commenters appeared to clearly understand that slags are covered by the Phase IV rule establishing standards for TC lead wastes.

Therefore, lead slag residuals resulting from the smelting of lead acid batteries are included under today's rulemaking. If such residuals exhibit a lead toxicity characteristic (i.e., have lead levels exceeding 5.0 mg/L) after RLEAD is employed, they would have to be treated again for lead and any other underlying hazardous constituents present in waste until the treatment standards are achieved. For a discussion on the development of these numerical standards being promulgated today; see the discussion in section (i) above.

(iv) Addition of Iron Filings to Stabilize Lead-Containing Wastes. Today, the Agency is codifying the principle that the addition of iron metal, in the form of fines, filings, or dust, for the purpose of ostensibly achieving a treatment standard for lead is ''impermissible dilution'' under 40 CFR 268.3. The Agency has determined that this waste management practice does not minimize threats posed by land disposal of lead-containing hazardous waste because the practice essentially ''blinds'' the analytic method but would not in fact prevent lead from leaching under actual disposal conditions. Affected wastes include: toxic characteristic lead wastes (D008), any characteristic waste containing lead as an underlying hazardous constituent, and listed wastes for which lead is regulated.

On March 2, 1995, EPA published the LDR Phase III proposal (60 FR 11702). Among other things EPA proposed that the addition of iron dust to stabilize lead in characteristic hazardous waste constituted impermissible dilution, rather than treatment legitimately meeting the LDR treatment standards (60 FR 11731). In the proposal, the Agency stated that certain industries were adding iron dust or iron fines to some characteristic hazardous waste (nonwastewaters) as an ostensible form of treatment for lead. As an example, the Agency noted that foundries were known to mix iron dust or filings with the D008 sand generated from their spent casting molds, viewing this practice as a form of stabilization. In the proposal, the Agency stated that such stabilization practices were inadequate to minimize threats posed by land disposal of metal-containing hazardous waste, and proposed to clarify that waste management practice as ''impermissible dilution'' under 40 CFR 268.3.

In response to the proposal, the Agency received numerous comments. Commenters in support of the ''impermissible dilution'' designation agreed with EPA's discussion in the preamble that no chemical or pozzolanic reaction was possible from iron dust or filings and that standard chemistry showed that metals such as lead were not bound in a non-leachable matrix when using iron dust or filings as a stabilizing agent. One commenter further mentioned many instances where generators have avoided treatment costs by adding iron to their metal and cyanide-bearing waste streams, thus providing the short-term ability to, as the commenter stated, ''fool'' the test for both amenable cyanide and leachable metals. The commenter pointed out that EPA's adoption of a total cyanide treatment standard had essentially solved the issue of ineffective treatment of cyanide using iron, but the issue of metals treatment still remained. The commenter concluded that the prohibition on the use of iron dust and filings would promote more treatment of toxic metal-bearing wastes.

Other commenters discussed analytical concerns with the TCLP test when used on iron-treated wastes. One commenter stated that the addition of iron to D008 waste sand may mask the presence of lead in two ways: first, iron is more easily oxidized than lead so that under the conditions of the TCLP test, iron may be preferentially leached out into solution, leaving the lead in an insoluble, undetectable state. A second problem with the presence of iron in the TCLP test is spectral interference with the analysis of lead, which could result in positive interference and a raised detection limit for lead.

Numerous commenters representing the foundry industry, however, argued extensively against the ''impermissible dilution'' designation for iron treatment of characteristic metal wastes. The commenters stated that EPA's position was neither justified nor supported by any technical documentation. The commenters further stated that: (1) iron added to lead bearing waste foundry sand effectively immobilizes the lead and yields a treatment residue that consistently passes the TCLP; (2) TCLP tests, run on foundry sand that was treated with iron and landfilled 8–10 years ago, yielded lead results below the 5 ppm level; (3) analytical results for total iron from landfill samples clearly show the iron has not oxidized after

several years; and (4) iron treatment has long-term stability. The commenters further stated that no evidence either from leaching tests or from real-world experience showed that iron treatment is not a successful long-term treatment for brass foundry sand when the treatment is conducted in an appropriate manner. On March 5, 1997, the Agency addressed the issue and industry arguments in Land Disposal Restriction—Phase IV Treatment Standards for Characteristic Metal Wastes; Notice of Data Availability (NODA) (62 FR 10004). In this NODA, new studies and data were presented on the issue of the treatment adequacy of adding iron to characteristic metal wastes as a method of treatment. As explained in the Phase III proposed rule (60 FR 11702), and again in the NODA of March 5, 1997, the addition of iron seems to temporarily retard the leachability of lead in spent foundry sand, thus allowing the waste to pass the TCLP test, but not to be permanently treated. At the time of the Phase III final rule, EPA decided not to finalize a determination that the practice was a form of impermissible dilution in the Phase III final rule without studying the issue further. See 61 FR 15569, April 8, 1996. In the March 5, 1997 NODA, two studies were noticed that had recently been completed.

One study was developed by Dr. John Drexler of the University of Colorado and the other by Dr. Douglas Kendall of the National Enforcement Investigation Center (NEIC). The results of these studies indicated that the addition of iron filings or iron dust to spent foundry sands (D008) did not constitute adequate treatment of the waste because high concentrations of lead remained available to the environment and indeed have been shown to leach in actual field testing of units receiving the spent foundry wastes. (The reader is referred to 62 FR 10004, March 5, 1997 for a full discussion of the studies).

Specifically, Dr. Drexler's study concluded: (1) the spent foundry wastes placed in Nacodoches Municipal Landfill remained hazardous; (2) the addition of iron filings to spent foundry sand does not cause chemical reduction (i.e., the hazardous lead remains oxidized); (3) the addition of iron filings to the spent foundry sand promoted a physicochemical dilution of the sample during the TCLP by producing significant increases in surface area sorption sites; (4) the addition of iron filings to the waste artificially altered the environmental character of the TCLP test by increasing pH and lowering Eh (redox potential) and DO (dissolved oxygen); and (5) in-vitro testing shows that these ''treated'' wastes maintain a high bioavailability of lead.

Dr. Kendall's study concluded that the addition of iron is not a permanent way to treat lead-contaminated waste. Specifically, he concluded that: (1) no reaction occurs when metallic iron is mixed with lead-contaminated foundry sand (D008); (2) during the TCLP process, lead begins to leach into the solution and if metallic iron is present, the lead concentration in solution will decrease by an oxidation/reduction reaction to levels below the lead characteristic; (3) only if fresh metallic iron is regularly introduced into the mixture, can soluble lead be kept at low levels; and (4) upon placement of the waste in a landfill and left alone, the iron will oxidize, losing its ability to reduce lead ions.

Peer review of the studies concurred with the findings that the addition of iron filings to spent foundry sand is not treatment of hazardous waste and that the scientific data presented in the studies were based on sound scientific research and support the conclusions made. (See ''Peer Review Report, September 3, 1996, submitted by A.T. Kearney, Inc., Dallas, Texas to Rena McClurg, Regional Project Officer, USEPA, Dallas, Texas.)

The Agency received several comments in response to the NODA. One State agency commented that based on the evidence gathered by the EPA, the addition of iron fines as treatment of lead containing wastes appears to be unacceptable under most disposal criteria. Furthermore, it was the commenter's contention that the method in question should be rejected where disposal of wastes so treated may be subjected to acid leaching and chemical oxidation, in particular disposing of wastes in a municipal solid waste landfill. The commenter did note however that data exist to support the contention that the treatment may be acceptable for brass foundries under specified monofill disposal criteria. Another commenter requested clarification as to whether iron-bearing lead waste products, i.e., from the steel bridge blast cleaning and painting industry, would be impacted. The commenter recommended that all waste debris from any lead abatement project be deemed hazardous and treated appropriately regardless of the type of abrasive blast media used.

Two commenters argued that the conclusions drawn from the studies conducted by Drs. Kendall and Drexler were erroneous or misplaced from a regulatory standpoint. In particular the commenters argued, among other things, that given the biased sampling, i.e., sampling of only ''hot spots'' in the landfill and disregard for SW–846 statistical analysis, EPA should reconsider its view on the treatment of foundry sands with iron filings. (The reader is referred to the ''Comment Response Document'' for this final rule for a more complete discussion of the comments received on this issue.)

EPA has evaluated all the comments on the subject studies and on the issue of iron filings as a treatment method for lead nonwastewaters. The regulatory issue at hand—and the focus of the studies—is whether or not adding iron metal is adequate treatment for LDR purposes. Several commenters have elected to take issue with points that are not the central focus of the two studies. While a statistical evaluation is used to determine if a waste is hazardous, all parts of the waste must be treated to meet the applicable standards, not just a representative sample. Thus, if results show that ''hot spots'' remain, this is presumptive evidence that treatment was not effective and there is noncompliance with the LDR treatment requirements. In the preceding determination of whether a waste is hazardous, the Agency guidance in SW–846 provides basic sampling strategies for simple and stratified random sampling of the waste as a whole. However, in application of the land disposal treatment standards, all portions of the waste must meet the applicable treatment standards, i.e., no portion may exceed the regulatory limit. See 40 CFR 268.40. Hence, commenters that focused on the SW–846 sampling issue largely misconstrued the central findings of the studies.

In response to comments pointing to the disposal of a waste in a monofill, while data may suggest that disposal of iron treated waste in this type of controlled environment may be protective in some scenarios, RCRA section 3004(m)(1) requires treatment to substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized. This statutory requirement has not been met with iron addition plus placement in a monofill since ultimate placement of the waste in a monofill is not germane to the key issue at hand—is the treatment prior to land placement effective.

With respect to this key issue, the Agency's determination that the addition of elemental iron in the form of fines, filings, etc., constitutes impermissible dilution is predicated on the fact that the adsorption of soluble

lead on to the iron surface is a reversible reaction and once the iron surfaces oxidize (which naturally occurs when the treated waste is exposed to air), the ability of the additive (iron) to scavenge soluble metals is diminished. Therefore, the treatment is not permanent. In addition, adsorption alone is not a reliable method of permanently immobilizing lead which both studies conclude. The authors have also concluded, and the Agency agrees, that the prohibition should apply to any lead-containing waste. As stated by Dr. Kendall in his response to comments, ''Lead-contaminated foundry sand is no different from any other waste which fails the TCLP test because of excessive amount of extractable lead. The addition of iron metal (zero valence iron) is not a permanent treatment because iron oxidizes. Since iron addition is not a permanent treatment, it should not be allowed for hazardous wastes which are to be land disposed, regardless of their origin.'' (See memorandum from Samuel Coleman, USEPA to James R. Berlow, USEPA Re: ''Reply to Comments Concerning Prohibition of Land Disposal of Iron Treated Lead Contaminated Wastes''. November 17, 1997.)

As indicated above, the addition of iron metal is not a permanent treatment because the iron inevitably oxidizes and loses its adsorptivity for soluble lead ions. After oxidation of the iron surfaces, surface adsorption of lead ions ceases and the lead-bearing waste returns to its original state; all pretext of treatment is lost. Since iron addition is not effective, it cannot be allowed for hazardous lead-containing hazardous wastes that are to be land disposed, regardless of their origin (i.e., all lead-bearing wastes, not just foundry sands).

The Agency concludes that addition of iron metal, in the form of fines, filings, or dust, fails to provide long-term treatment for lead-containing hazardous wastes. EPA is codifying this determination by calling the practice impermissible dilution, and so invalidating it as a means of treating lead in lead-containing hazardous wastes. It can also be simply viewed as a type of treatment that fails to minimize the threats to human health and the environment posed by disposal of lead-containing hazardous wastes, because lead mobility is not substantially reduced when the waste is disposed.

In response to comments whether use of iron-containing abrasives to remove lead-based paint, for example from the steel bridge blast cleaning and painting industry, may be a type of impermissible dilution, the Agency notes that the dilution prohibition does not apply to processes which generate a waste, only to processes that treat a waste which already has been generated. See S. Rep. No. 284, 98th Cong. 2d Sess. 17 (1984). As such, it would not appear that abrasive blasting is impermissible dilution since it is part of the process generating the waste, i.e., the removed paint. If generators added iron filings/dust or discarded, off specification steel shots to lead-based paint waste (similar to the current foundry practices), it is analogous to impermissible dilution and this rule bans such practice. However, addition of iron filing/dust to a hazardous waste (before the hazardous waste determination) is a lot different from using steel pellets/shots, silica-containing products, and other abrasive materials for paint removal.

The Agency has been pursuing several specific efforts to evaluate the environmental hazards caused by disposal of lead-containing wastes, including evaluation of damage case information included in the 1996 Hazardous Waste Characteristic Scoping Study, re-examination of the risk modeling used for the 1995-proposed Hazardous Waste Identification rule, and evaluation of fate and transport in other environmental media from industrial nonhazardous solid waste disposal facilities. Upon completion of these activities, the Agency will be in a better position to decide whether disposal of lead-containing waste is a health and environmental concern warranting listing or whether revising the TC regulatory limit would be more appropriate.

In addition, the Agency notes that a determination that a waste is not hazardous (here because addition of iron during a generating process results in a determination that paint waste does not exhibit a characteristic) may not be a shield against future liability, if the disposal results in environmental damage. Note that under CERCLA, not just generators are liable for any environmental damage caused by the release of hazardous material into the environment. CERCLA liability is independent of any hazardous waste determination that previously may have been made. EPA believes that in light of CERCLA liability and the available environmental contamination data, it would be prudent for generators to examine their waste generation and management practices with an eye toward segregation of lead-based paint waste and iron dust/flakes or steel shots, and potential re-smelting of the lead-bearing residuals.

As a final matter, it has been argued to the Agency that the proposed (and now final) action regarding addition of iron filings is analogous to treatment of fluoride in a process for treating aluminum spent potliner waste (K088) operated by Reynolds Metals Company. See generally Docket P33F–S0069 p. 6 (July 7, 1997) and 62 FR 37694, 37697 (July 14, 1997) (responding to comment and establishing October 8, 1997 as the date prohibition of land disposal of K088 wastes takes effect). The argument goes that in the Reynolds treatment process, reagents are added to the process that only allow the fluoride to meet the LDR treatment standard by blinding the analytical method (the TCLP), but do not result in permanent reduction of fluoride mobility in the treated wastes. See 62 FR at 37695, noting that levels of fluoride in the leachate from actual disposal are well in excess of the levels established in the treatment standard (as measured by the TCLP). Hence, it is asserted, this process must be an example of impermissible dilution.

The Agency disagrees. First, EPA calculated that the process did reduce fluoride mobility on the order of 28%. Docket P33F–S0064. This estimate may in fact understate the extent of treatment. The maximum amount of fluoride detected in actual leachate from the disposed treatment residue is 2228 mg/L. 62 FR 37695. However, untreated potliners leached fluoride at concentrations ranging from 7730–8860 mg/L when exposed to the same type of leaching medium (simulated monofill leaching medium). Docket P33F–S0049 data set J. Thus, EPA finds that the process is resulting in non-dilutive treatment of fluoride. In addition, the reagent used for fluoride treatment serves another legitimate function in the process—as a fluxing agent to prevent agglomeration of material in the rotary kiln. 62 FR at 37695. Dilution which is a necessary part of a treatment process is normally permissible. 51 FR at 40592 (November 7, 1986); 62 FR at 37697. Consequently, EPA does not regard the treatment of fluoride in the Reynolds K088 treatment process to be a form of impermissible dilution.

h. Treatment Standards for Wastewater and Nonwastewater Forms of Mercury Waste. The Agency, in the original Phase IV rule, proposed to change the treatment standard for one subcategory of TC mercury wastewaters (D009—All Others) from the characteristic level of 0.20 mg/L (established in the Third Third rule (55 FR 22520. June 1, 1990) to the previously promulgated UTS for mercury wastewaters (Mercury—All

Others) of 0.15 mg/L. (60 FR 43654, August 22, 1995.) The Agency received no comments on this proposed change. As such, the Agency is promulgating a treatment standard of 0.15 mg/L for wastewater forms of D009—All Others.

The Agency also proposed to revise the treatment standard for TC mercury nonwastewaters (D009—All Others) from the characteristic level of 0.20 mg/L TCLP to 0.025 mg/L TCLP. The nonwastewater UTS for mercury is based on the mercury standard developed from K071 waste treatment data. The only comments received on the achievability of this proposed change were regarding the application of this treatment standard to TC mercury soil. TC soils are subject to specific treatment standards being finalized elsewhere in today's rule. More detail can be found on the mercury soil comments in the Response to Comments Background Document. Therefore, the Agency is promulgating a treatment standard of 0.025 mg/L TCLP for nonwastewater forms of D009—All Others in today's rule.

With respect to the broader issue of mercury treatment, the Agency plans to conduct an intensive review of traditional and innovative technologies over the next year or so. Outreach to various industry, academic, and other groups is also being investigated as to its feasibility. Key information, when available, on this effort can be obtained from the RCRA Hotline, and notices of significant public events will be placed in the **Federal Register** and on EPA's Internet home page.

i. Final Universal Treatment Standard for Nonwastewater Forms of Nickel. The Agency proposed in the Phase IV Second Supplemental to change the UTS for nonwastewaters containing nickel from 5.0 mg/L TCLP to 13.6 mg/L TCLP. This revision to the UTS was based on new performance data obtained by the Agency and presented in that notice. The Agency did not receive any significant comments on this issue. However, as discussed in an earlier section of today's preamble, the Agency discovered an error in the calculation of the treatment standard. In applying the LDR methodology for calculation of a treatment standard, the Agency failed to conduct a ''Z-score'' outlier test. With the application of this test, 5 out of the 122 data points originally used in the calculation of the standard, were determined to be outliers. This error resulted in a revised treatment standard for nickel nonwastewaters of 11.0 mg/L TCLP. In light of this amended standard, the Agency has reviewed all of the comments and data submittals, and has determined that all the treatment data for nickel is below 11.0 mg/L TCLP. Accordingly, the Agency is today promulgating a final UTS for nickel nonwastewaters of 11.0 mg/L TCLP. No change was proposed for nickel wastewater; therefore, the UTS remains at 3.98 mg/L for these wastes.

j. Final Treatment Standards for Selenium Wastes. (i) Treatment standards for TC Selenium Wastes (D010). The majority of commenters supported the Agency proposal to maintain the 5.7 mg/L TCLP level for D010 nonwastewaters. They strongly agreed with the Agency's reasoning, and urged EPA to adopt the proposed treatment standard.

One commenter, however, maintains that the Agency should establish a ''High Selenium Greater Than 200 ppm'' subcategory for nonwastewaters, with a corresponding treatment standard of 10 mg/L TCLP. The commenter has cited technical problems in achieving the proposed treatment standard level for highly contaminated selenium wastes. The commenter states that, since 1995, they have consistently experienced problems treating waste streams from glass manufacturing companies with wastes that contain high concentrations of selenium. The commenter provided treatability testing data from a selenium waste stream, containing 80 mg/L TCLP, which showed that 16 different treatment recipes were tested prior to finding one that would treat a selenium waste to below 5.7 mg/L TCLP. The other data, from three different generators of selenium waste, suggest TCLP values of untreated waste of between 465–1064 ppm TCLP, with treated wastes achieving between 2.5 and 45.6 mg/L TCLP.

The Agency has reviewed all the treatment data and, for the most part, waste streams containing selenium exist either in relatively low concentrations (0.1–0.13 mg/L TCLP) or in extremely high concentrations (greater than 450 mg/L TCLP). Because of the highly divergent nature of these wastes and the difficulty in treating selenium with multiple metals at almost any concentration, it seems unreasonable to mandate that one treatment standard could be applicable to both. Calculations of a revised treatment standard, based only on the newly submitted treatment data for the high selenium concentration wastes, would yield a standard of 77.0 mg/L TCLP for selenium nonwastewaters. If a calculation is done after pooling all selenium data (including low concentration selenium data), a standard of 261 mg/L TCLP would result. The Agency is reluctant to establish a treatment standard for selenium nonwastewaters of either 77.0 mg/L or 261 mg/L TCLP on a national level. Earlier data suggest and commenters concur that for the majority of selenium wastes the proposed standard of 5.7 mg/L TCLP for selenium nonwastewaters is appropriate. Furthermore, only three high selenium concentration waste streams that could apparently not be treated to this level. Therefore, there is little reason to pool all treatment data or to engage in bifurcation of the selenium standard.

Accordingly, the Agency is promulgating a treatment standard of 5.7 mg/L TCLP for nonwastewaters containing selenium. The Agency, however, is convinced that the high-level selenium waste streams for which data were submitted to EPA will be unable to be treated to achieve the 5.7 mg/L TCLP standard. Therefore, in a **Federal Register** notice that will be published shortly, the Agency will be requesting comment on a proposal to grant a site-specific treatment variance for Waste Management, Inc. for the treatment of some D010 wastes containing high concentrations of selenium.

The Agency also is promulgating as proposed a wastewater treatment standard of 0.82 mg/L for D010 wastewaters. No comments were received on this issue.

(ii) Universal Treatment Standard (UTS) for Selenium. As noted above, in the May 12, l997 reproposal of the Phase IV rule, the Agency proposed to change the UTS for selenium nonwastewaters from 0.16 mg/L to 5.7 mg/L TCLP. For the reasons discussed above for D010 nonwastewaters, 5.7 mg/L TCLP is a better reflection of treatability of difficult-to-treat selenium waste streams than 0.16 mg/L TCLP. This is the level being promulgated today for the selenium nonwastewater UTS. (It should be noted that because the UTS is above the TC level for selenium, selenium is not considered an ''underlying hazardous constituent'' (UHC) in characteristic waste, according to the definition at 268.2(i)). The wastewater UTS for selenium remains unchanged at 0.82 mg/L.

k. Final Treatment Standards for Silver Wastes. (i) Treatment standards for TC Silver Wastes (D011). In today's final rule, EPA is promulgating a nonwastewater treatment standard of 0.14 mg/L TCLP for characteristic silver (D011). For wastewaters, EPA is promulgating a treatment standard of 0.43 mg/L as proposed in the original Phase IV proposal on August 22, 1995 (60 FR 43684). EPA is in the process of determining whether silver should

remain on the TC list at 40 CFR 261.24(b) Table 1 or whether the current TC level should be altered. If EPA alters the status of silver on that TC list, EPA will revisit the treatment standards for silver.

(ii) Proposals, Comments, and Responses. Until today's notice, the treatment standards for wastewater and nonwastewater forms of D011 have both been 5.0 mg/L TCLP, which is the TC level. In 1995, EPA proposed a treatment standard of 0.43 for wastewaters and 0.30 mg/L for nonwastewater, based on the best treatment data in EPA's possession at that time (60 FR 43684). EPA received comments urging the Agency to refrain from setting a treatment standard lower than the TC level and instead suggesting that EPA remove silver from the TC list altogether due to new information on the low risk of silver to human health.

In a 1996 Notice of Data Availability (NODA), EPA presented the option of retaining the 5.0 mg/L treatment standard for D011 wastes (61 FR 21420, May 10, 1996). Comments were divided in two groups: those which supported the option, and those which stated that EPA had no firm basis for such a decision, given the potential toxicity of silver to aquatic life.

Since receipt of the comments on the NODA, EPA acquired more recent treatment data on TC metals, including silver. Based on these data, EPA learned that D011 nonwastewaters could be successfully treated to a level of 0.11 mg/L using HTMR, and EPA proposed revising the UTS for silver in its Phase IV Second Supplemental proposal. The grab data used to establish this treatment standard was submitted to the Agency by an HTMR facility (62 FR 26041) (Background Documents from Second Supplemental proposal). Commenters on the Second Supplemental reiterated that silver should not be on the TC list. However, the commenters continued, if silver remains on the list for now, EPA should not set a more stringent standard than the current one of 5.0 mg/L, but rather it should choose a risk-based standard. Commenters explained further that little D011 is disposed, because silver is generally recovered from silver wastes.

In response to the reproposal, the Agency received no significant comment on the technical aspects of achieving the proposed treatment standard; however the Agency did receive from International Metals Company (INMETCO) an additional 74 grab data points on the treatment of silver using HTMR. (See memorandum from Howard Finkel, ICF, Inc., to Nick Vizzone, USEPA Re: ''Calculation of Universal Treatment Standards (UTS) for HTMR Residues Using Data Submitted by Horsehead Research Development Company, Inc. and INMETCO,'' December 17, 1997.) The Agency used INMETCO data for the calculation of the proposed treatment standard and determined that this additional data should be included in the data pool. As previously discussed in Section III.A. of today's preamble, the Agency discovered an error in the calculation of the treatment standard. In applying the LDR methodology for calculating a treatment standard, the Agency failed to conduct a ''Z-score'' outlier test. With the application of this test and the inclusion of the 74 additional data points, 3 out of the 114 data points, were determined to be outliers, resulting in a revised treatment standard for silver nonwastewaters of 0.14 mg/L TCLP. The Agency has reviewed the comments in light of this amended standard and believes that it can be achieved by both HTMR and stabilization technologies. Data submitted by commenters in response to this proposal also support this conclusion. See supporting information contained in the docket for this rule.

The Agency does not have an adequate basis for taking the actions recommended by some commenters, i.e. to remove silver from the TC list, or regulate it at a less stringent level than the proposed technology-based treatment standard. EPA is in the process of determining whether silver should remain on the TC list at 40 CFR 261.24(b) Table 1, or whether the current TC level should be altered. In addition, EPA continues its work on the Hazardous Waste Identification Rule (HWIR) to establish risk-based exit levels for hazardous wastes. The Agency is not yet able to establish a nationally-applicable risk-based level for silver that fulfills the statutory charge of minimizing threats of hazardous waste to human health and the environment.

The process of establishing such a level is technically complex; EPA is currently modeling the ecological and human health effects of exposure to silver through numerous pathways. Several issues remain unresolved concerning human health and environmental risk. EPA is continuing to investigate these issues. The Agency recently acquired studies indicating that silver may be connected to central nervous system and other non-cancer effects in humans. The draft Reference Dose for these effects have not been finalized by the Agency for use in risk assessments. (A Reference Dose is a benchmark level for chronic toxicity that is protective of human health.) In addition to potential adverse human health effects, uncertainties and concerns also remain for potential adverse environmental effects. Although EPA removed the Maximum Contaminant Level (MCL) for silver in drinking water, the Ambient Water Quality Criteria remain in effect due to potential aquatic toxicity. Further areas of uncertainty are how silver speciates after release (i.e. which valence state of silver would be present). The issue could be important since potential toxic effects differ depending on the species of silver present. In short, EPA's work on understanding risks from disposal of silver-containing hazardous wastes is ongoing, and it would be premature to establish a treatment standard based on risk at this time.

In the absence of such ''minimize threat'' levels for hazardous constituents, the Agency establishes standards based on Best Demonstrated Available Technology (BDAT). (See full explanation in the preamble of the Phase II Final LDR rule at 59 FR 47986, September 19, 1994.) The fact that the UTS for nonwastewater forms of silver is being lowered (made more stringent) from the existing level of 0.30mg/L to 0.14 mg/L is due to new data on what treatment technology achieves. As explained in the summary of this preamble section (Section III: Revised Land Disposal Restrictions for Metal Constituents in All Hazardous Wastes, Including Toxic Characteristic Metals), technology-based standards are the best assurance that threat is minimized, given the uncertainty as to the level at which threats of hazardous waste disposal are minimized.

EPA expects that the new treatment standard for silver wastes will have little, if any impact on the regulated community. As stated by commenters, high-silver wastes are generally recycled due to their economic value and are covered by the special streamlined standards for recyclable materials utilized for precious metal recovery at 40 CFR Part 266.70 Subpart F. Moreover, the Regulatory Impact Analysis for this rule estimated that the new, more stringent UTS levels for metal constituents, including silver, will not increase compliance costs. This is because the current treatment methods already achieve the new standard of 0.14 mg/L in silver nonwastewaters. (Achievability of the UTS for TC silver wastewaters is not an issue; EPA received no comments nor data on its proposal to apply the existing UTS of 0.43 mg/L.)

Thus, the Agency is promulgating the wastewater standard of 0.43 mg/L as proposed and the nonwastewater

standard of 0.14 mg/L. If EPA changes the status of silver on the TC list, EPA will revisit the treatment standards for silver wastes.

(iii) Universal Treatment Standard (UTS) for Silver Nonwastewaters. (Please refer to the discussion above about the development of the treatment standard for characteristic silver for information on the development of the UTS levels.) In today's final rule, EPA is promulgating a nonwastewater UTS of 0.14 mg/L TCLP for silver.

l. Final Universal Treatment Standard for Nonwastewater Forms of Thallium. The Agency proposed in the Second Supplemental Proposed Rule to change the UTS for thallium-containing nonwastewaters from 0.078 mg/L TCLP to 0.20 mg/L. (The original standard was based on composite sampling from an HTMR facility). This proposal was based on new data obtained by the Agency and presented in that notice. Several commenters supported the change. However, two commenters argued that EPA had not demonstrated that existing commercial technologies were capable of achieving the proposed standards or that technologies were otherwise available. The Agency remains unconvinced by the arguments of the commenters and notes that they supplied no treatment data in support of their contentions. Accordingly, the Agency is today promulgating as proposed a revised UTS for nonwastewaters containing thallium of 0.20 mg/L TCLP. No change was proposed for wastewater containing thallium; therefore the UTS remains 1.4 mg/L.

m. Final Treatment Standard for Nonwastewater Forms of Vanadium in P119 and P120 Wastes. The Agency proposed in the Second Supplemental Proposed rule to change the UTS for nonwastewaters containing vanadium in P119 and P120 wastes from 0.23 mg/L TCLP to 1.6 mg/L TCLP. This proposal was based on new data obtained by the Agency and presented in that notice. Commenters were supportive of the change. The treatment standard of 1.6 mg/L TCLP is being promulgated as proposed. No change was proposed for wastewater containing vanadium in P119 and P120 wastes, therefore, the UTS remains 4.3 mg/L. The Agency would like to point out that vanadium is not an ''underlying hazardous constituent'' in characteristic waste, according to the definition at 268.2(i).

n. Final Treatment Standard for Nonwastewater Forms of Zinc in K061 Waste. The Agency proposed in the Second Supplemental Proposed rule to change the treatment standard for zinc nonwastewaters in K061 waste from 5.3 mg/L to 4.3 mg/L . This proposal was based on new data obtained by the Agency and presented in that notice. One commenter was supportive of the change, while two other commenters were concerned with zinc being identified as an UHC. Still another commenter, a major HTMR facility, submitted data (152 data points) showing 100% compliance with the standard after 6 high statistical outliers were removed. Indeed, the great majority of these data showed zinc at levels an order of magnitude below the promulgated standards. EPA believes these data confirm the achievability of today's standard. Therefore, the Agency is today promulgating a revised nonwastewater treatment standard of 4.3 mg/L TCLP for K061 waste. No change was proposed for wastewater containing zinc in K061; therefore the UTS remains 2.61 mg/L. In response to the comments regarding zinc as an UHC, the Agency would like to point out that zinc is only regulated in K061 waste; it is not defined as an ''underlying hazardous constituent'' in characteristic waste, according to the definition at 268.(i).

UNIVERSAL TREATMENT STANDARDS FOR TWELVE METAL CONSTITUENTS

[Affecting Nonwastewater TC Metal Wastes and Nonwastewater Metal Constituents in All Wastes]

Waste code	Constituent	TC level (mg/L)	Existing UTS level (mg/L TCLP)	2nd supplemental proposed UTS level (mg/L TCLP)	Final UTS level (mg/L TCLP)
D005	Barium	100	7.6	21.0	21.0
D006	Cadmium	1.0	0.19	0.20	0.11
D007	Chromium	5.0	0.86	0.85	0.60
D008	Lead	5.0	0.37	0.75	0.75
D009- all others	Mercury	0.2	0.025	0.025	0.025
D010	Selenium	1.0	0.16	5.7	5.7
D011	Silver	5.0	0.30	0.11	0.14
	Antimony		2.1	*0.07	1.15
	Beryllium		0.014	*0.02	1.22
	Nickel		5.0	13.6	11.0
	Thallium		0.078	0.20	0.20
	Vanadium**		0.23	1.6	1.6
	Zinc**		5.3	4.3	4.3

*The proposed UTS levels for antimony and beryllium were rounded up to the nearest 0.01 mg/L TCLP.
**Vanadium and zinc are not underlying hazardous constituents.
Note: Treatment standards for TC metal wastewaters have also been revised in today's rule, but are not reflected in this table.

D. Use of TCLP to Evaluate Performance of Treatment Technology for Treating Hazardous Metal Constituents

Commenters did not question the appropriateness of using the TCLP as a means of evaluating the performance of the treatment technology used to treat metal hazardous constituents in hazardous wastes. EPA is addressing the issue *sua sponte* to set out why the recent opinion of the D.C. Circuit in *Columbia Falls Aluminum Co.* v. *EPA* (No. 96–1234, April 3, 1998) does not affect use of the TCLP for this purpose.

Columbia Falls presented an unusual set of facts. EPA had established treatment standards for spent aluminum liners (waste K088), which standards used the TCLP to measure performance of the treatment technology for several hazardous constituents, including arsenic and fluoride. All of the commercial treatment capacity for this waste was provided by a single facility, and all of the treatment residue from this single process was disposed at a single location. Slip op. at p. 6; 62 FR

at 1993 (Jan. 14, 1997). Notwithstanding that the treatment process was able to achieve the treatment standards for arsenic and fluoride as measured by the TCLP (i.e., the treatment residue, when tested with the TCLP, never exceeded the regulatory levels), actual *leachate* from the disposal site contained significantly higher levels of these constituents. *Id.* EPA also had not offered any substantive explanation for continued use of the TCLP to measure performance of the treatment process for these constituents after the extreme disparities in actual performance in the field became known. *Id.* p. 18. Under these circumstances, the court held that it was arbitrary and capricious to continue to use the TCLP because it bore no rational relationship to what was actually occurring. *Id.* p. 19.

None of these circumstances are present here. The TCLP has not been shown here to be underpredictive of performance of treatment technology for key hazardous constituents for any wastes, much less, as in *Columbia Falls*, to be drastically underpredictive (for two constituents) for 100 % of the wastes to which the test applied. Moreover, the wastes affected by the standard in today's rule will not uniformly be going to a single disposal environment where actual leaching of key constituents is shown to be higher than the regulatory level. Rather, the wastes will be decharacterized and so can be disposed in any landfill: municipal, subtitle D or subtitle C. Given the enormous diversity of characteristic wastes and the diversity of likely disposal environments, the TCLP will not pervasively underpredict as was the case with spent potliners. Unlike the situation in *Columbia Falls*, therefore, there is no argument that application of the TCLP to measure treatment performance will fail to minimize threats posed by these wastes' land disposal.[1]

EPA also emphasizes that the LDR treatment standards are technology-based, not risk-based. A key role of the TCLP in the treatment standard is to measure whether the best demonstrated treatment technology has been properly applied to the waste. Thus, unlike the situation when the test is used as a means of identifying whether or not wastes are hazardous, the TCLP is not principally serving a predictive function when it is used as a component of an LDR treatment standard. The test is normally a good measure of evaluating the performance of treatment technology both because it is a widely-available test for metal mobility, and also because it is typically somewhat aggressive (*Edison Electric*, 2 F.3d at 445). Thus, it is a useful tool for measuring whether metal mobility has been substantially reduced in order that threats posed by land disposal be minimized (as required by section 3004 (m)). In the Agency's view, therefore, questions as to the validity of the TCLP as a component of LDR treatment standards are raised only under the extreme circumstances present in *Columbia Falls*, where, for all wastes and all disposal scenarios affected by the standard, large disparities between actual environmental field results and the treatment standard raise significant questions as to whether treatment is minimizing threats. These questions are not present for the metal-containing wastes here.

IV. Application of Land Disposal Restrictions to Characteristic Mineral Processing Wastes

Summary

EPA is today finalizing its proposal to apply the Universal Treatment Standards (UTS), as revised in part today, to the newly identified characteristic mineral processing wastes. In earlier rules and a Report to Congress, EPA has determined which mineral processing wastes are not excluded in the Bevill Amendment and are thus considered ''newly identified'' wastes subject to RCRA regulations. (See 54 FR 36592, September 1, 1989; 55 FR 2322, January 23, 1990; and Report to Congress on Special Wastes from Mineral Processing, USEPA, July 31, 1990.) The treatment standards being promulgated today are located in the table ''Treatment Standards for Hazardous Wastes'' at 268.40 in the regulatory language for today's rule. The wastes are identified by characteristic waste code (e.g. D002 corrosive waste, or D008 TC lead waste); there is no separate section in that table for characteristic mineral processing wastes.

A. Proposal, Comments, and Responses

In the original Phase IV, EPA proposed to apply the metal UTS, as measured by the TCLP (60 FR 43582, August 22, 1995) to all TC metal wastes. On January 25, 1996, EPA further proposed to apply the existing UTS to the newly identified mineral processing wastes, i.e., mineral processing wastes that exhibit a characteristic and do not have Bevill status and are not excluded from being a solid wastes due to recycling. The Agency stated in this proposal that existing data showed that these ''newly identified'' mineral processing wastes were similar to those wastes for which the UTS was achievable, and consequently the UTS fairly reflected the performance of Best Demonstrated Available Technology (BDAT) for these wastes. (See 61 FR 2338 for a complete discussion of the Agency's rationale for extending the UTS to both wastewater and nonwastewater forms of ''newly identified'' mineral processing wastes.)

Many commenters in response to this proposal took issue with the Agency's conclusions that the existing data demonstrated that the UTS was achievable for the newly identified mineral processing wastes and stated that the record for the rulemaking reflected no such showing. The commenters further argued that to develop representative treatment standards for mineral processing wastes, the Agency must: (1) Collect and analyze a representative mineral processing waste characterization and treatability data set; (2) analyze that data using well-reasoned and documented methods for determining the treatability of the subject wastes; (3) make a determination as to whether the UTS or some other LDR treatment standards are appropriately applied to mineral processing wastes; and (4) provide notice and an opportunity to comment on that determination prior to imposing any LDR treatment standards on such wastes. Several other commenters took issue with the Agency's use of only HTMR data to develop the treatment standards.

As a result of these comments and others received in response to the original Phase IV rule, the Agency decided to further assess the treatment of TC metal wastes and mineral processing wastes. As previously discussed in today's preamble, the Agency collected actual stabilization performance data during three site visits conducted in September 1997. In particular, treatment data were collected for the following primary mineral processing wastes: cadmium sponge residue, cupel and crucibles from fire assay laboratories, slag from fire assay laboratory, soil and debris contaminated with sulfuric acid, blast furnace slag, baghouse dust, lead/bromide residue, and gold ore leach tailings. In addition, treatment data from the following secondary mineral processing wastes

[1] Nor is there a legitimate argument that the TCLP is impermissibly overpredictive. Indeed, since the TCLP has already been upheld as a means of identifying many of these metal-containing wastes as hazardous, *Edison Electric Inst.* v. *EPA*, 2 F.3d 438, 444–45 (D.C. Cir. 1993), and since the 'minimize threat' requirement in section 3004(m) is a more stringent test, *HWTC III*, 886 F.2d at 363, *a fortiorari* it is reasonable to use the TCLP as part of the process of assuring that threats posed by land disposal of these wastes are minimized.

were also collected: lead slag waste, lead-bearing assay laboratory wastes, lead contaminated wastes, cupels, and debris; blast furnace slag, lead recycling by-products, lead contaminated soils, and lead battery recycling slag waste. Many of these wastes were particularly difficult to treat due to high total and leachable levels of metals, extreme Ph, and presence of multiple hazardous metal constituents.

As previously discussed in an earlier section of today's preamble, the Agency assessed two data sets representing performance of stabilization and HTMR for the treatment of metal-containing waste streams. This assessment began with the calculation of treatment standards for each of the two data sets. Next, the Agency compared the treatment levels for stabilization versus HTMR. Based on this comparison, the Agency selected the highest level for each metal as the proposed UTS to allow for process variability and detection limit difficulties. As noted earlier, this approach is consistent with the legislative goal of providing substantial treatment through standards that are achievable by an array of well-performing available treatment technologies.

On May 12, 1997, the Agency issued a Second Supplemental Proposal (62 FR 26041). In it, EPA proposed to change the numerical limits for all nonwastewater wastes containing the following metal constituents: antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc. EPA also proposed these same UTS treatment standards for TC metal wastes identified as hazardous due to the concentration of barium, cadmium, chromium, lead, selenium, or silver. Based on the data collection efforts, the methodology used to develop these revised standards, and the preponderance of mineral processing treatment data used to calculate the standards, the Agency was convinced that the transferability of the universal treatment standards to mineral processing wastes was well supported.

In response to these revised treatment standards and their application to mineral processing wastes, the Agency received few comments. Several commenters supported the Agency's decision to apply the LDR treatment standards to mineral processing wastes. A limited few, however, continued to argue that EPA's application of the LDR program to mineral processing wastes was not supported by the record. The commenters' position is unsubstantiated, relying entirely upon assertions that the standards are not achievable. No data was submitted to support the commenters' position. Conversely, the data in hand (some of which reflect successful treatment of hard-to-treat mineral processing wastes) show that the treatment standards are achievable using either stabilization or HTMR for mineral processing wastes. As a result, the Agency is today finalizing the applicability of the existing UTS to the newly identified mineral processing wastes.

The reader is referred to an earlier section of today's preamble for a complete discussion of treatment standards for metal wastes being promulgated today.

B. Clarification That Universal Treatment Standards Apply to Ignitable, Corrosive, and Reactive Characteristic Mineral Processing Wastes

As discussed above, the treatment standards promulgated in this rule will apply to all the newly identified characteristic wastes from mineral processing operations. This includes not only the mineral processing wastes exhibiting the toxicity characteristic (TC), but also wastes that exhibit the characteristic of ignitability (D001); corrosivity (D002); or reactivity (D003). (See definitions of these characteristics at 40 CFR 261.20 through 261.23.) The treatment standards found in 40 CFR 268.40 require removal of the characteristic as well as meeting the treatment standards for all underlying hazardous constituents (UHCs) reasonably expected to be present at levels above the UTS. The Agency received no comment on this issue at proposal (see 61 FR 2338, January 25, 1996). Therefore, the Agency has no reason to believe that the UTS are not achievable for mineral processing wastes also exhibiting the characteristic of ignitability, corrosivity and/or reactivity. As such, the Agency is today promulgating the application of UTS to D001, D002, and D003 mineral processing wastes.

C. Use of TCLP to Evaluate Performance of Treatment Technology for Treating Hazardous Metal Constituents in Mineral Processing Wastes

Part of this rulemaking involves consideration of what the appropriate regulatory test is to determine if mineral processing wastes exhibit the toxicity characteristic. The Agency addresses this issue in detail later in this preamble when discussing retention of the TCLP for this purpose. Here, we confirm that the Agency will also continue to use the TCLP as part of the LDR treatment standard for these wastes. Although commenters did not raise this issue, the Agency feels that addressing it is appropriate in light of the D.C. Circuit's recent decision in *Columbia Falls Aluminum Co.* v. *EPA* (No. 96–1234, April 3, 1998).

The critical component in making waste identification determinations (i.e., to determine whether a waste should be regulated) is ascertaining a plausible mismanagement scenario for the waste if unregulated, and finding a predictive model that can reasonably evaluate whether the waste is capable of posing substantial present or potential harm to human health and the environment under those conditions. *Edison Electric Inst.*, 2 F. 3d at 444. This issue simply does not arise in the LDR context since the wastes subject to LDR are regulated hazardous wastes, and the issue of where and how they would have been managed absent Subtitle C regulation is irrelevant.

In the LDR context, all land disposal (except that occurring in no-migration units) is defined as being unprotective (see, e.g. RCRA section 3004(d)(1)), largely due to the ''long-term uncertainties associated with land disposal'' (*id.*). For this reason, treatment standards reflecting performance of Best Demonstrated Available Technology provide an objective means of removing as much of this inherent ''long-term uncertainty'' as possible, and so permissibly achieve the ultimate requirement of minimizing threats posed by land disposal of hazardous wastes. *HWTC III*, 886 F. 2d at 362–65; 55 FR at 6642 (Feb. 26, 1990). The principal role of the TCLP in these treatment standards is assuring the performance levels achievable from use of these best treatment technologies, not predicting environmental fate in the disposal environment.

As discussed earlier, the TCLP is historically accepted as being well-suited for evaluating performance of treatment technology for metals given its availability and general aggressiveness for mobilizing metals. Also, we note that since the TCLP serves a different purpose in the LDR treatment standards than it serves for identifying wastes as hazardous, and since it is well-suited for that purpose, there would be no contradiction in using it as part of the LDR standard even if a different test were to be used (presumably in the future) for waste identification.

Nor does the *Columbia Falls* opinion undercut use of the TCLP as a component of treatment standards for mineral processing wastes. As noted earlier with respect to other toxic metal-containing wastes, EPA does not view *Columbia Falls* as requiring a change in

use of the TCLP as part of the LDR treatment standards. The TCLP has not been shown generally to be underpredictive of performance of treatment technology for key hazardous constituents for any wastes, much less, as in *Columbia Falls,* to be drastically underpredictive (for two constituents) for 100% of the wastes to which the test applied. For all mineral processing wastes to which it was applied, the TCLP test has not been shown to be underpredictive either, and so would be part of the mechanism for assuring that treatment minimizes threats posed by land disposal of these wastes. Moreover, it should be noted that mineral processing wastes can be and are treated commercially, and the treatment residues are then disposed along with other wastes in different types of disposal units. See, e.g. the document entitled, ''Background Documents Supporting the Phase IV Final Rule: Metal Treatment Standards'' in the RCRA Docket (commercial treatment company treating mineral processing wastes along with other metal-containing wastes and disposing of commingled treatment residues). These units certainly can generate mildly acidic leachate. 51 FR at 40594 (Nov. 7, 1986). Given these circumstances, the TCLP is an appropriate part of a standard which minimizes threats posed by land disposal of these wastes.

V. Other LDR Issues That May Affect Both Toxic Characteristic Metal Wastes and Characteristic Mineral Processing Wastes

A. Treatment Standards for Soil Contaminated With TC Metal Wastes or Characteristic Mineral Processing Wastes

1. Summary

EPA has decided that the LDR treatment standards (i.e., UTS) for toxicity characteristic metals (D004–D011) and newly identified mineral processing wastes being promulgated in today's rulemaking will not apply to soils contaminated with these hazardous wastes. Instead, these contaminated soils will be subject to the treatment standards for soil originally proposed in a separate rulemaking entitled the Hazardous Waste Identification Rule for Contaminated Media (''HWIR-Media'') (61 FR 11804, April 29, 1996). These treatment standards are being finalized in a separate section of today's rule. However, because of their impacts on TC metal and mineral processing wastes, a brief introductory discussion is warranted at this point.

2. Discussion of Today's Approach

In the Phase IV proposed rule (60 FR 43682, August 22, 1995), the Agency did not specifically exempt soil contaminated with TC metal wastes from the newly proposed LDR standards; thus, the UTS standards for metals would have applied to TC metal soils. In the Phase IV First Supplemental Proposal (61 FR 2338, January 25, 1996), the Agency proposed applying existing universal treatment standards to newly identified mineral processing wastes, i.e., to mineral processing wastes that exhibit a characteristic, do not have Bevill status, and are not excluded from being solid wastes due to recycling. As a consequence, soils contaminated with these newly identified mineral processing wastes would also have been subject to UTS.

In today's rule, the Agency is finalizing alternative treatment standards for contaminated soil reproposed in the HWIR-Media rulemaking. (See the section of this preamble on treatment standards for contaminated soil.) These treatment standards for hazardous contaminated soils are being finalized for all hazardous wastes, including TC metal and newly identified mineral processing wastes.

B. LDR Treatment Standards for Manufactured Gas Plant Waste (MGP)

1. Summary

Today, the Agency is promulgating treatment standards for hazardous MGP wastes and soils, i.e., wastes and contaminated soils that resulted from processing coal to produce gas and that exhibit a characteristic of hazardous waste. Typically these operations were conducted at manufactured gas plants until the 1950s, and wastes remain at those closed MGP sites. MGP wastes are among the mineral processing wastes which the Agency determined in 1989 and 1990 to be subject to RCRA jurisdiction because they are not excluded from RCRA by the Bevill Amendment. See 54 FR 36592 (September 1, 1989). Hence, they are a subset of the newly identified mineral processing wastes covered by the prohibitions and treatment standards promulgated in this rule.

On January 25, 1996, EPA proposed to apply LDR treatment standards to MGP wastes (61 FR 2360). MGP wastes are no longer being produced, since manufactured gas plants are no longer in operation. The Agency notes that the LDRs only apply at closed MGP sites that are excavated and managed in a way that constitutes placement in a land disposal unit (See 61 FR 18805, April 29, 1996.) The LDRs would require that actively managed MGP wastes be treated to eliminate any characteristics and to achieve the UTS for any underlying hazardous constituents prior to land disposal. Today's rule finalizes the UTS for MGP wastes that exhibit the toxicity characteristic. However, for soils contaminated with MGP wastes, EPA is today promulgating treatment standards specifically for hazardous soil. These soil standards, generally, require treatment to achieve 90 percent reduction of hazardous constituent levels, or 10 times the UTS levels. See Section VII of this preamble.

Today's rule does not alter the Agency's 1993 memorandum that interpreted existing rules to say that the ash that results from burning MGP remediation wastes along with coal in utility boilers remains covered by the Bevill amendment and hence is not regulated under Subtitle C rules. (See memorandum, dated April 26, 1993, entitled ''Remediation of Historic Manufactured Gas Plant Sites'', from Sylvia K. Lowrance, Director of the Office of Solid Waste, to EPA Regional Waste Management Division Directors. The memorandum is located in the RCRA docket for the Phase IV Supplemental Proposal dated January 25, 1996; 61 FR 2338.) Such residuals are considered to be covered by the Bevill amendment because they result primarily from the combustion of coal (assuming, if the MGP remediation wastes that are co-burned are hazardous, the residues are not significantly affected by burning the MGP wastes, within the meaning of 40 CFR section 266.112).

2. Background

Manufactured gas plants were designed to generate gas from coal. The coal tar residuals generated from the process remain at these historic MGP sites. Many of these sites have soils contaminated with these coal tar residuals. The majority of these contaminated soils will come from the cleanup of historic MGP sites. A significant portion of the soil is nonhazardous, but approximately 15 percent of the soils fail the toxicity characteristic leaching procedure test for benzene. These toxicity characteristic (TC) soils also typically contain PAHs, heavy metals, inorganics, volatile aromatics, and phenolics. At certain closed MGP sites, there can be non-soil hazardous wastes, e.g., coal tars in tar holders, which may need to be treated to UTS levels if they are actively managed and land disposed.

3. Public Comments and EPA Responses

Commenters expressed several major concerns about the Phase IV proposal to apply UTS to MGP wastes. First, they urged the Agency to delay implementing the soil standards until the final HWIR-media rule becomes effective. In addition, commenters requested that EPA re-affirm the Agency's 1993 co-burning memorandum for MGP wastes. Finally, commenters urged the Agency to establish specified treatment methods for those MGP wastes that will not be managed according to the Agency's 1993 co-burning memorandum, rather than making the wastes subject to the UTS concentration levels as proposed. One commenter identified several methods of management that could be specified: ''recycling technologies including the use of coal tar residuals to manufacture asphalt, bricks, and cement; and combustion technologies that include utility boiler co-burning, incineration and thermal desorption.'' The commenter stated that specified methods would preserve flexibility for managing MGP site remediations and remove regulatory barriers to expeditious site cleanups.

Regarding the commenter's concern about the coordination of Phase IV standards and the HWIR-media rule, the Agency is finalizing treatment standards for hazardous contaminated soils in a separate section of today's rule. Also, although the Agency did not reopen the issue, the Agency confirms that the 1993 co-burning interpretation remains in effect.

The Agency has studied carefully the comment urging the Agency to specify incorporation of MGP waste into asphalt, bricks, or concrete as a designated method of treatment, which would have the effect of making wastes so treated not subject to meeting numerical treatment standards for hazardous constituents. The recycling of hazardous waste-contaminated soil in asphalt, brick, or cement manufacturing produces products that potentially could be applied or placed on the land. These recycling practices incorporate the contaminated soils into the products, and, thus, are considered to be a ''use constituting disposal'' (see section 261.2 (c) (1)). The use constituting disposal practice (assuming legitimate recycling is occurring) is regulated per the provisions of 40 CFR sections 266.20 through 266.23. This issue is discussed in more detail in section VII of the preamble.

At this time, the Agency does not have adequate information on asphalt, brick, or cement produced from MGP hazardous waste to determine whether these waste-derived products minimize threats posed by land disposal of MGP wastes. (See also response to USWAG comment #00035 in ''Phase IV Response to Comments'' in the docket to this rule.) Until the Agency can further study the issue, it is not designating production of these materials from MGP soils as a specified method of treatment. Existing 266.23 (a) continues to apply. And, as noted earlier, for MGP sites in particular, the Bevill exclusion still applies for MGP wastes co-burned in coal-fired utility boilers.

EPA is aware that the regulated community has requested various types of flexibility from LDR treatment standards in managing their site-specific cleanup, remediation, and/or removal activities of these wastes and contaminated soils. With the possible exception of use consituting disposal scenarios, the Agency continues to believe that more complete relief for remediation wastes is needed, particularly with respect to the land disposal restrictions and is best provided by targeted statutory change. Thus, the Agency will continue to participate in discussion of potential legislative solutions on this important issue.

Please refer to the Phase IV response to comments document that is available at the RCRA docket for responses to other issues raised by commenters.

C. Treatment Standards for Debris Contaminated With Phase IV wastes

The Agency is clarifying that debris contaminated with TC metal or characteristic mineral processing wastes can be disposed if it meets the treatment standards established in this rule, but also can be disposed if it meets the standards for debris set out at 40 CFR 268.45.

D. Treatment Standards for Radioactive Mixed Waste

1. Background

Radioactive mixed wastes are wastes which satisfy the definition of radioactive waste subject to the Atomic Energy Act (AEA) 10 CFR Part 61 and also contain waste that is either listed as a hazardous waste in Subpart D of 40 CFR Part 261, or that exhibits any of the hazardous characteristics identified in Subpart C of 40 CFR Part 261. Since the hazardous portions of the mixed waste are subject to RCRA, the land disposal restrictions apply to the mixed waste. Today's rule promulgates revised treatment standards for radioactive wastes that are mixed with metal characteristic wastes and do not currently have a method of treatment (i.e. HLVIT) specified as BDAT.

Treatment standards for radioactive waste mixed with metal-bearing waste were first promulgated in the Third Third rule at 55 FR 22626 (June 1, 1990). That rule established a subcategory of mixed wastes for a specific high level wastestream at the Savannah River site, for which a specified method of treatment is currently required. This method is HLVIT (vitrification of high-level radioactive waste) for radioactive high-level wastes generated during the reprocessing of fuel rods mixed with characteristic metal wastes. This was done because of the human health hazards associated with sampling that would be required if numerical standards were applied. The Third Third rule stated that all the promulgated treatment standards in that rule for RCRA listed and characteristic wastes apply to the RCRA hazardous portion of mixed radioactive (high-level, TRU, and low-level) wastes, unless EPA has specifically established a separate treatability group for a specific category of mixed waste. Thus, that rule required that radioactive waste mixed with metal characteristic waste would have to comply with the LDR treatment standard for the metal characteristic waste, as well as any requirements set forth by the NRC for the radioactive component of the mixed waste.

Because today's rule revises the treatment standards for metal characteristic wastes (i.e., revising certain metal numeric treatment standards, and applying UTS levels to underlying hazardous constituents in the characteristic waste), the treatment standards for radioactive waste mixed with metal characteristic waste that were not specifically subcategorized in the Third Third rule are also affected. Today's rule also revises treatment standards for twelve metal constituents in all wastes, including radioactive mixed wastes. In conclusion, unless specifically noted in Section 268, the treatment standards promulgated today apply to all mixed wastes.

2. Proposal and Issues Discussed by Comments

In addition to revising metal characteristic treatment standards that apply to mixed waste, the Phase IV proposal also discussed mixed radioactive and characteristic metal wastes which have been previously stabilized to meet the LDR requirements, and are now being stored until disposal capacity becomes available. The rule proposed to allow this particular category of stabilized

characteristic metal mixed wastes to comply with the LDR metal standards that were in effect at the time the waste was stabilized. More simply, they would require no further treatment to comply with the newly promulgated TC metal standards. The proposal stated that mixed radioactive/characteristic metal wastes that are stabilized after the effective date of Phase IV would be subject to the metal treatment standards promulgated in the Phase IV rulemaking.

The majority of commenters agreed with this approach. The Agency believes that requiring facilities to re-treat the wastes could pose significant threats to human health and the environment (worker exposure, environmental releases). Essentially, requiring these wastes to meet the newly promulgated treatment standards could necessitate treaters opening sealed drums of stabilized mixed waste, grinding the stabilized material, and re-treating to comply with the treatment standards for the few constituents for which EPA is lowering the standards. One commenter wanted the exemption to be broadened to include wastes that were treated by methods other than stabilization. Because the exposure concerns of re-treating the previously stabilized waste primarily center around the idea of first grinding up the stabilized material to retreat it and the potential added radiological exposures attendant thereto, the broadening of this exemption without more specific information is not warranted at this point. Of course, if any wastes already meet the applicable treatment standards, for example macroencapsulation, then there is no need to initiate further treatment. It is important to emphasize that the Agency does not want any more handling of this material than is necessary, and we will entertain site-specific treatment variances to ensure that the appropriate balance is struck to ensure minimization of threats.

As noted, the majority of commenters agreed that hazards from added worker radiation exposure associated with re-treatment (i.e., opening drums, grinding already treated masses of mixed waste) would probably offset any gain in protection of human health and the environment resulting from compliance with the new metal treatment standards proposed in Phase IV. It was pointed out by one commenter that this is consistent with the Storage Prohibition (40 CFR 268.50(e)), where wastes that have met the applicable treatment standards are excluded from the storage prohibition. In addition, one commenter stated that these wastes have been treated to meet the LDR standards in place at the time of treatment, and the only reason they have not already been land disposed is that capacity has not been available. The one commenter who disagreed with the proposal stated that neither retreatment nor an exemption from the new standards are reasonable options, but prefers retreatment. The commenter did not provide support, and the Agency is not persuaded that retreatment is environmentally preferable. Thus, the Agency is promulgating the exemption as proposed. In response to comments, EPA is also indicating that the same principle applies with regard to listed wastes stabilized to meet a previous treatment standard, which standard is affected by this rule because the metal UTS have changed. Again, retreating these wastes would likely create new threats, not minimize them.

One DOE facility requested that the Agency clarify whether a waste required to be treated by a specific technology (i.e., HLVIT) would be required to be further treated for any UHCs present in the waste above UTS levels. The Agency is not imposing additional treatment requirements on those wastes for which a method of treatment (HLVIT) is specified.

Four facilities are concerned that uranium mills tailings will not remain exempt under RCRA. These wastes are by-product materials from uranium mining (i.e., waste acids from solvent extractions, barren lixiviants, slimes from solvent extraction and waste solvents generated in the beneficiation process during the extraction of uranium ore) and, therefore, are excluded from the treatment standards being promulgated today for TC metal wastes. With respect to the radioactive mineral processing wastes, RCRA Section 1004 (27) as codified in 40 CFR 261.4(a)(4) states that ''...source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954 as amended, 42 U.S.C. 2100 *et seq*...'' are not solid wastes. Therefore, such excluded materials are not subject to this rule. However, all other wastes not excluded under 40 CFR 261.4 are subject to today's rulemaking (assuming the waste is otherwise subject to today's rule).

Therefore, the Agency is today finalizing as proposed numerical treatment standards for radioactive waste mixed with metal-bearing characteristic waste for which no method of treatment has been established as the treatment standard.

E. Underlying Hazardous Constituents in TC Metal Wastes and Characteristic Mineral Processing Wastes

Summary: As with other characteristic wastes, TC metal wastes (D004—D011) and newly identified mineral processing wastes cannot be land disposed until the characteristic is removed and any underlying hazardous constituents (UHCs) are below universal treatment standards.

1. Background

In 1993, EPA began requiring that, in addition to removing the characteristic in the characteristic wastes, treatment must ensure that UHCs are below their UTS levels. (58 FR 29860; see also 59 FR 47982. See also *Chemical Waste Management* v. *EPA*, 976 F. 2d at 13–14, 16–18 (treatment standards may be lower than the level at which waste is identified as hazardous, and underlying hazardous constituents must be treated to minimize threats posed by land disposal)). UHCs are any constituents in 40 CFR 268.48 that are reasonably expected to be present at levels above the UTS at the point of generation of the characteristic waste. See 40 CFR 268.2(i). EPA's review of the treatment data on TC metal and mineral processing wastes shows that these wastes often contain underlying hazardous constituents, and that UTS are achievable for the UHCs.

2. Discussion of Today's Approach

In the August 22, 1995 Phase IV proposed rule, EPA proposed to apply treatment standards to all TC metal wastes, and on January 25, 1996, EPA further proposed the same for characteristic mineral processing wastes. See 60 FR 43654 and 61 FR 2338. Furthermore, EPA proposed that when the new treatment standards were promulgated, all of those newly identified wastes would have to be treated not only to meet the proposed treatment standards, but also to meet treatment standards for any UHCs reasonably expected to be present (at levels above UTS) in those wastes at the wastes' point of generation. See 60 FR 43654.

One commenter disagreed with the Agency's proposal, stating that the TC metal wastes that also contain organic UHCs would have to be treated by combustion technologies to achieve the organic UTS levels. The Agency disagrees. The organic UTS levels were based on the performance of combustion as well as other removal and destruction technologies. These other removal and destruction technologies can be used to treat organic UHCs to UTS levels in TC

metal wastes. Thus, pretreatment of the waste can be used to achieve the organic UTS levels. In addition, the commenter believed there would be difficulties in stabilizing incinerator ash to meet the finalized UTS levels for the metals. The Agency does not agree. In determining the UTS numbers for each metal, the wastes with the most difficult to treat metal constituents were treated by HTMR and stabilization technologies. The higher value between the two technologies was selected as the treatment standard. Thus, treatment using either HTMR or stabilization is expected to achieve the final metal UTS levels. It should be noted that selenium is not being regarded as a UHC since its treatment standard is above its characteristic level. Thus, a selenium characteristic waste will always be hazardous unless the selenium concentration is below the characteristic level of 1 mg/L TCLP. Fluoride, vanadium, and zinc are other metals not considered UHCs in characteristic wastes because these three metals are not on the Hazardous Constituents Table, 40 CFR 261 Appendix VIII (i.e., they are not ''hazardous constituents''). (See Background Document for Phase IV Second Supplemental Proposed Rule.)

VI. Issues Relating to Newly-Identified Mineral Processing Wastes

As explained above, EPA considers mineral processing hazardous wastes to be newly identified or listed for purposes of determining when LDR prohibitions apply, since their status as hazardous wastes was not established until after 1984. Today's rule establishes prohibitions and treatment standards for these wastes, pursuant to RCRA section 3004(g)(4).

However, there are a series of important threshold issues in determining what these prohibitions and treatment standards apply to, generally involving the issues of whether primary mineral processing secondary materials are solid and hazardous wastes. There are three main issues. A fundamental first issue is whether, if a mineral processing secondary material (which would otherwise be a hazardous waste) is recycled within the mineral processing industry sector, it is a solid waste. Of particular importance in assessing applicability of the LDR program, is a second issue: whether there is land placement of the mineral processing secondary material before recycling, or during the recycling process. If the material is a waste, a third issue is relevant: is the waste a beneficiation/extraction waste or one of 20 mineral processing wastes that are excluded from subtitle C regulation under the Bevill exclusion (see RCRA 3001 (b)(3)(A)(ii)).

In this rulemaking, EPA also is addressing certain sub-issues that are related to determining whether a particular mining waste is subject to the Bevill exclusion, including whether a waste is ''uniquely associated'' with mining, how the introduction of non-exempt, mineral processing feedstocks into a Bevill process may affect the Bevill status of the waste generated from the process, and how the mixture of Bevill wastes with other hazardous wastes affects the Bevill status of the resulting wastes when disposed.

As stated in the January 1996 proposal, EPA is not reopening in any respect the Bevill determinations previously made by the Agency, including the Agency's articulation in 1989 of the functional distinctions between beneficiation and mineral processing. *See* 61 Fed. Reg. 2354. Some commenters misinterpreted EPA's statements in the proposal generally describing the beneficiation/processing distinction as somehow reinterpreting the scope of the Bevill amendment. That discussion was intended, however, merely to restate principles articulated by EPA in 1989 (see 54 Fed. Reg. 36619), not to reopen in any way the distinctions as articulated previously by the Agency. Whether a particular waste is from beneficiation or mineral processing will continue to be determined based on 40 CFR 261.4(b)(7) and criteria articulated by EPA in the 1989 preamble.

The following sections of the preamble discuss these threshold issues.

A. Introduction

In July of 1988, the U.S. Court of Appeals, for the D.C. Circuit in *Environmental Defense Fund* v. *EPA (EDF II)*, 852 F.2d 1316 (D.C. Cir. 1988), *cert. denied*, 489 U.S. 1011(1989), ordered EPA to restrict the scope of the Bevill mining waste exclusion, as it applied to mineral processing wastes, to include only ''large volume, low hazard'' wastes. In response, the Agency promulgated several rules that delineated the scope of the Bevill exemption for extraction/beneficiation and mineral processing wastes. In these rulemakings, the Agency applied high-volume/low toxicity criteria for determining whether a particular waste was subject to the Bevill exemption. The Agency also described the general characteristics that would distinguish extraction/beneficiation wastes from mineral processing wastes. The rules also evaluated which specific mineral processing wastes were in conformance with these high volume/low toxicity criteria and thus were eligible for the exclusion provided by RCRA 3001(b)(3)(A)(ii) (the ''Bevill exclusion'').

These rules were promulgated on September 1, 1989 (54 FR 36592) and on January 23, 1990 (55 FR 2322). EPA was required to prepare a *Report to Congress* which further studied mineral processing wastes identified in the 1990 rule to determine their regulatory status under the Bevill exclusion. This report was issued on July 31, 1990 (*Report to Congress on Wastes from Mineral Processing*). EPA fully considered information from, and comments on, the *Report to Congress* in a regulatory determination published on June 13, 1991(56 FR 27300). The list of Bevill exempt activities and wastes is set out at 40 CFR 261.4(b)(7).

Many mineral processing wastes that EPA determined did not fall within the Bevill exclusion as a result of the 1991 rule appear to exhibit the toxicity characteristic due to metal content (D004–D011), and also exhibit corrosivity (D002), and/or reactivity (D003). For purposes of LDR applicability, these wastes are ''newly identified'' because they were brought into the RCRA Subtitle C system after the date of enactment of the Hazardous and Solid Waste Act Amendments on November 8, 1984. (See 55 FR at 22667 (June 1, 1990). Hence, their land disposal has not been prohibited until today's rule.

The Agency is currently required by a court approved consent decree (*EDF* v. *Browner*, No. 89–0598 (D.D.C.)) to promulgate LDR restrictions for characteristic and listed mineral processing wastes, and metal wastes hazardous under the revised toxicity characteristic, by April 15, 1998. On April 14, 1998, EPA filed an unopposed motion requesting the Court to extend the deadline to April 30, 1998 to establish Land Disposal Restrictions for newly identified mineral processing wastes by April, 1998. The legal obligation to establish prohibitions on land disposal and treatment standards for newly identified mineral processing wastes is established by statute. RCRA section 3004(g)(4).

B. Overview of Today's Rule

1. Issues Related to Which Mineral Processing Secondary Materials are Subject to LDRs

As noted above, a threshold question when considering whether wastes are prohibited from land disposal is whether the mineral processing secondary materials are ''solid wastes''

under RCRA. The issue is of importance with respect to land disposal prohibitions for the mineral processing industry because this industry recycles mineral processing secondary materials that exhibit hazardous waste characteristics, and sometimes uses land-based units—piles and impoundments—to store these materials before recycling. Thus, there is an issue as to whether such materials are solid wastes subject to the land disposal prohibition (as well as to the rest of Subtitle C). The Agency issued two proposals (61 FR 2338, January 25, 1996, and 62 FR 26041, May 12, 1997) which discussed potential RCRA jurisdiction over secondary materials from mineral processing that are reclaimed within the industry sector and sought comment on a proposed conditional exclusion from the definition of solid waste.

We now further summarize how today's rule deals with issues raised by whether and when mineral processing secondary materials, when placed in land-based storage units, are subject to the LDR standards and other Subtitle C controls. The rationale for the Agency's decisions are described below.

To be a hazardous waste, a material must first be a solid waste. RCRA section 1004 (5). To be a ''solid waste'' a material must in some sense be ''discarded.'' RCRA section 1004 (27). A material is not ''discarded'' if it is ''destined for immediate reuse in another phase of the industry's ongoing production process and [has] not yet become part of the waste disposal problem.'' *American Mining Congress* v. *EPA*, 907 F. 2d 1179, 1186 (D.C. Cir. 1990).

This rule amends the current RCRA rules (existing 40 CFR 261.2(c)(3)) defining which ''secondary materials''—sludges, by-products and spent materials—being generated by and reclaimed by mineral processing or beneficiation facilities are solid wastes. The rule does so by creating a conditional exclusion to the regulatory definition of solid waste, so that:

(a) Mineral processing secondary materials may not be stored on the land before they are reclaimed. The rule provides a partial exception to this principle: if the pile is placed on a pad which has been approved as protective by an EPA Region or a State with an authorized program, the pile would not be considered to be storing solid or hazardous waste, and so would be outside RCRA jurisdiction. Thus, if storage is used prior to reentry into a mineral processing reclamation process, to be excluded, all mineral processing secondary materials must be placed in tanks, containers, buildings, or approved piles resting on pads;

(b) Mineral processing secondary materials must be legitimately recycled to recover metal, acid, cyanide, water, or other values:

(c) Mineral processing secondary materials cannot be accumulated speculatively; and

(d) Facilities utilizing this conditional exclusion must submit a one-time notification of their recycling activities to EPA or the authorized State describing: the materials being recycled and the processes into which they are recycled; where storage units are located and their design. Facilities must update the notification if their recycling activities change.

EPA is thus essentially disclaiming authority over mineral processing secondary materials that are reclaimed within the mineral processing or mining/beneficiation industry sector, so long as there is no land-based storage preceding reclamation. Further, potential jurisdiction affects only *storage.* EPA is not asserting authority over any mineral processing production unit, even if the unit is land-based.

2. Issues Related to Whether Materials are Within the Scope of the Bevill Exclusion

a. Use of Non-Bevill Materials as Feedstocks to Operations Whose Waste is Bevill Exempt. Today's rule also allows secondary materials from mineral processing to be co-processed with normal raw materials in beneficiation operations which generate Bevill exempt wastes, without changing the exempt status of the resulting Bevill waste, provided that legitimate recovery of the mineral processing secondary material is occurring, and provided that primary ores and minerals account for at least 50 percent of the feedstock. The Agency voiced concern at proposal that the addition of mineral processing secondary materials into a Bevill exempt extraction/beneficiation process could have the potential to increase the risk of the resulting wastes. The Agency proposed adding a condition—the use of a significantly affected test (similar to the existing test used in the Burning in Industrial Furnaces (BIF) Rule (see 40 CFR 266.112))—as a means of assuring that resultant Bevill wastes were not adversely impacted by co-processing. EPA also considered simply limiting eligibility for Bevill status to situations where Bevill raw materials comprised the sole feedstock to the process.

After considering public comments, the Agency has decided to adopt the general approach proposed in January 1996, with one change. The Agency now does not believe that the use of the ''significantly affected'' test would appreciably reduce risks posed by the resulting wastes, and the Agency is concerned that it would severely disrupt legitimate recycling practices within beneficiation and mineral processing industries. Even in situations where a constituent may increase due to recycling, the increase may not be environmentally significant, may be balanced by the lowering of other constituents, or may be off-set by having to dispose of the material and utilize additional raw material feedstocks.

b. Uniquely Associated. The Bevill exclusion for the primary metal sector is limited to extraction/beneficiation wastes and 20 mineral processing wastes. Under Section 3001(b)(3)(A)(ii) of RCRA, the Bevill exclusion is available for ''solid waste from the extraction, beneficiation and processing of ores and minerals.'' Under the Agency's longstanding interpretation, a waste must be ''uniquely associated'' with mining and processing of ores and minerals to be subject to the Bevill exclusion. The Agency currently uses a qualitative approach (see 45 FR 76619 and 54 FR 36623) to determine if a waste is uniquely associated. Because of public interest in how the Agency makes these determinations, the Agency sought comment on alternative approaches for making ''uniquely associated'' determinations.

The Agency is retaining and clarifying in this rule its use of its qualitative approach. The Agency recognizes that determining whether a particular waste is uniquely associated with extraction, beneficiation, and processing involves an evaluation of the specific facts of each case. While the Agency discussed, in the May 1997 proposal, several options that would establish a bright line for making this determination, the Agency is concerned that any of these tests could potentially be either over- or under-inclusive of the wastes that, in EPA's view, are best viewed as uniquely associated.

In the Agency's view the following qualitative criteria should be used to make such determinations on a case-by-case basis:

(1) Any waste from ancillary operations are not ''uniquely associated'' because they are not properly viewed as being ''from'' mining or mineral processing.

(2) In evaluating wastes from non-ancillary operations, one must consider the extent to which the waste originates or derives from processes that serve to remove mineral values from the ground, concentrate or otherwise enhance their characteristics to remove impurities,

and the extent to which the mineral recovery process imparts its chemical characteristics to the waste.

c. Bevill Mixtures. EPA first addressed mixing of hazardous wastes with Bevill wastes in 1989 (see 54 FR 36622–23). That rule provided that mixtures of Bevill wastes and listed wastes would be considered a hazardous waste unless and until the mixture was delisted. A mixture of Bevill waste and non-excluded characteristic hazardous waste, however, would be considered hazardous if it exhibited a characteristic of the non-excluded waste, but not if it exhibited a characteristic imparted to it by the Bevill waste. As explained in the proposal, this Bevill mixture rule was remanded to the Agency in *Solite Corp* v. *EPA*, 952 F.2d 472, 493–94 (D.C. Cir. 1991), and an emergency reinstatement of that rule was vacated on procedural grounds in *Mobil Oil* v. *EPA*, 35 F.3d 579 (D.C. Cir. 1994). Today EPA is reinstating the 1989 Bevill mixture rule. Under this 1989 rule, a mixture of a Bevill-exempt waste and a characteristic hazardous waste (or a waste listed solely because it exhibits a hazardous characteristic) is a hazardous waste if it continues to exhibit the characteristic of the non-excluded waste. Mixtures of Bevill wastes and other listed wastes are hazardous wastes unless and until delisted. In addition, the act of mixing Bevill and and non-Bevill wastes is subject to all normal Subtitle C consequences (i.e., requires a permit if it constitutes treatment, storage of disposal of hazardous wastes). EPA is adopting this approach because it preserves the Bevill exclusion for mixtures that are characteristically hazardous due to Bevill wastes, but nonetheless ensures that the Bevill Amendment is not used to allow Bevill wastes to shield/immunize non-Bevill hazardous wastes from regulatory controls that would otherwise apply to those wastes.

d. Response to Court Remands Dealing with Other Issues Relating to Mineral Processing and to Scope of Bevill Exclusion. (i) Toxicity Characteristic Leaching Procedure (TCLP) The applicability of the TCLP test to mineral processing wastes was challenged in *Edison Electric Institute* v. *EPA*, 2 F.3d 438 (D.C. Cir. 1993). In that case the Court held that the Agency must provide at least some factual support that the mismanagement scenario assumed in developing the TCLP is plausible when applied to mineral processing wastes or, alternatively, that mining wastes are exposed to conditions similar to those simulated by the TCLP, namely ''contact with some form of acidic leaching media''. 2 F. 3d at 447. EPA prepared a technical background document in support of the January, 1996 proposal, which presented data on this issue. This report concluded that mineral processing wastes had in the past been co-disposed with municipal wastes, and due to the location of mineral processing plants near large urban areas, it was plausible that these wastes could be mismanaged with municipal wastes. EPA also solicited information from the public that would help the Agency evaluate industry comments that the Synthetic Precipitation Leaching Procedure (SPLP) would provide a more accurate measure of how mineral processing wastes behave in the environment. EPA received extremely limited data from the public on this issue.

EPA has concluded, based on the information available to the Agency and review of public comments, that co-disposal of mineral processing wastes with municipal wastes is a plausible mismanagement scenario and that, therefore, application of the TCLP to these wastes continues to be appropriate. Moreover, comments from industry during the rulemaking stated that certain facilities co-manage mineral processing wastes with extraction and beneficiation wastes. Given the well-documented, acidic nature of some extraction and beneficiation wastes, mineral processing wastes disposed of in this manner may be subject to the kinds of low pH conditions that are reflected in the TCLP. For this additional reason, EPA finds that, under the plausible mismanagement standard articulated in *Edison Electric*, application of the TCLP to mineral processing wastes is appropriate in light of the information at the Agency's disposal. While the Agency has received comments seeking to compare the TCLP and the SPLP, the Agency has concluded, for reasons discussed later in this preamble, that this information is not sufficient to support adopting the SPLP as the appropriate test for mineral processing wastes at this time.

The Agency recognizes that the methodology underlying the TCLP may not reflect the variety of conditions under which some types of mineral processing wastes are disposed. As a result, the Agency will undertake, and within three to five years, conclude a review of the appropriateness of using the TCLP and other leaching protocols in this and other contexts.

(ii) Listed Hazardous Wastes. In *American Mining Congress* v. *EPA*, 907 F.2d 1179 (D.C. Cir. 1990), the Court found that the Agency's record regarding the listings of five waste streams (K064, K065, K066, K090, K091) did not adequately address certain issues raised in comments. EPA indicated its intent not to list these five waste streams in the January, 1996 proposal and placed a technical background document in the docket enumerating the reasons for those decisions. Many of these wastes are either no longer generated, or managed in a fashion not warranting listing. EPA did not receive any comments challenging those proposed decisions. Therefore, in this rule, EPA is not listing these five smelting wastes as hazardous wastes. Instead, EPA will rely on the RCRA hazardous waste characteristics to identify those portions of the wastes requiring management as hazardous wastes.

(iii) Titanium Tetrachloride. In 1989, EPA determined that wastes from the production of titanium tetrachloride were mineral processing wastes. DuPont challenged this decision, and the Court remanded EPA's decision for further consideration on grounds that the Agency's decision was unclear (see *Solite Corporation* v. *EPA*, 952 F.2d at 494–95 (D.C. Cir. 1991)). EPA reevaluated data on wastes from the production of titanium tetrachloride, and placed results of this reevaluation in the docket in support of the January 1996 proposal. EPA also has met with representatives of DuPont to discuss their process further. Based on the Agency's reevaluation of this issue, EPA, in this rule, concludes that iron chloride waste acid generated from the chloride-ilmenite process of titanium tetrachloride production should be classified as a mineral processing waste. The Agency has reached this decision because this process significantly affects the physical/chemical structure of the raw feedstock through chlorination and this reaction creates new chemicals (iron chloride and titanium tetrachloride gases). This meets the definition of mineral processing rather than beneficiation.

(iv) Air Pollution Control Dust and Sludges Generated From Lightweight Aggregate Production. Finally, since 1995, the Agency has conducted reviews of air pollution control dust and sludges generated from lightweight aggregate production, and has met with representatives of this industry sector. The Agency also has issued a Report *to Congress* and a regulatory determination on Cement Kiln Dust (CKD) (59 FR at 709, January 6, 1994 and 60 FR at 7366, February 7, 1995). EPA has found that some aggregate kilns and cement kilns use hazardous waste fuels to fire their units. Both types of facilities generate dusts which may be either reintroduced

into the kiln or blended into the final product. While these dusts rarely exhibit any of the RCRA hazardous waste characteristics, the resultant product could be classified as hazardous waste due to the ''derived from'' rule if listed hazardous wastes are combusted. The Agency is seeking a way to encourage the legitimate and environmentally sound reuse of dusts, from both cement and lightweight aggregate manufacture. In an effort to develop a consistent regulatory approach, EPA, therefore, has decided to defer any decision on the Bevill status of air pollution control dust and sludges generated from lightweight aggregate production until evaluation of issues related to CKD and lightweight aggregate dust handling, use, and disposal can be completed.

e. Reexamination of Bevill Exempt Wastes. The May 12 proposal sought general comment on whether a reexamination of some Bevill waste is warranted given that additional risk assessment techniques and additional information are available since making the 1986 Bevill regulatory determination (51 FR at 24496, July 3, 1986) on mining and the 1991 Bevill regulatory determination on mineral processing (56 FR 27300, June 13, 1991). EPA presented information from Superfund sites and other sources which indicate that some Bevill wastes continue to cause environmental damage (see environmental damage and risk technical background documents placed in the January 1996, and April, 1997 dockets). The Agency also posed the question of whether some waste streams require additional study or regulatory controls. Today's rule is not making any changes to the status of Bevill exempt extraction and beneficiation wastes or the 20 exempt mineral processing wastes.

C. Analysis of and Response to Public Comments

1. Jurisdiction

a. EPA Authority to Regulate Mineral Processing Secondary Materials Reclaimed Within the Industry. Many industry commenters maintained that EPA lacks jurisdiction over mineral processing secondary materials reclaimed within the industry because such materials cannot be ''solid wastes.'' The argument is straight-forward: a solid waste regulated under RCRA must be a ''discarded material,'' RCRA section 1004 (27), and these materials are not discarded. The comments suggest that, under the case law, (in particular *American Mining Congress* v. *EPA,* 824 F. 2d 1177 (D.C. Cir. 1987) (''*AMC I*'')), these materials are part of an on-going production process within the generating industry, and so cannot be ''discarded.''

EPA disagrees that there is an absolute jurisdictional barrier to regulating any management of mineral processing secondary materials which are reclaimed within the industry. Although the *AMC I* court found that, in some respects EPA's 1985 rules exceeded the statutory grant of authority, subsequent judicial opinions have sharply limited the scope of *AMC I.* The only absolute bar on the Agency's authority to define recycled mineral processing secondary materials as solid wastes is for ''materials that are 'destined for *immediate reuse* in another phase of the industry's ongoing production process' and that 'have not yet become part of the waste disposal problem.''' *American Mining Congress* v. *EPA,* 907 F. 2d 1179, 1186 (D.C. Cir. 1990) (''*AMC II*'') quoting *AMC I,* 824 F. 2d at 1186.[2]) The case law likewise makes clear that ''discarded'' is an ambiguous term, within EPA's discretion to interpret, consistent with RCRA's overall goals and purposes. *AMC II,* 907 F.2d at 1179; *American Petroleum Inst.* v. *EPA,* 906 F.2d 726, 741(D.C. Cir. 1990).

Applying this test, today's rule states that any mineral processing secondary materials which are being reclaimed immediately within the mineral processing industry (or within beneficiation) are not a solid waste. However, as explained below, EPA does not view mineral processing secondary materials which have been removed from a production process for storage as being ''immediately reused,'' and so such materials are not automatically excluded from jurisdiction. EPA reiterates that there is a jurisdictional bar against regulating the actual production process (see *Steel Manufacturers Association* v. *EPA,* 27 F.3d 642, 647 (D.C. Cir. 1994); EPA also interprets the holding of *AMC I* to mandate this result), so today's rule does not assert authority over mineral processing production units. However, if production units are also used to dispose of hazardous wastes, those units are subject to RCRA Subtitle C.

With respect to mineral processing secondary materials which are stored before being reclaimed at mineral processing or beneficiation facilities—i.e. that are not being immediately reused—the Agency has established a conditional exclusion from the definition of solid waste, the conditions being designed to assure that management of these materials are not ''part of the waste disposal problem.'' The main condition is that mineral processing secondary materials not be stored on the land (except for storage on approved pads) and not be stored in disposal units.

In considering the question of scope of jurisdiction, it is useful to remember that this rule applies to a continuum of potential recovery practices. At the one end of the continuum, where EPA's authority is most certain, would be the situation where mineral processing company A sends its secondary materials to unrelated mineral processing company B processing a different metal than company A. The case law indicates that EPA retains discretion to classify the material as a solid waste. *API,* 906 F.2d at 741 (transfer of steel industry dust to a metal reclaimer processing exclusively steel industry secondary materials can involve a RCRA solid waste). It should be remembered that EPA views ''mineral processing'' broadly in this rule to include all primary mineral processing sectors (see, e.g., the Agency's 1996 *Identification and Description of Mineral Processing Sectors and Waste Streams*). This document identified 41 different sectors involved in primary mineral processing. Primary mineral processing involves changing the physical and chemical structure of ores and minerals. For example, mineral processing includes the production of steel and the production of gold. These sectors generate very different types of wastes and recycle them under different conditions. Thus, the *API* principle of no absolute jurisdictional bar applies.

Points further in on the continuum would be if companies A and B process the same metal but are unrelated companies (also potentially within the *API* framework), and where companies A and B are under common ownership but not at the same site. The point on the continuum closest to on-going production is where secondary materials are reclaimed at the generating site, but where the process is non-continuous due to storage of materials. Immediate recovery on-site without storage would then mark the other end of the continuum, and would illustrate when materials are immediately reused within a continuous process, and so

[2]The other cases which have similarly stressed this narrow reading of *AMC I* are *American Petroleum Inst.* v. *EPA,* 906 F. 2d 726, 741 (D.C. Cir. 1990); *Shell Oil* v. *EPA,* 950 F. 2d 741, 755–56 (D.C. Cir. 1991); *Chemical Waste Management* v. *EPA,* 976 F. 2d 2, 14 (D.C. Cir. 1992); *United States* v. *Ilco, Inc.,* 996 F. 2d 1126, 1131 (5th Cir. 1993); and *Owen Electric Steel Co.* v. *Browner.* 37 F. 3d 146, 149–50 (4th Cir. 1994).

absolutely outside Subtitle C jurisdiction.[3]

EPA believes that it has discretion to consider whether any of these situations short of immediate reuse involve solid wastes, this discretion being limited by the second part of the Court's articulated test: is the non-continuous management of the mineral processing secondary materials part of the waste disposal problem. Thus, EPA in today's rule has focused on the storage of these materials. The leading authority for this approach is *AMC II,* where the Court found that secondary materials generated and reclaimed on-site could be classified as solid wastes because they were stored in surface impoundments. 907 F. 2d at 1186. The case involved a single plant which stored its secondary materials —sludges—in an impoundment before reclaiming all of the accumulated sludges in its own smelting process. 50 FR at 40292, 40296 (October 1985). Several comenters argued that *AMC II* involved only specutlative accumulation. This is not the case. The wastes generated in the impoundment were actually recycled 100 percent, not stored with expectation of recycling. 50 FR at 40292, 40296; Brief of Petitioner Amercian Mining Congress in *AMC II* (filed March 30, 1990) pp. 18, 29. The Court nonetheless held that the sludges were discarded, stressing the special sensitivity in RCRA to land-based units such as surface impoundments, and explaining how storage of secondary materials in such units can be part of the waste disposal problem (907 F. 2d at 1186–87). Thus, EPA believes that mineral processing secondary materials stored on the land are discarded.

Land-based storage of mineral processing sludges, spent materials, and by-products can be viewed by EPA as being part of the waste disposal problem. There is no dispute that a considerable amount of mineral processing secondary materials contain hazardous constituents that can threaten human health and the environment (see U.S. EPA, Office of Solid Waste, *Human Health and Environmental Damages from Mining and Mineral Processing Wastes,* 1995, and *Damage Cases and Environmental Releases,* 1997). Land-based units, and impoundments in particular, have certain inherent indicia of discard due to their inability to prevent releases of contained materials. RCRA section 1002(b)(7); *AMC II,* 907 F.2d at 1187; 53 FR at 521, 525 (Jan. 8, 1988). Surface impoundments pose essentially inherent risks of groundwater contamination due to the hydraulic pressure created by the contained liquids. *Chemical Waste Management* v. *EPA,* 919 F. 2d 158, 166 (D.C. Cir. 1992). There are many damage incidents which involve storage of mineral processing wastes in piles and surface impoundments, some of which involve mineral processing secondary materials stored in land-based units before eventual reclamation. These damage incidents confirm that this potential harm is not hypothetical.

It should be noted that there is Agency precedent for the limitation on land based storage as part of within-industry recycling practices. The Agency established the principle of encouraging recycling without allowing land-based storage at 40 CFR 261.4(a)(10). Any wastes from coke by-product production are not solid wastes if recycled to coke ovens conditioned on there being no land disposal from the point of generation to the point of recycling. The Agency also has promulgated a rule where recovered oil generated by any facet of petroleum exploration, production, and retailing is not a solid waste conditioned on no management of these materials in land-based units (see 59 FR 58936, July 28, 1994). The Agency has also proposed to extend this principle to a wider range of oil-bearing secondary materials (see 60 FR 57747, 57753, November 20, 1995). The condition likewise appears in current rules at 40 CFR 261.2(e)(iii) where it qualifies the exclusion for materials returned for reclamation in the process from which they are generated. The application of a no land placement condition in today's rule is, therefore, building on an established policy of encouraging recycling conditioned on no land placement.

Putting this together, the Agency reads the statute as creating an absolute jurisdictional bar in two situations: where mineral processing or beneficiation is occurring, and where reclamation is continuous in the sense that there is no interdiction in time—i.e. materials moving from one step of a recovery process to another without a break in the process, as for storage. As one moves back along the continuum, EPA has discretion to interpret whether secondary materials may be considered discarded. The Agency is exercising that discretion here by putting its focus on whether the reclamation, or more precisely, the storage which precedes reclamation, is part of the waste disposal problem because it involves storage which can be and has been part of that problem.

b. Are There Limits on Jurisdiction? (Response to Public Interest Group Position). In contrast, representatives of public interest groups argued that the Agency's authority was essentially unlimited. They believe that the authority should be extended, at a minimum, to all land-based units because such units are a type of disposal unit. With respect to mineral processing secondary materials that are managed in tanks, containers, or buildings (i.e. in other than land-based units), EPA sees no principle that compels the materials to be designated as solid wastes. As explained above, case law indicates that EPA has discretion to interpret which materials are ''discarded'' consistent with the overall statutory objective, *API,* 906 F.2d at 742. These objectives include not only assuring safe management of hazardous wastes, but also ''encouraging . . . materials recovery, [and] properly conducted recycling and reuse . . . .'' RCRA section 1003(a)(6). EPA's construction in today's rule, which rests largely on the distinction between land-based storage and more environmentally protective storage of secondary materials, is consistent with this object by encouraging ''properly conducted recycling. . . .'' In addition, EPA reads the case law as allowing the Agency to make reasonable distinctions among secondary material handling practices in determining when a particular recycling practice may be considered to be ''part of the waste disposal problem.'' Finally, as EPA explained at proposal, there are potential jurisdictional constraints given that the mineral processing industry exists to recover mineral values from an initial raw material, and some aspects of recovery of mineral values from secondary materials can be like sequential processing of an initial raw material. 61 FR at 2342. Where there is no obvious element of discard present, such as land-based storage, the Agency does not believe that it should exercise its interpretive discretion to assert authority.

With respect to intra-industry reclamation practices involving land-based units, EPA largely is asserting authority. EPA proposed a series of conditions that would have allowed land-based storage units on the idea that there were certain unique necessities within this industry compelling use of such units. 61 FR at 2341. However, as the rulemaking progressed, it became

[3] The Agency indicated in its January 1996 proposal that some lower value mineral processing secondary materials are from ancillary production operations and that those materials were often placed in land-based storage units. 61 FR at 2340. Industry comments challenged this discussion as over broad and misplaced. Upon review, the Agency acknowledges that mineral processing facilities generate a wide range of secondary materials, which also have a wide range of values to the facility owner.

apparent that there are no such production-related necessities. Agency reevaluation of mineral processing secondary material volumes indicated that, in addition to volumes being lower than EPA initially believed, comparison to volumes of other industrial hazardous wastes indicated that these wastes were often higher in volume than mineral processing secondary materials and were being stored off the land. Consequently, the Agency is claiming authority over most land-based storage units.

The Agency is not, however, asserting authority over piles resting on pads determined by a state or EPA to be protective. The reasoning is similar to that for not claiming authority over within-industry secondary materials stored in tanks, containers or buildings. Such materials need not be viewed as ''part of the waste disposal problem,'' and so, given the intra-industry recycling, need not be considered ''discarded.'' The practice also can be viewed as a type of ''properly conducted recycling'' which should be encouraged. Again, EPA views this determination to be within its interpretive discretion.

EPA also disagrees that it is compelled to assert control over land-based units that are actual production units, i.e. that actually recover product. The Agency is aware of only two land-based units which recover metals: gold heap leach piles and copper dump leach piles. Under prior rulemakings (54 FR 36592 and 55 FR 2322), the Agency has defined these land-based units as extraction/beneficiation activities. The Agency is unaware of any other land based process units which actually recover metals. The Agency believes that regulating such units could pose the possibility of interdicting actual production steps which was the particular focus of the *AMC I* court. EPA notes, however, that storage units which also make secondary materials more suitable for actual recovery, such as equalization basins, can remain within Subtitle C jurisdiction. These units, in the Agency's view, are not the part of the process which actually produces an end product (such as the smelter at a smelting facility). At most, they facilitate eventual recovery. The Agency does not read the case law to say that such storage units are in all cases outside the authority of Subtitle C.

EPA also is not asserting authority over mineral processing secondary materials once they are removed from approved storage for reclamation. Thus, should a mineral processing plant reclaim mineral processing secondary materials after those materials are stored in land-based units (i.e. the materials defined as hazardous wastes in today's rule), they would no longer be solid and hazardous wastes. EPA believes it would be counterproductive to retain the hazardous waste status for mineral processing secondary materials entering reclamation. If the materials remain hazardous wastes, for example, the smelting process itself could be subject to Subtitle C regulation. EPA believes that it retains discretion to classify the removed materials as no longer being solid and hazardous wastes.

The Agency believes it has discretion to adopt this classification notwithstanding the court's decision in *American Petroleum Institute.* v. *EPA,* 906 F.2d 726 (D.C. Cir. 1990). In that case, the Court held that EPA had adopted the so-called indigenous principle, whereby secondary materials stopped being wastes at the point they were utilized as feedstock in a production process related to the one that generated it, without sufficient justification. 906 F.2d at 741–42. However, in that case, EPA had made no attempt to determine which materials were part of the waste disposal problem, and which were not. Here, the Agency is making clear that storage on the land of mineral processing secondary materials is the environmental concern, and that reclaiming mineral processing secondary materials within the industry is ordinarily a form of proper recycling which may permissibly be encouraged. RCRA section 1003(a)(6).

EPA also notes that it is possible that no mineral processing secondary materials will be placed in impoundments or in unapproved piles. Under today's rule, if a facility wishes to use a pile for storage (assuming the pile has not been adjudicated to be protective), the wastes would first have to be treated to meet Land Disposal Restrictions standards, probably rendering them unrecoverable. If an impoundment is utilized, wastes need not be pretreated, but the impoundment would have to meet minimum technology design standards and be dredged annually (RCRA section 3005(j)(11) and 40 CFR section 268.5) and, of course, ultimately obtain a RCRA permit. The Agency anticipates that facilities will use a non land-based form of storage instead.

c. Immediate Reuse.[4] In the May 1997 proposal, EPA suggested a different way of defining absolute jurisdictional limits, namely to say that secondary minerals generated by and ''immediately reused'' within the mineral processing industry, were not solid wastes. The reference to ''immediate'' was suggested as a means of interpreting the ''immediate reuse in another phase of the industry's ongoing process'' standard articulated in the case law. *AMC I,* at 824 F. 2d at 1185. The Agency proposed that secondary materials that were legitimately recycled within 48 hours would be outside RCRA jurisdiction, regardless of whether they were stored between process steps (including storage in land-based units). See 62 FR at 26051.

Industry and public interest groups both opposed the use of the 48-hour time limit included in the January 1996 proposal to define immediate reuse. Industry renewed its categorical objections based on *AMC I,* and noted that many secondary materials are legitimately reclaimed long after they are generated and the time period between generation and reclamation in no way affected their value. For example, commenters stated that the gold industry generates retort slags which contain gold values. Comments stated that these slags are stored off the ground for periods up to six months after which they are reintroduced into their recovery process.[5]

Public interest groups objected to the 48-hour limit on the basis that an absolute waiver of RCRA jurisdiction based on time does not translate to any reduction of environmental risk. Public interest groups also noted that the Court in *AMC II* granted jurisdiction to units holding secondary materials with the propensity to leak, and that the Court's opinion would extend to all land placement, since the continuous placement of materials on piles or other land-based units would result in the same ''discard'' underlying the Court's opinion.

Although the Agency necessarily accepts that materials immediately reused in another phase of the industry's ongoing production process are beyond EPA's jurisdiction, *AMC I,* 824 F.2d at 1185, the Agency is not adopting in today's rule the proposed 48-hour approach to define immediate reuse. The Agency is defining ''immediate reuse'' as the continuous recirculation of secondary materials

[4] It should be noted that EPA is not using ''reuse'' as a term of art in this section of the preamble (i.e. is not using the term as defined in 40 CFR 261.1(a)(5)), but rather is referring to immediate reclamation of materials (i.e. material recovery) at a mineral processing facility. The key concept here is actually ''immediate,'' which EPA is using to interpret the phrase ''continuous process'' used in the case law.

[5] It should be noted that since no land-based storage is involved, these gold slags are not solid wastes under the final rule in any case (assuming that the recovery is legitimate and that the other conditions in the rule are satisfied).

back into recovery processes without prior storage. The plain reading of the words ''continuous,'' 824 F.2d at 1193, and ''immediate'' preclude storage. Storage by its very nature means that processes are not continuous; rather, storage means that materials are generated which must be held apart for some period of time prior to reentry into a process. Storage, therefore, breaks the continuous and immediate nature of production and reentry. In addition, land-based storage units have inherent elements of discard. *AMC II,* 907 F. 2d at 1186–87.

The definition of ''immediate reuse'' in today's rule does not bar storage prior to recycling. Mineral processing industries will be able to store and recycle their mineral processing secondary materials outside RCRA Subtitle C requirements if they do so while meeting the conditions of the exclusion from the definition of solid waste contained in today's rule.

In the May 1997 proposal, the Agency discussed the possibility that some molten metals that spill onto the ground could be classified as materials undergoing immediate reuse (see 62 FR at 26051). The Agency noted that copper reverts (refined copper material) can be spilled in the process of being transferred from one part of the smelting process to another. Such reverts are picked up as soon as they can be safely handled and are placed directly back into the smelting process. The Agency has reviewed smelting processes in other metal sectors and finds that spillage from ladles is common and that these materials are routinely picked up within a short time and placed back into the process. The Agency thus concludes that molten metal spilled onto smelter floors is not a solid waste if it is picked up as practical (given heat and worker safety factors) and is then placed back into the smelting process. Such a material is not a secondary material (i.e. sludge, by-product, or spent material), but rather remains in process. This interpretation parallels existing rules, which say that a spilled commercial chemical product is not a solid waste if it is recycled within a reasonable amount of time (see 40 CFR 261.33 and 55 FR at 22671).

Industry commenters stated that spent smelter brick was similar to reverts since they are often returned back into recovery processes. If such spent bricks are stored before being recycled, they are not being immediately reused (nor are they still in process, since they are spent and physically removed). As noted in the Agency's May 1997 proposal, copper flue dusts, also are stored sometimes and not immediately recycled. Flue dusts not meeting the immediate reuse definition are defined as mineral processing secondary materials (usually a sludge, since these dusts are usually air pollution control residue) and would be eligible for the conditional exclusion to the definition of solid waste.

d. Relation to the Current Regulatory Definition of Solid Waste. (i) Distinctions among Sludges, By-products, and Spent Materials. The existing regulatory definition of solid waste classifies metal recovery operations as a type of reclamation activity, and then states that certain secondary materials being reclaimed are, or are not, solid wastes depending on the type of material being reclaimed. Spent materials being reclaimed are solid wastes, while characteristic sludges and by-products being reclaimed are not solid wastes. See, generally, 40 CFR 261.2(c)(3) and 50 FR at 633–34, 639–41 (January 4, 1985).

As EPA noted at proposal, these distinctions among types of secondary materials being reclaimed are not needed because they are not directly based on environmental distinctions. 61 FR at 2342. In this industry, at least, the distinctions do not relate to which of these materials may be part of the waste disposal problem.[6] The more environmentally meaningful distinction, and the one adopted here, is between land-based storage and storage in tanks, containers, and buildings.

In this rule, the Agency is, therefore, eliminating the regulatory distinctions between by-products, sludges and spent materials from mineral processing when these materials are reclaimed. Thus, under the amended rule, if any secondary material—sludge, by-product, or spent material—is legitimately reclaimed within the mineral processing industry, it is not a solid waste as long as all other conditions to the exclusion to the definition of solid waste are satisfied. EPA believes that this principle not only should encourage properly conducted recycling within the industry, but also fulfills an Agency objective of reducing some of the complexity in the existing regulatory definition of solid waste.[7]

(ii) Other existing regulatory exclusions. The existing regulatory definition of solid waste also contains a series of exclusions in 40 CFR 261.2(e), two of which could apply to the mineral processing industry. Section 261.2(e)(1)(ii) excludes from the definition of solid waste sludges, by-products and spent materials (i.e. secondary materials) which are ''used or reused as effective substitutes for commercial products.'' An example could be mineral processing acid plant blowdown substituting for commercial acid in another process (either mineral processing or a process in a different industrial category).[8] Commenters from industry questioned whether this provision is affected by the amendments relating to mineral processing secondary materials being reclaimed. The answer is that the provision remains as an independent basis for excluding secondary materials from Subtitle C. EPA did not propose to change it, and the issues involved, in any case, would be broader than the present proceeding since the basis for the exclusion does not rest on the notion of a continued process within an industry, but on comparability of secondary and virgin materials (see 50 FR at 619–20 and 637–41 (Jan. 4, 1985)).

The second existing exclusion, found at 261.2(e)(1)(iii), does overlap with the present rule. The exclusion is for secondary materials ''returned [as a substitute for feedstock materials] to the original process from which they are generated, without first being reclaimed or land disposed.'' An example could be an emission control dust from primary smelting which is returned directly to the smelter for metal recovery without any interim land disposal.

This provision is essentially consistent with, but also subsumed by, today's final rule (with respect to the mineral processing industry). It is subsumed because the activity involved, return as a feedstock to a smelter, is a type of reclamation activity (see 50 FR at 639–40), the subject of this final rule.[9] The existing rule also contains a ''no

[6] Put another way, the fact that a mineral processing secondary material is a sludge, rather than a spent material or by-product, does not convey any meaningful information as to the types of risks the material might pose if reclaimed.

[7] EPA does note the potential anomaly that non-mineral processing secondary materials, at least for the moment, will be regulated in some cases stringently than those generated and reclaimed within the mineral processing industry. This could come about because non-mineral processing industry sludges and by-products would still not be solid wastes if reclaimed, and so could be stored in land-based units before reclamation without being solid wastes. EPA has chosen, however, to address the broader issues regarding the regulatory definition of solid waste in a different rulemaking effort, which is proceeding on a different schedule from this rule. EPA believes that if may legitimately proceed one step at a time on these issues, and so is not precluded from making needed changes to the regulatory definition that affect only discrete industry segments, in this case, the mineral processing industry.

[8] This example assumes that legitimate recycling is occurring.

[9] The exclusion for return of secondary materials as feedstock was in fact adopted largely in order to exclude certain direct reclamation practices in the mineral processing industry. 50 FR at 639–40.

land disposal'' condition similar to the conditions in this final rule (although today's rule excludes storage in piles in some circumstances, and so is more flexible than the current 261.2(e)(1)(iii) in this respect).

In light of this overlap, EPA is adding language to 261.2(e)(1)(iii) to indicate that there are special provisions relating to reclamation within the mineral processing industry (namely those adopted in today's final rule), and that these provisions define the scope of the exclusion for mineral processing secondary materials generated and reclaimed within the industry, including those which are returned to a mineral processing operation from which they are generated without first being reclaimed.

Today's rule also does not alter the regulatory status of recyclable materials that are reclaimed to recover economically significant amounts of gold, silver, platinum, iridium, osmium, rhodium, ruthenium, or any combination of them. 40 CFR 266.70. This rule was established to encourage recycling of precious metals. Commenters from the gold industry questioned whether this provision is affected by the amendments relating to mineral processing secondary materials being reclaimed. The answer is that today's rule redefines which secondary materials generated and reclaimed within the mineral processing industry are wastes, and so could exclude certain materials reclaimed within the precious metal industry which are now defined as solid wastes. However, to the extent any precious metal recovery operations remain subject to regulation after today's rule, the tailored regulatory provisions in 266.70 continue to apply.

e. Otherwise Excluded Mineral Processing Units Which Serve as Disposal Units. As the Agency noted in the original proposal, land-based units in the mineral processing industry not only can be related to a recovery process but also can serve as repositories of conventional wastes. 61 FR at 2340, 2342, 2347. That is, unusable solids settle in surface impoundments or are left in piles and in many cases these units become the ultimate repositories for these wastes. *Id.*

Under current rules, when an operating product storage unit that is a tank also contains a hazardous waste, the waste is not subject to regulation until it exits the unit. 40 CFR section 261.4 (c). An example would be a listed distillation column bottom remaining within the distillation column.

Section 261.4(c) does not apply to hazardous wastes which accumulate in land-based units. Thus, if wastes accumulate in piles or impoundments, if those wastes are hazardous (i.e. are listed or exhibit a characteristic of hazardous waste), and the wastes are not legitimately recycled, then the units are Subtitle C regulated units because they are being used to store or dispose of hazardous waste. The Agency is not altering this long-standing principle in the present rule (particularly given the central statutory finding that land-based units, and especially surface impoundments, ''should be the least favored method for managing hazardous wastes'; RCRA section 1002(b)(7)). Consequently, any process impoundment that holds un-recycled hazardous accumulated solids, the impoundment is a regulated unit (i.e. subject to Subtitle C) because it is disposing of a hazardous waste. In addition, the same principle would apply to storage or process piles, which likewise are ineligible for the 261.4(c) exemption.

2. Scope of This Rule

This section of the preamble addresses the issue of which secondary materials come from ''mineral processing'' operations, and so are potentially within the scope of the conditional exclusion for mineral processing wastes being reclaimed within the mineral processing industry sector or in extraction/beneficiation operations. Newly identified wastes from mineral processing also are subject to the LDR prohibitions and treatment standards adopted today, and so this preamble section also clarifies the applicability of these LDR provisions.

a. Mineral Processing Wastes Covered by This Rule. The Agency's 1989 rule (see 54 FR 36592) applied the high volume/low toxicity criteria to determine which primary mineral processing wastes would retain the Bevill exclusion. This rule also clarified the Bevill status of beneficiation operations. Those mineral processing waste streams not meeting the high volume/low toxicity criteria are no longer Bevill exempt wastes and are subject to regulation under Subtitle C (except 20 mineral processing waste streams noted at 40 CFR 261.4). Non-exempt Bevill mineral processing wastes are ''newly identified,'' and are now subject to the Land Disposal Restrictions, when land disposed. Therefore, only ''newly identified'' characteristic hazardous mineral processing wastes are potentially eligible for the conditional exclusion from the definition of solid waste.

EPA established in the 1989 rulemaking the factors it would use to determine whether a waste is generated from extraction/beneficiation versus mineral processing (see 54 FR 36592, 36616–20). The Agency has not and is not reopening this standard. However, EPA prepared and noticed a report—*Identification and Description of Mineral Processing Sectors and Waste Streams*—which tentatively applied this existing test on a waste-by-waste basis to wastes from 41 mineral sectors (62 FR at 2354).

There are two principal issues raised by this report: its legal status and its accuracy. First, the Agency has decided that the *Identification and Description of Mineral Processing Sectors and Waste Streams* report should be a guidance document. Thus, the Report is not a rule, and it, therefore, cannot be invoked as a definitive determination as to whether or not a particular waste is to be classified as being from mineral processing or from extraction/beneficiation. In addition, this report should not be viewed as an exclusive list of mineral processing and associated waste streams: other mineral processing waste streams may exist. Mineral processing facilities are obligated to determine the Bevill status of their wastes by utilizing applicable regulatory provisions, as clarified by the criteria articulated in 1989 in the **Federal Register** preamble cited above. Thus, because the document is guidance, no party could rely upon that document as the definitive basis for a regulatory determination.

The Agency has fully evaluated comments suggesting that the report contains factual inaccuracies, and believes that the Report, as now revised after review of public comments, is accurate and should therefore, provide useful guidance to the public. EPA disagrees with comments contenting that the Agency adopted new criteria in reaching the tentative conclusions set out in the Report. This is not the case—the same general approach used in 1989 was applied in the Report, and would have to be applied in making any actual regulatory determination.

One commenter argued that considering these determinations to be advisory would violate EPA's duty under section 3001(b)(3) of RCRA, as construed by the Court in *EDF V. EPA*, 852 F.2d 1316, 1331 (D.C. CIR 1988) to have made final determinations as to which mining wastes are subject to the Bevill exclusion. According to this commenter, reaching one conclusion at headquarters and a potentially different conclusion at EPA regions or States would undermine the intent of the Court's order in *EDF.* This commenter also asserted that such an approach would effectively allow States to

regulate less stringently than EPA, in violation of sections 3006 and 3009 of RCRA.

EPA believes that these comments are erroneous. EPA fulfilled some time ago its obligations under section 3001(b)(3) generally, and under the *EDF* decision in particular, to define the scope of the Bevill exclusion as it applied to mining wastes. See 51 Fed. Reg. 24496 (July 3, 1986); 54 Fed. Reg. 36592 (Sept. 1, 1989); 55 Fed. Reg. 2322 (Jan. 23, 1990); 56 Fed. Reg. 27300 (June 13, 1991). As discussed in those notices and rules, EPA's regulatory determination did not obviate the need to evaluate whether a particular waste was from mineral processing which, unless one of the 20 identified special mineral processing wastes, would not be exempt from Subtitle C under Bevill. Indeed, the Agency has extensively discussed the distinctions between beneficiation and mineral processing precisely to assist industry, EPA and the States in making such case-specific determinations. See 54 Fed. Reg. 36618–36619 (Sept. 1, 1989). Issuance of the Identification document in the record for this rulemaking is simply intended to aid the industry and regulators in making these decisions.

EPA acknowledges that the potential for inconsistent determinations exist; for this reason, EPA headquarters has assisted regional offices and States in making these determinations over the past decade. Section 3001(b)(3) does not, however, require the Agency to use rulemaking to make each and every decision. Those decisions that are very fact-specific may need to be made on a case-by-case basis using general criteria articulated nationally by EPA. It is precisely because of the fact-specific nature of such inquiries that EPA believes adopting the guidance document as ''binding'' would not be appropriate. Finally, nothing in EPA's approach is inconsistent with the RCRA requirement that authorized State programs be at least equivalent to and no less stringent than the federal program (see RCRA 3006 (b)).

b. Wastewater Treatment Surface Impoundments. EPA indicated at proposal that wastes managed in wastewater treatment surface impoundments would never be eligible for a conditional exclusion from the definition of solid waste. 62 FR at 2348. (A wastewater treatment surface impoundment is one whose ultimate discharge is regulated by the Clean Water Act, and can include zero discharge facilities.) This remains EPA's position, although the issue is no longer directly relevant to the final rule because no impoundments are eligible for exclusion. As the Agency noted at proposal, the essential purpose of these units is waste management rather than production. 62 FR at 2348. See also *AMC II,* where the D.C. Circuit held that wastewater treatment surface impoundments can be classified as waste management units, notwithstanding that all of the entrained solids in the unit were eventually recycled as feedstock at the generating plant. 907 F. 2d at 1186–87.18 [10]

c. Materials Outside the Scope. This rule limits the use of the conditional exclusion to the definition of solid waste to only those secondary mineral processing materials generated within primary mineral processing. The Agency identified over 40 mineral sectors which potentially generate mineral processing secondary materials subject to this rule. The scope of this rule is therefore quite broad. The Agency did not receive comments opposed to the Agency including them in this rule.

This rule also restricts the use of the conditional exclusion from the definition of solid waste to characteristically hazardous mineral processing materials. Thus, no listed hazardous wastes can qualify for the conditional exclusion.

The National Mining Association (NMA) and the Metals Industry Recycling Coalition submitted comments urging the Agency to broaden the scope of the rule to include metal-bearing wastes generated outside of primary mineral processing as well as allowing the reprocessing of listed hazardous wastes. The Agency is not extending the exclusion contained in this rule because the Agency did not propose addressing wastes generated outside of primary mineral processing, since at the time of proposal the Agency indicated that these wastes would be addressed under a different rulemaking. While metal-bearing wastes generated outside of primary mineral processing, and listed hazardous wastes are not within the scope of this rule, the Agency will continue to assess how best to encourage their legitimate recycling.

Commenters indicated they were unsure how this rule would affect the application of 40 CFR 261.2 to secondary materials generated from outside the mineral processing industry sector. As discussed earlier in the preamble, today's rule does not amend § 261.2 for any secondary materials other than those generated within the mineral processing sector. Thus, when fully implemented, a mineral processing facility can use the conditional exclusion to the definition of solid wastes and can utilize § 261.2 to recycle other wastes.

3. Mineral Processing Secondary Material Volumes and Environmental Damages

a. Volume of Secondary Materials and Large Volume Exemption. In the Agency's May 1997 proposal, land placement of secondary mineral processing materials would be prohibited except for materials exceeding the high volume criteria (45,000 tons per facility waste stream per year for solid wastes and one million tons per facility per waste stream per year for liquids). The May 1997 proposal would have allowed high volume secondary materials to be placed in land-based units if those units meet the integrity standards noted in the January proposal and meet other proposed conditions. In today's rule, the Agency is adopting a no land placement condition for mineral processing secondary materials without any volume exemption.

As noted in the May 1997 proposal (see 62 FR at 26049), the Agency reevaluated the volumes of mineral processing secondary materials as a result of comments submitted by public interest groups which asserted that volumes of these materials were considerably less than EPA originally believed (see *Characterization of Mineral Processing Wastes and Materials,* U.S. EPA, 1998). Based on this reevaluation, the Agency finds that mineral processing wastes are not generated in the high volumes that we previously believed to be the case. EPA found that of the 119 hazardous wastes streams it studied, 117 were generated in volumes lower than the proposed high volume cutoff. Further, comments from public interest groups on the Agency's May 1997 proposal indicate that two remaining waste streams that

[10] Waters in these impoundments are often recycled back into processes for their value as water. Recycling of wastewaters may be currently allowed under the effective substitute clause in the regulatory definition of solid waste (see 40 CFR 261.2(e)(1)(ii)), a provision unaffected by today's amendments. However, EPA reads *AMC II* and its regulations to state that impoundments where some wastewaters are returned to a process as an effective substitute for a commercial product, but which also function as wastewater treatment impoundments, would be regulated units (assuming there are hazardous wastes in the unit). This is because the unit would necessarily be functioning at least partially as a disposal unit (since wastewaters are ultimately discharged). In addition, the product storage regulatory exemption at 40 CFR 261.4(c) does not apply to surface impoundments. Notwithstanding industry comments that recycling of wastewater should be encouraged, the Agency notes the stronger policy in RCRA to assure that surface impoundments managing hazardous waste are managed so as to operate protectively. *AMC II,* 907 F.2d at 1187 and sources there cited.

the Agency had classified as high volume may not in fact meet the high volume cutoff. The Agency reassessed how it estimated the volumes of these waste streams and acknowledges that it used very conservative approaches to estimate these volumes. It is, therefore, possible that none of the 119 waste streams studied meet the high volume cutoff. The Agency proposed using the high volume cutoff as an indicator that land storage may be an economic necessity because when volumes are high, alternatives to land placement are costly and not practical. In fact, the Agency now finds that mineral processing secondary materials are generated at volumes where there is no reason that they cannot be managed in non-land based units (except for solids placed on approved pads).

Industry comments maintained that it is impractical to place mineral processing secondary materials in tanks, containers, and buildings. Based on the storage of similar volumes and types of hazardous wastes generated in other industries, the Agency does not agree. The Agency presented its analyses of volumes in its report entitled, *Characterization of Mineral Processing Wastes and Materials*, 1997. This report noted that listed hazardous wastes, such as spent potliners, and electric arc furnace dusts, are generated at volumes which generally exceed that of mineral processing secondary materials yet are stored in tanks and buildings. Further, this report noted that the volumes generated by other industries that use tanks, containers, and buildings to store hazardous wastes are not substantially different than volumes generated by the mineral processing industry.

b. Reliability of Damage and Environmental Release Reports. Industry commenters to the May 12, 1997 proposal sought to refute or minimize the degree of contamination caused by the land storage of mineral processing secondary materials. Despite these objections, the Agency still finds that land-based storage and management practices of mineral processing secondary materials and wastes can or may create or exacerbate soil and ground water contamination.

The Agency issued two separate reports in 1995 and 1997 (Office of Solid Waste, U.S. EPA, *Human Health and Environmental Damages from Mining and Mineral Processing Wastes* (1995), and Office of Solid Waste, U.S. EPA, *Damage Cases and Environmental Releases* (1997)) which presented information on damage cases and environmental releases of mineral processing and mining wastes. The data tended to fall into two general classes: (1) information that illustrates that environmental damages have occurred, and (2) information that discusses the types and magnitude of mineral processing materials that have been released into the environment. In some cases, a combination of feedstock, in-process materials, secondary materials, and wastes contribute to ground water, surface water, or soil contamination. Also, in some cases, contamination occurred through episodic or continuing mismanagement of hazardous and other solid wastes (e.g., commercial chemical spills). Industry commenters objected to the use of these damage cases contending that they reflect historic practices and not current operations.

The Agency disagrees that storage of mineral processing wastes, and in some cases secondary materials, on the ground, which was reflected in these reports, no longer occurs. After careful reevaluation, the Agency finds that the record and, in particular, these reports, clearly indicate that the storage on the ground of mineral processing wastes and secondary materials continues as a management practice and has caused environmental damage or has the potential to do so. These reports identify cases where mineral processing wastes and secondary materials were eroded by rain, were carried by wind, or, in the case of surface impoundments, migrated to contaminate ground water. The vast majority of newly identified mineral processing wastes are liquids and their placement in impoundments presents actual or potential threats to the environment. The Agency concludes that placement of secondary mineral processing materials in impoundments may contribute to the waste management problem.[11]

EPA is also not impressed by comments stating that most of the damage incidents involved wastes no longer utilized within a process, not secondary materials awaiting reclamation, and therefore are irrelevant to this rule. The damage incidents certainly show that when hazardous mining and mineral processing wastes and mineral processing secondary materials are stored in piles or in surface impoundments, hazardous constituent releases and consequent damage has occurred in this industry. Piles and impoundments do not automatically become safer if the materials stored in them are secondary materials awaiting recycling rather than wastes. Rather, the risk comes from the nature of the storage unit.

The Agency compared the toxic and hazardous properties of newly identified mineral processing wastes with a limited number of RCRA listed hazardous wastes in the 1997 technical background document, *Characterization of Mineral Processing Wastes and Materials*. This report was used to support the May 1997 proposal. In order to easily compare the listed waste leachate concentrations with the leachate concentrations of the newly identified mineral processing wastes, a combined mean and maximum range of chromium, cadmium, and lead concentrations for the seven listed wastes were calculated. The mean leachate concentrations for chromium, cadmium, and lead range from 6.03 mg/l to 273.23 mg/l, <0.01 mg/l to 117.5 mg/l, and 1.47 mg/l to 259.83 mg/l, respectively. Likewise, the maximum leachate concentrations for chromium, cadmium, and lead range from 12 mg/l to 4250 mg/l, <0.01 mg/l to 268 mg/l, and 2.10 mg/l to 1550 mg/l, respectively. The report then compared the ranges in constituent concentrations exhibited by the listed wastes and the newly identified mineral processing wastes. The report states that 15 of the 23 mineral processing wastes exhibit leachate concentrations of chromium, cadmium, and lead at levels that are equal to or greater than those levels exhibited by the seven listed wastes. Therefore, the Agency has concluded that some mineral processing secondary materials exhibit hazardous properties similar to listed hazardous wastes, and have the same or greater potential of leaching metals into the environment when they are improperly placed on the land.

In addition, mineral processing secondary materials often contain metal compounds and other constituents which, due to processing steps, become more mobile in the environment (see 54 FR 36614–36619, September 1, 1989). By the very nature of mineral processing, heavy metals are continuously concentrated and waste streams tend to contain higher metal loadings than those found in raw ore. Since the resultant wastes have higher concentrations of metals, they likewise have a higher potential to leach higher concentrations of metals into the environment if they are not adequately stored. Finally, the record also shows that a wide range of mineral processing secondary materials are released into the environment. Such releases do not necessarily mean that environmental

[11] Of course, those mineral processing facilities that have in fact improved their storage practices for mineral processing secondary materials being reclaimed by using tanks, containers, or buildings instead of impoundments to store secondary materials would be essentially unaffected by this rule, since such units would be excluded from regulations.

damage has occurred; however, the Agency believes it must take appropriate steps to minimize such releases to reduce the potential for damage to occur, just as the Agency does with other hazardous wastes. RCRA is a preventive statute, designed to assure safe management of hazardous waste from cradle to grave to prevent the need for remediating releases. Based on the information noted above, the Agency therefore has finalized in today's rule a ''no land placement'' condition for the storage of mineral processing secondary materials.

Comments from public interest groups pointed out that a considerable amount of information shows that releases result from fugitive dusts and that control of dusts was not adequately addressed in the proposals. The Agency agrees that the release of fugitive dust should be addressed and believes that placement in tanks, containers or buildings will adequately address this concern. Mineral processing secondary materials stored in tanks or containers must be stored in a manner which effectively manages fugitive emissions. Moreover, as at proposal, if the site-specific pile approval process is utilized, the possibility of harm via an air exposure must be considered, and, if necessary, controlled. See 62 FR at 2372 (proposed 261.4(a)(15)(iv)(A)(3)).

4. Conditions to the Exclusion

In the January 1996 and May 1997 proposals, the Agency sought comment on how to establish a conditional exclusion to the definition of solid waste which would encourage recycling of mineral processing secondary materials and be protective. In today's rule the Agency is establishing a conditional exclusion to the definition of solid waste. The conditions relate to legitimacy of recycling, land placement, speculative accumulation, and notification, and are discussed below.

a. Legitimacy. It goes virtually without saying that only mineral processing secondary materials which are reclaimed legitimately would be excluded under today's rule. This is because sham recycling is simply waste treatment or disposal conducted under the guise of recycling. *See U.S. v. Self,* 2 F. 3d 1071, 1079 (10th Cir. 1993).

The Agency currently uses a qualitative approach for determining whether a material is being legitimately recycled. Factors the Agency considers typically relevant in making such determinations are found at 50 FR 638 (Jan. 4, 1985); 53 FR 522(Jan. 8, 1988); 56 FR 7145, 7185 (Feb. 21. 1991). Use of these factors to assess whether a particular activity is to be viewed as recycling rather than treatment or disposal was emphatically sustained by the Court in *Marine Shale Processors v. EPA*, 81 F. 3d 1371, 1381–83 (5th Cir. 1996) and *United States v. Marine Shale Processors*, 81 F. 3d 1361, 1366(5th Cir. 1996).

The main issue in this rulemaking was whether the Agency should develop quantified criteria for use in assessing legitimacy of reclamation activities within the mineral processing industry. The Agency proposed quantitative criteria including the potential use of an ore grade cut-off, normal operating range, efficiency standard, and an economic test. 62 FR at 2342–44. In addition to metal values, the Agency also solicited comment on legitimate recycling of acid, water, and other values.

The mineral processing industry noted in their comments that their products must meet international quality standards and they would not risk affecting product quality by introducing materials which would adversely affect that quality, and therefore that legitimacy can be assumed in essentially all cases. They also opposed the proposed quantified criteria.

While the Agency agrees that market forces generally may limit the introduction of materials which could adversely affect product quality, mineral processing facilities by their nature process large volumes of materials, EPA is concerned that small volumes of wastes could be placed into processes without contributing mineral values in order to treat or dispose of them. Obviously, this is not recycling, as noted by the Court in *U.S. v. Marine Shale Processors*, 81 F. 3d at 1366. The Agency, therefore, does not agree that there is no need to apply some type of reasonable legitimacy criteria.

Industry commenters also noted that application of quantitative criteria would be burdensome, are not necessary, and could not be effectively implemented. The Agency agrees that implementation of the proposed quantitative tests would have required significant testing of materials (and resultant costs) and that due to uncertainty in evaluating test results, companies may decide not to recycle any materials to protect the Bevill status of their resultant wastes. Application of an ore grade cutoff criteria could restrict the gold industry's ability to recover gold values from secondary materials that contain gold at levels below those found in ore. Such recovery could nevertheless be cost effective. Industry commenters stated that the application of a normal operating range test would be difficult to implement since operating parameters at large mineral processing facilities change often related to differences in feed. There also was little support from industry for the proposed efficiency test because such facilities may be recovering a specific metal at one recovery rate while they are recovering other metals at a different rates. Industry commenters also rejected the proposed use of an economic test because recycling need not be profitable to be legitimate. They specifically pointed out the cases where recycling was economical only relative to disposal, and yet, the company was legitimately reusing the recycled materials.

For these reasons the Agency has declined to adopt any of the proposed quantitative tests. In today's rule, the Agency is not adopting quantitative criteria and will continue to use the qualitative approach for evaluating whether an activity is legitimate recycling. In addition, the Agency believes that legitimate recycling may occur for reasons other than to recover metal values— recovery of acids, cyanide, or water, for example. With no quantitative tests for such recycling, the Agency believes the qualitative criteria best cover the broad array of situations being addressed. Situations most likely to be deemed sham recycling would, thus, be those involving low amounts of recoverable material plus the presence of non-contributing hazardous constituents in the waste (particularly hazardous constituents not otherwise present in the normal feedstock of the process). See generally, 53 FR at 522(January 8, 1988).

b. Design and Construction Standards. In the January 1996 proposal, the Agency assumed that land-based storage of mineral processing secondary materials was a necessity within the mineral processing sector, and proposed three different types of conditional mechanisms whereby these land-based units could be deemed ''process units'' that would be excluded from Subtitle C jurisdiction. 62 FR at 2345–48. More specifically, these alternative conditions were an environmental performance standard, a design and operating standard, or an ad hoc, site-specific standard developed by an EPA Region or authorized State. The environmental performance standard would have used a ground water protection standard as a determinant of whether a land-based unit was involved in discard. If ground water monitoring determined that there was an exceedance of the MCL (background levels if background exceeded the MCL) at a designated point of compliance,

then the unit would be required to implement unit-specific corrective action. 62 FR at 2345–46.

The Agency also proposed, in lieu of compliance with the ground water standard, design and construction standards. EPA proposed that surface impoundments be constructed with a transmissivity equivalent to a 40 mil geomembrane liner placed on top of 12 inches of a material with a 10–5 hydraulic conductivity. Piles could be constructed on concrete, asphalt, or soil any of which would have to have the equivalent transmissivity of three feet of clay with 10–7 cm/sec hydraulic conductivity. *Id.* at 2346.

The final alternative allowed for an authorized State or EPA Region to make a site-specific determination that the unit can be operated in a manner that is protective. The Agency proposed this option to allow for flexibility because there are a range of site-specific characteristics, such as depth to groundwater and rainfall, which can affect the design of a unit and affect the risks posed by such units. *Id.* at 2347.

EPA finds now, however, that the premise of volumetric necessity was mistaken (see the earlier section of this preamble). As such, the Agency is adopting its traditional jurisdictional demarcation point of not allowing exclusions for land-based storage units. As discussed earlier, land-based storage units are so fraught with indicia of discard—including elements of outright disposal via both air and groundwater exposure pathways (borne out by damage cases as well), plus no longer being part of the actual production operation—that EPA views this demarcation as strongly justified once it is clear that there is no necessity to use such units. The sole exception in the final rule which allows for conditional exclusion for a land-based storage unit is for piles resting on pads which are approved by an authorized State or EPA Region, as discussed in the section below.

c. Units Eligible for Conditional Exclusion and Conditions Attached to Such Units. (i) Tanks, Containers and Buildings. Today's rule states that mineral processing secondary materials reclaimed within the industry can be excluded if they are stored in any of the following: tanks, containers, buildings, or piles resting on pads when such piles are evaluated and approved on a site-specific basis by an authorized State or EPA Region. (As noted in the May 12, 1997 proposal, this is conceptually the same as the rule EPA proposed for the oil-bearing secondary materials generated by and recycled within the petroleum industry. See 62 FR at 26048 (May 12, 1997) and 60 FR 57753 (November 20, 1995)). Tanks, containers, building, and approved pads do not have to meet the design and operating standards for units storing RCRA Subtitle C wastes.

EPA also is adopting certain minimal conditions on these units' design to assure basic unit integrity and so assure that tanks, containers, and buildings do not serve as conduits for massive material release (i.e. disposal units). An acceptable tank must be free standing and not be a surface impoundment, and be manufactured of a material suitable for containment of its contents. An acceptable container must be free standing and be manufactured of a material suitable for containment of its contents. An acceptable building must be a man-made structure and have floors constructed from non-earthen materials, have walls, and have a roof suitable for diverting rainwater away from the foundation. A building may also have doors or removable sections to enable trucks or machines access. The Agency's technical report *Non-RCRA Tanks, Containers, and Buildings,* U.S. EPA, 1998, provides examples of acceptable units for the storage of mineral processing secondary materials.

EPA disagrees with comments from public interest groups stating that nothing short of RCRA Subtitle C standards could assure protectiveness and so demonstrate that these non-land-based storage units were not part of the waste management problem. The plenary conditions urged by the public interest group commenters are indeed those necessary for protective management of hazardous wastes, but the Agency's task here is different. It is to delineate discard from non-discard (i.e. wastes from non-wastes), and, as noted at proposal, not only is this a different test than determining protective waste management conditions, but there are jurisdictional constraints on the types of conditions EPA can impose when considering the situation presented here, i.e., secondary materials generated and reclaimed within a single industry sector. 62 FR at 2342. Thus, the conditions EPA is adopting are designed to assure that these units are not essentially sieves functioning as means of disposal.

The Agency discussed its definition of non-RCRA tanks, containers and buildings in its Technical Background Document (See 62 FR at 26050, *Non-RCRA Tanks Containers, and Buildings,* 1997). *Industry* commenters requested clarification on whether their smelter or refiner buildings would meet the definition of ''building'' if tanks, containers or buildings were required. As set out in the final rule, a building is a structure with four walls, a roof, and floor constructed of non-earthen materials. Smelter and refinery buildings are quite large and include floor areas which, in part, use earthen materials. As long as mineral processing secondary materials (i.e. those sludges, by-products, and spent materials which would otherwise be identified as hazardous wastes) are stored in those sections of the smelter and refinery building that do have floors constructed of non-earthen materials, these structures would qualify for the exclusion included in today's rule as non-RCRA buildings.

Industry commenters also noted that the Agency made reference to tanks and containers having to meet applicable industry standards for their construction and operation, such as those established by the American Society of Testing Materials (ASTM) or the American Petroleum Institute (API)(See 62 FR at 26050). They pointed out that API standards deal specifically with tanks, while ASTM standards relate more specifically to testing procedures. The commenters argued that units storing mineral processing secondary materials do not need to comply with these standards to be safe. The Agency agrees that the references to applicable industry standards such as ASTM and API were overly broad and has not included them in today's rule. Industry commenters requested clarification on whether tanks and containers needed covers to meet the condition of ''no land placement.'' The Agency expects that the storage of mineral processing secondary materials will prevent uncontrolled fugitive emissions. Tanks and containers do not need covers as long as the materials stored in them are managed to reduce fugitive emissions. The facility operator will therefore need to determine if covers are needed to effectively control fugitive emissions. For example, tanks and containers placed inside buildings may not need covers.

The gold and copper industries stated that their secondary materials would meet legitimacy conditions and that they do not need to store these materials prior to placement back onto gold heap leaches or copper dump leaches. The final rule indicates that process units, as opposed to storage units, are excluded from RCRA Subtitle C. EPA believes that the heap and dump leach units are process units, notwithstanding the fact that they are land-based. This is because dump and heap leach piles simultaneously produce products and waste. The issue is also academic with respect to these units. This is because

the Agency determined that these units are extraction/beneficiation activities in 1986 and reiterated that position in 1989 (see 51 FR 24496 and 54 FR 36592), and their Bevill regulatory status is unchanged by today's rule. Thus, if the heap leach pile becomes a disposal unit because wastes remain there permanently, those wastes presently have Bevill status. The Agency continues to be concerned that there may be environmental risks related to dump and heap leaching, but has determined that this rule is not the appropriate means to address those concerns.

Industry commenters also raised concern that under the ''no land placement'' option, described in the May 1997 proposal, they would no longer be able to place slags on the ground. This is an incorrect reading of the regulations and the proposals since at 40 CFR 261.4(b)(7), iron and steel, copper, lead, zinc, and elemental phosphorus slags are all classified as Bevill exempt mineral processing wastes and would not be affected by this rule. The management of these slags on the ground can continue as long as they meet other applicable federal and state regulations.

(ii) Solid Mineral Processing Secondary Materials Resting On Pads. As noted, EPA proposed at 61 FR 2346 to allow land-based units which had been approved as protective on a site-specific basis by an authorized State or EPA Region. The Agency is retaining a portion of that proposal in the final rule in order to allow solid mineral processing secondary materials resting on pads to be used for storage of mineral processing secondary materials being reclaimed within the industry. The Agency defines ''solid mineral processing secondary materials'' as those mineral processing secondary materials containing no free liquids. The provision functions effectively as a variance to allow conditionally excluded storage using pads to occur.

Industry comments pointed out that there are materials which can be placed on concrete or asphalt pads in a manner that provides the equivalent protection of a tank, container, or building. The Agency is aware that in the arid Southwest, the copper industry places materials on pads to dry them prior to their reentry into processes. The Agency agrees with industry comments that a degree of flexibility is needed regarding the storage of solid mineral processing secondary materials in this sector, particularly given the number of such storage units presently used in arid conditions, and (to a lesser degree of importance) given the number of existing piles used by this industry which conceivably could be upgraded to operate protectively and for which a more flexible approach could be warranted.[12]

In today's rule EPA is adopting a provision whereby persons storing only solid mineral processing secondary materials (those mineral processing secondary materials containing no free liquids) on pads prior to legitimate reclamation in a mineral processing process may seek a determination from an authorized State or (if the pile is located in an unauthorized State) EPA Region such that the unit is approved as protective and materials stored in the unit are conditionally excluded from the regulatory definition of solid waste provided that the pad is not serving as a mode of discard.

Minimum design criteria for pads are as follows; (1) Pads must be designed of non-earthen materials which are compatible with the chemical nature of the mineral processing secondary material being stored, (2) Pads must be capable of withstanding physical stresses associated with placement and removal, (3) Pads must have run on/runoff controls, (4) Pads must be operated in a manner which controls fugitive dust, and (5) Owner/operators must conduct inspections and maintenance programs to ensure the integrity of the pads.

The decision-maker would evaluate the application for storage on pads against a general environmental performance standard: whether the pad is located, designed, constructed and operated so as to be protective of human health and the environment and is not used for disposal. A broad benchmark of performance would be that the approved pad must afford the same degree of protectiveness as non-RCRA tanks, containers and buildings eligible for exclusion.

The decision-maker would have to consider potential releases via groundwater, surface water, and air exposure pathways. Factors to be considered for assessing the groundwater, surface water, air exposure pathways are:

—The volume and physical and chemical properties of the secondary material, including its potential for migration off the pad;

—The potential for human or environmental exposure to hazardous constituents migrating from the pad via each exposure pathway, and the possibility and extent of harm to human and environmental receptors via each exposure pathway.[13]

Thus, under this regime, a State could approve placement of solid mineral processing secondary materials (those materials containing no free liquids) on a pad where, after consideration of relevant exposure pathways, a determination is made that the mode of storage will not adversely affect human health and the environment, and where the operator has demonstrated compliance with the minimum design and operating criteria. Approval would be more problematic if a pad was located in an area which experiences flooding, or in an area where ground water was close to the surface and used for drinking water purposes.

The Agency is confident that site-specific determinations can be accomplished as part of existing State regulatory programs. The situations eligible for this variance are considerably more circumscribed than at proposal, and the decision criteria consequently more focused, meeting some of the objections in comments from public interest groups on the proposals. Today's rule only allows the placement of mineral processing secondary materials that are physical solids, and the rule also specifies certain minimum conditions such pads must meet to be approved. Further, the rule identifies the factors a State must consider prior to making such determinations. The Agency will review a State's regulatory authorities it intends to use in implementing this determination to assure that an authorized state can effectively implement this element of the rule.

As proposed, EPA is requiring that there be opportunity for public participation in the evaluation and approval process of pads storing solid mineral processing secondary materials. 62 FR at 2366. The Agency believes it is important that those citizens who may be directly affected by these determinations be notified of them and

[12] EPA has not provided for this type of site-specific approval of land-based storage units in other rules providing for conditioned exclusion from the regulatory definition of solid waste. In some cases, this is because management of solids was not at issue (proposed petroleum listing rule and rules on recovered oil), or the industry sector did not use piles for solids management (steel industry coke-byproducts listing rule). As noted in the text above, EPA believes that there are certain factors peculiar to the mineral processing industry that have persuaded EPA to allow for a site-specific authorization process, but this provision should not be considered to be a precedent for any other industry sector.

[13] As proposed, these general decision factors are drawn from the environmental performance standard in the row-revoked 40 CFR 267.10.62 FR at 2347. Commenters noted correctly that Part 267 is no longer codified, so that these requirements should not be placed in regulatory language (or preamble) by means of a cross-reference to the revoked provisions.

participate in the process, and notes further that this requirement is fully consistent with RCRA's strong preference for public participation. See RCRA section 7004(b).

On the other hand, EPA is not adopting any site-specific approval process for storage of mineral processing secondary materials in surface impoundments. The Agency has concluded that storage in impoundments would likely lead to their contributing to the waste management problem. Many damage incidents in this industry involve the use of impoundments (see damage case on phosphorus impoundments in Idaho). Furthermore, the Agency has determined that there are no engineering or economic constraints on requiring liquid mineral processing secondary materials to be placed in tanks.

d. Speculative Accumulation. In this rule, the Agency is establishing a condition that mineral processing secondary materials cannot be accumulated speculatively as defined in 40 CFR 261.1(c)(8). EPA proposed this condition, 61 FR at 2372, and indeed, this condition already applies to every other secondary material being recycled which is excluded from being a solid waste. See, e.g., 261.2 (e). Industry comments noted that the 12-month limit on speculative accumulation was overly restrictive and that many mineral processing secondary materials need to be stored until economic conditions warrant their recycling. The Agency rejects these comments because no data were presented that would indicate that the volumes of materials being generated could not be efficiently recycled within a 12-month period. In the 12 years the speculative accumulation provision has been in effect, the Agency is unaware of other industries suffering economic burdens by complying with the limits placed on speculative accumulation. Nor is EPA aware of any mineral processing facility which has applied, pursuant to the variance provision in 40 CFR 260.30(a) and 260.31(a) (which allow an extension of the 12-month speculative accumulation period), to extend the existing 12-month requirement for currently excluded mineral processing secondary materials (like unlisted sludges and by-products). The Agency infers that the existing 12-month requirement is not imposing any type of significant constraint on this industry.

e. One Time Notification. EPA proposed that mineral processing plants generating mineral processing secondary materials and utilizing the conditional exclusion to the definition of solid waste provide EPA (or an authorized State) with a one-time notification which describes the mineral processing materials to be recycled and the recycling processes being used. (See 61 FR at 2345). The Agency is finalizing this provision in today's rule. It applies to any facility utilizing the conditional exclusion.

Today's rule requires that the one time notification must specify the types and amounts of mineral processing secondary materials to be recycled and the location and type of unit storing mineral processing secondary material. The notice should be submitted to the appropriate EPA regional office or authorized State. An amended notification would not be required unless the facility has significant process changes affecting the generation, location, or recovery of mineral processing secondary materials.

The reason the provision is needed is to assure that the conditioned-exclusion approach in today's rule can be feasibly implemented. To do so, EPA or States must know what secondary materials are being stored, and where storage is occurring, in order to determine whether the other conditions in the rule are being satisfied. As described above, these other conditions are necessary to assure that secondary material storage within the industry does not become part of the waste management problem. In this very real sense, the notification condition is likewise necessary to assure that the storage is not part of the waste management problem, since notification is necessary to successfully implement the other conditions.

Industry comments opposed this condition, not so much on grounds of unreasonable burden, but based on the argument that the Agency lacks legal authority over non-waste activities. Since EPA finds that the notification condition is an integral part of a group of conditions necessary to assure that storage of these hazardous secondary materials does not become part of the waste management problem, EPA has legal authority to adopt it. In addition, the Agency notes that RCRA section 3007(a) provides authority to enter facilities and obtain information needed to assist in the enforcing of provisions of Subtitle C. This provision can reasonably be read to apply to gathering information to determine whether or not a particular hazardous secondary material is a waste. The notification condition obtains this same type of information by regulatory condition. The Agency thus believes that section 3007(a) (implemented here by rule, pursuant to the Agency's general rulemaking authority under RCRA section 2002(a)) likewise provides authority to adopt this condition.

In the January 1996 proposal, the Agency solicited comment on whether a Facility Operating Plan should be required for facilities that generate, store, or process hazardous mineral processing secondary materials. (See 61 FR at 2345) Under this approach, a Facility Operating Plan would include: a spill prevention plan and procedures; types, quantities, and analysis of recycled materials; product specifications; speculative accumulation and storage requirements; closure plan; and record keeping and reporting for off-site shipments. In today's rule, the Agency is not requiring the preparation of such a plan. This requirement is not necessary given the burden of proof under existing 40 CFR section 261.2(f) that a facility must meet to comply with the conditions of legitimacy, containment, and speculative accumulation. The Agency does, however, strongly encourage facilities to develop a plan or at least components of a plan as part of responsible environmental management.

5. Bevill Related Issues

a. Uniquely Associated. Under the Agency's longstanding interpretation of the Act, the Bevill amendment applies to special wastes that are uniquely associated with extraction/beneficiation and certain mineral processing activities. Because the decision whether a particular waste is uniquely associated may determine whether a particular waste is subject to Subtitle C controls, the Agency believed that it was important and useful to receive public input regarding the manner in which EPA and authorized States apply this principle and solicited comment regarding the criterion for determining whether a waste is uniquely associated with mineral operations. The Agency has described non-uniquely associated wastes at 45 FR 76619, November 19, 1980 and 54 FR 36623, September 1, 1989. In the May 1997 proposal, the Agency noted examples of non-uniquely associated wastes, which include spent solvents, pesticide wastes, and discarded commercial chemicals. As stated in the May 1997 proposal, in the Agency's view, these wastes are logically viewed as not being ''from'' extraction, beneficiation, or mineral processing, and, therefore, are not subject to the Bevill exclusion. (See 62 FR 26054–56, May 12, 1997).

In May 1997, the Agency proposed several alternative approaches to determining whether a waste was uniquely associated. One option to determine if a waste is uniquely

associated was the simple application of the high volume threshold used in the Agency's 1989 rulemaking. Under this option, the volume criterion would obviate the need to consider the uniquely associated principle further.

The Agency based this option on the fact that Congress and the courts have established that only large volume special wastes should be eligible for the Bevill exclusion (62 FR 26041, May 12, 1991; *Environmental Defense Fund* v. *EPA*, 852 F.2d 1316 (D.C. Cir 1988), *cert. denied* 489 U.S. 1011, *Solite Corporation* v. *EPA*, 952 F.2d 473, 494–495 (D.C. Cir 1991)). The Agency reasoned that a large volume criterion is simple to apply and is consistent with the broad parameters of Congressional intent. Further, this approach would help prevent additional toxic constituents from being disposed with Bevill wastes, potentially encouraging recycling, and may result in reduction of cleanup costs.

Industry commenters voiced strong opposition to the use of a volume criterion to determine whether a waste was uniquely associated. Commenters stated that the Bevill exclusion was intended to exempt all mining wastes, regardless of their volume or toxicity. As the regulatory history of EPA's implementation of the Bevill exemption makes clear, however, this is not the case. (see 54 FR 36592, September 1, 1989).

Nonetheless, while the Agency has used volume to make certain Bevill determinations, it has not in the past used the high volume criterion to make uniquely associated determinations. The Agency assessed the impact of applying a high volume criteria in making uniquely associated determinations and found that such an application would make virtually all such wastes non-uniquely associated and subject to Subtitle C controls, regardless of the extent to which the waste was, in fact, associated with mining and mineral processing. EPA does not believe that it would be appropriate to ignore altogether the extent to which a particular waste is associated with mining and mineral processing activities that are subject to the Bevill exclusion, since that exclusion on its face applies to wastes *from* those processes. In addition, the Agency believes that a certain degree of flexibility is needed for making uniquely associated determinations due to the complex and varied mineral operations and site-specific factors that must be considered in making these decisions. In today's rule, the Agency is, therefore, not adopting the use of a volume criterion to determine whether a waste is uniquely associated.

The Agency also proposed an option where a waste would be uniquely associated if it came into direct contact with an ore or mineral or wastes from the extraction, beneficiation, or processing of ores and minerals. Several commenters expressed the view that, while contact can be one useful indicator of whether a waste is uniquely associated with mining, such contact should not be required in all cases. These commenters believed that the test should be whether the conduct of mining and mineral processing necessitates the generation of a particular waste; if so, then the waste should be considered uniquely associated. Other commenters believed that the ''contact'' principle was potentially overly broad, since it would have the potential to sweep into Bevill wastes that typically would not be considered uniquely associated. As proposed, however, the contact option would consider only contact that occurred as part of a processing operation.

After consideration of public comments, the Agency has concluded that a strict application of the ''contact'' principle, while appealing because of its simplicity, would not provide the best means of determining whether a waste is uniquely associated with mining or mineral processing. The Agency is concerned that, while contact may be one indicator of when a waste is associated with the mineral recovery process where, for example, the contact with the process imparts chemical characteristics to the waste, EPA agrees with commenters that simple application of the contact principle has the potential to be over-inclusive of wastes that are properly viewed as ''uniquely associated.'' The Agency has not, therefore, adopted that criterion as being determinative of whether a waste is uniquely associated.

The other option in the May 1997 proposal would modify the contact principle to exclude, as non-uniquely associated, wastes that only exhibit the same hazardous characteristic both before and after contact with the Bevill waste, feedstock, or product. This ''modified contact'' approach may reduce the potential for Bevill wastes to be dumping grounds for non-Bevill hazardous wastes. Under this approach, wastes that are inherently hazardous prior to contact with a Bevill waste, and which retain the same hazardous characteristic after contact, would be subject to Subtitle C regulation when discarded.

Commenters pointed out that the Agency had never before proposed to use the hazardous characteristic to determine whether a waste was uniquely associated, nor had the Agency used this criterion in making uniquely associated determinations since 1980. They also pointed out that the Agency had already studied the hazardous characteristics of uniquely associated wastes but nevertheless stated that these wastes should not be subject to RCRA Subtitle C (51 FR 24496).

Some commenters also contended that the real issue is whether the waste is indigenous to the mining and mineral recovery process—i.e., whether it is necessary to generate the waste in order to conduct the process—and that the hazardousness of a material prior to its use in the process is, therefore, irrelevant.

EPA agrees, in part, with these commenters that the characteristics of a material (i.e., whether it is hazardous) prior to use in mineral recovery processes should not be solely determinative of whether the wastes are ''uniquely associated.'' As a general matter, the closer the nexus between a particular waste and the mineral recovery process, the more likely it is ''uniquely associated'' within the meaning of Bevill. The Agency recognizes, however, that one fact that might help evaluate the relationship between a particular waste and the mineral recovery process is the extent to which the properties of a particular waste can be attributed to the process itself. Thus, while the Agency does not believe that hazardousness of a material prior to use in the mineral recovery process should be determinative of its Bevill status after use, the extent to which the material has acquired attributes through its involvement in that process is relevant.

Based on consideration of all the public comments, the Agency believes that it is appropriate to evaluate whether a particular waste is uniquely associated with mining and mineral processing as follows. First, any waste from ancillary operations are not ''uniquely associated'' because they are not properly viewed as being ''from'' mining or mineral processing. In evaluating wastes from non-ancillary operations, one must consider the extent to which the waste originates or derives from processes that serve to remove mineral values from the ground, concentrate or otherwise enhance their characteristics or remove impurities, and the extent to which the mineral recovery process imparts its chemical characteristics to the waste. Under this test, the greater the extent to which the

waste results from the mineral recovery process itself, and the more the process imparts to the waste its chemical characteristics, the more likely the waste is ''uniquely associated.''

The Agency believes that this approach provides a reasonable basis to determine whether a waste is ''uniquely associated.'' The Agency believes that these factors touch on the full range of facts that are likely to be relevant in any particular case. As is evident from the criteria summarized above, judgment must be exercised where the question is whether a waste from a non-ancillary operation is uniquely associated. EPA believes that this is appropriate because of the fact-specific nature of this determination and the myriad circumstances that can arise. However, as noted above, the Agency believes that wastes generated from ancillary operations (such as truck maintenance shops at a mine and not from the mining or mineral recovery process itself), are not uniquely associated. Such circumstances would likely present the most readily identifiable cases of non-uniquely associated wastes.

The approach noted above reflects the longstanding principle, based on the clear language in Section 3001 of RCRA, that uniquely associated wastes must result from mining and mineral processes themselves. This approach also is generally consistent with industry's underlying contention that the uniquely associated concept should exempt wastes that are ''indigenous'' to mining. EPA disagrees, however, with industry's contention that uniquely associated wastes are any wastes that are unavoidably generated by mining operations. For example, arguably, it is unavoidably necessary to conduct maintenance on machinery that supports mining at a site (e.g., used to transport ores and minerals among processes); however, such maintenance is not necessarily part of the mining or mineral recovery process itself. EPA believes that the proper focus should be the extent to which a waste is generated as part of the mining and mineral recovery process, not the extent to which a facility must conduct an activity as part of its operation.

The elements of the ''contact'' options discussed in the preamble to the proposal, as well as regulatory language contained in the May 1997 proposed rule (see proposed 40 CFR 261.4(b)(7) (stating that exempt extraction and beneficiation wastes must ''originate from the extracted ore or mineral'')) may affect uniquely associated determinations. While, as discussed above, the Agency believes that sole reliance on a contact principle would be unjustifiably rigid, consideration of the extent to which the mineral recovery imparts to the waste its chemical characteristics provides a useful means of evaluating whether a waste is uniquely associated. The greater the extent to which the waste acquires its chemical characteristics from the process from the processing of an ore or mineral, the more likely that waste would be uniquely associated with the Bevill process. Conversely, the less a particular waste originated from or acquired its characteristics from such processes, the less likely it is uniquely associated.

Some commenters asserted that the Agency's proposal represented a sharp departure from past Agency practice under the uniquely associated principle and would constitute, in effect, a revision of prior Bevill regulatory determinations. Neither contention is correct. While the Agency has articulated here its approach to the uniquely associated principle in more detail than previously, the Agency believes that the approach is fundamentally the same as how the Agency has applied the uniquely associated principle in the past. Second, the Agency is not, through the uniquely associated principle, seeking to revise past regulatory determinations that exempted extraction and beneficiation wastes and certain mineral processing wastes from Subtitle C regulation. The list of exempt extraction/beneficiation processes and mineral processing wastes in section 261.4(b)(7) is not altered by this approach. Even under these existing regulatory provisions, it was necessary to determine in certain cases whether a particular waste stream was, in fact, ''from'' (i.e., ''uniquely associated'' with) one of the enumerated Bevill processes. EPA's past regulatory determinations did not, therefore, obviate the need for determining the applicability of Bevill to particular waste streams. In this rule, EPA is simply ensuring that the uniquely associated criteria have the benefit of full public notice and comment; we have not, however, altered the scope of prior regulatory determinations through this process.

Industry commenters nonetheless had concerns about certain applications of the uniquely associated principle articulated in the mineral processing identification document contained in the docket at proposal. In particular, commenters expressed concerns that the document concluded that spent kerosene in copper solvent extraction, crud from electrowinning, crucibles and cupels, and acid cleaning solutions from gold heap leaches are not uniquely associated. All of the wastes just noted are generated as a result of beneficiation. It should be noted that all wastes generated after the commencement of mineral processing are mineral processing wastes. As a result of the Agency's 1989 rule (54 FR 2322), all mineral processing wastes, except those noted in 40 CFR 261.4(b)(7), are subject to RCRA Subtitle C, if they exhibit a hazardous characteristic. Therefore, the effect of the uniquely associated principle is of less import than at beneficiation facilities.

The Agency received numerous comments challenging the Agency's position that these wastes were not uniquely associated. Comments from the copper industry noted that slimes/muds, crud, and spent kerosene generated from copper solvent extraction and electrowinning were uniquely associated because these wastes had been determined by the Agency in 1989 (see 54 FR 36592) to be wastes from extraction and beneficiation. Based on these comments, the Agency has reassessed its prior conclusions regarding these wastes and agrees with the copper industry that slimes/muds, crud, and spent kerosene generated from copper solvent extraction and electrowinning are uniquely associated. 40 CFR 261.4 states that wastes from solvent extraction and electrowinning are extraction/beneficiation wastes and are not subject to regulation under Subtitle C. Applying the approach described above, it is clear that solvent extraction and electrowinning are clearly not ancillary activities since their sole purpose is to concentrate copper values out of pregnant leach solution. The ''uniquely associated'' nature of these wastes is also supported by the degree to which the wastes originate and derive from the mineral recovery process. Thus, the Agency's view is that these wastes are ''uniquely associated'' with beneficiation.

Comments received from the gold industry noted that acid wash solutions are generated solely from processes used to concentrate gold values from cyanide leach solutions. Again, the Agency has reassessed its earlier interpretation and now believes that acid wash solutions from gold heap leaching are uniquely associated. The Agency came to this conclusion in light of the non-ancillary nature of the process generating these wastes (carbon columns must be kept ''clean'' for the gold to be effectively recovered), the extent to which the wastes originate and derive from this mineral recovery process, as well as the fact that the process imparts some

chemical characteristics to the waste (i.e., the ore material that is cleaned from the carbon).

Based on the approach articulated above, the Agency now believes that other wastes are best viewed as non-uniquely associated. For example, the Agency believes that lead anodes used in the electrowinning process are not non-uniquely associated wastes. While lead anodes are used in the mineral recovery process and thus could be viewed as uniquely associated based on this consideration in isolation, a countervailing consideration is that the mineral recovery process imparts virtually no characteristics to these materials. Lead anodes are virtually identical both before and after being used in the process. On balance, the Agency concludes that lead anodes are not uniquely associated with mining and mineral processing.

The Agency also reassessed the status of cupels and crucibles and finds that they remain non-uniquely associated wastes. These wastes are the result of laboratory testing. Cupels and crucibles are also used in other industries (e.g., jewelry companies test the precious metal content of metals using cupels). These wastes are from an ancillary operation, laboratory analyses, and are not generated due to the direct recovery of gold and, therefore, fail to meet the Agency's uniquely associated criteria. It should also be noted that the Agency has consistently found that laboratory wastes are generally non-uniquely associated.

As stated previously, the applications of the ''uniquely associated'' principle articulated here reflect the Agency's interpretation of the criteria as applied to those particular wastes based on the best current information available to EPA. Like the positions articulated in the Identification Document, these calls represent the Agency's current best evaluation of whether these wastes are ''uniquely associated,'' based on available information. However, the discussion above and in the Identification Document simply provides guidance on these issues, and therefore, the determinations are not legally binding on decisionmakers, the public, or the courts.

Finally, one commenter argued that the uniquely associated principle as discussed by EPA is an impermissible reading of the Act to the extent it would authorize EPA to consider factors other than high volume/low toxicity in making Bevill determinations. The Agency disagrees with this position. The Court in *EDF II* directed the Agency to apply a high volume/low toxicity criteria to determine if a mineral processing waste would retain the Bevill exclusion. The uniquely associated inquiry is somewhat different. The question here is the threshold issue whether a particular waste is ''from'' extraction, beneficiation or mineral processing in the first place. The Agency does not believe that the decision in *EDF II* spoke to that inquiry. Rather, *EDF II* was concerned solely with the circumstances under which a waste that is ''from'' these processes qualifies for the Bevill exclusion. Stated another way, a waste is only subject to the Bevill exclusion if it is, in fact, ''uniquely associated'' with extraction/beneficiation or one of the 20 exempt mineral processing wastes. Thus, the uniquely associated principle does not expand the scope of the Bevill exemption, and the Agency's approach is, therefore, entirely consistent with the decision in *EDF II.*

b. Addition of Mineral Processing Secondary Materials to Units Processing Bevill Raw Materials. The question addressed in this section is: if a Bevill extraction/beneficiation process uses as feedstock a mineral processing secondary material which otherwise would be a hazardous waste, would the resulting wastes still be considered to be from extraction/beneficiation and hence Bevill exempt?

There are two bases for potential environmental concern prompting this question. The narrower issue is that if otherwise-hazardous wastes are used as partial feedstocks, could they change the resulting wastes' character in a manner such that the existing exclusion should no longer apply, or, put another way, is the Bevill exemption being used to shield disposal of non-exempt hazardous wastes? The broader issue is whether the Bevill amendment, which creates an exemption from rules designed to protect the public and the environment from unsafe hazardous waste disposal practices, should be interpreted any more broadly than necessary given that the effect is to exempt more waste from protective controls.

EPA proposed two different answers to these questions. In the January 1996 proposal, the Agency proposed to apply the same ''significantly affected'' test used in the partially analogous context of a Bevill device which co-processes hazardous waste along with normal raw material feedstock. 61 FR at 2351 and 40 CFR section 266.112. So long as resulting wastes from the extraction/beneficiation process were not ''significantly affected'' by the addition of hazardous secondary materials, resulting wastes would remain exempt. Id. Significantly affected meant either that the resulting wastes reflecting co-processing were statistically different over the non-waste baseline, or that there was an environmentally significant increase in hazardous constituents over the non-waste baseline. Id.

The May 1997 proposal would have gone further and interpreted the Bevill amendment narrowly (a common rule of construction when construing exceptions to plenary protective regulatory schemes to apply only to situations when extraction/beneficiation raw material feedstocks are utilized) to apply only to situations when extraction/beneficiation raw material feedstocks are utilized (see 62 FR at 26052).

After reviewing the public comments, the Agency has decided not to adopt either of these alternatives. As explained below, EPA ultimately has decided that the likely result of either proposal would be unwarranted disruption to legitimate (and desirable) recovery practices within the industry. Nonetheless, as discussed in the final subsection of this part of the preamble, the Agency retains concerns that the Bevill amendment not be used as a means of shielding disposal of non-Bevill hazardous wastes, and therefore cautions that the Agency intends to scrutinize especially carefully claims of legitimate recycling when hazardous secondary materials are co-processed in extraction/beneficiation operations.

(i) Should the Bevill amendment apply only when virgin materials are processed in extraction/beneficiation operations? In the Agency's May 1997 proposal, EPA sought comment on whether a narrow reading of the Bevill exclusion should be implemented which would limit the availability of the Bevill exemption to wastes generated exclusively from the use of Bevill raw materials, namely ores and minerals. Under this approach only virgin ores used as a feedstock to a beneficiation operation and only concentrates derived from beneficiation and then used as a feedstock to mineral processing would be eligible for the Bevill exclusion. If any alternative materials were used as feedstocks, the resulting waste would not be eligible for the Bevill exclusion. 62 FR at 26052.

In today's rule, the Agency is declining to pursue this option. Industry comments were uniformly opposed. Industry noted that since 1989, the Agency has established a clear use of the 50 percent rule and was well aware that the co-processing of a range of materials was occurring at both extraction/beneficiation and mineral processing facilities when it finalized its

1989 rulemaking (see 54 FR 33620, September 1, 1989). Industry further pointed out that in the 1989 rulemaking the Agency found that 20 mineral processing wastes (see 40 CFR 261.4(b)(7)) would retain their Bevill exempt status even though co-processing was occurring. Industry also noted that the Agency had not presented any data to confirm that the co-processing of virgin and non-virgin materials would actually increase risks to the environment. Public interest groups on the other hand indicated that the proposed option more closely follows the intent of Congress to limit the Bevill exemption to high volume, low toxicity wastes.

The Agency has reviewed the data on co-processing of non-virgin and virgin material and finds that it did evaluate co-processing issues in its 1990 Report to Congress on Wastes from Mineral Processing (EPA Office of Solid Waste, July 31, 1990). This review, as it relates to the 20 mineral processing waste streams that are still exempt, found that co-processing had not significantly changed the hazardous properties of the resultant wastes.

The Agency noted in its proposal that it was unaware of the extent of co-processing at extraction/beneficiation facilities, particularly after 1985. Industry comments noted that background reports to the Agency's 1985 ''Report to Congress on Extraction and Beneficiation Wastes'' (EPA Office of Solid Waste, December 31, 1985) discussed this co-processing issue. Agency review of these documents indicates that while some references to feedstocks are discussed, the Agency was not aware of the extent of this practice until it began to restudy mining and mineral waste management practices in 1989 and initiated a series of visits to mines and mineral processing facilities in 1991–92.

Industry also submitted comments indicating that implementing this option would have significant adverse impacts on the mining and mineral processing industries. The Agency assessed industry comments and conducted its own economic analysis. The Agency found that implementation of this option may reduce current recycling in the copper and lead sectors, and could cause potentially serious economic disruption to industry. (See EPA's Regulatory Risk Impact Analyses.) Both the gold and copper sectors pointed out that they routinely reintroduce mineral-bearing streams from their processing activities into their beneficiation plants to further recover metal values. Such practices would diminish if this option were implemented, since affected extraction/beneficiation operations would not recycle secondary materials if the result is to lose Bevill status of the resulting wastes. It makes little sense for the Agency to implement a program which may reduce recycling where its knowledge of the environmental benefit of the approach is limited.

(ii) Significantly Affected. Under the Agency's January 1996 proposal, mineral processing secondary materials could be introduced into beneficiation units generating Bevill-exempt wastes (without affecting the wastes' Bevill status) if they were legitimately recycled, secondary materials comprised less than 50% of the total feed to the unit, and the resulting wastes were not ''significantly affected'' by the recycling practice.

EPA has decided to adopt the proposed approach except the Agency has decided not to adopt the proposed ''significantly affected'' test in today's final rule. It should be pointed out that small volumes of mineral processing secondary materials likely to be recycled at beneficiation facilities would be processed along with enormous quantities of raw ore. Therefore, the probability that the introduction of such materials would affect the characteristic of the resultant wastes is very low.

Given the likelihood of minimal environmental effect, the Agency must therefore judge whether the benefits of encouraging recycling these materials outweigh the potential additive risks that, however unlikely, could potentially occur in unusual cases. The Agency has decided that, from both an implementation and an overall environmental perspective, not requiring a ''significantly affected'' evaluation makes sense. While it is possible that adoption of a ''significantly affected'' test might catch the unusual circumstance where addition of secondary materials substantially changes the characteristics of the resultant wastes, imposing such a requirement could potentially have a chilling effect on the amount of secondary material that the industry recycles. This is because industry would not risk imperilling Bevill status, since a consequence could be RCRA permitting and facility-wide corrective action potentially affecting areas of historic contamination. From an environmental perspective, EPA believes that the benefits of recycling such materials are substantial, and far outweigh the largely marginal benefits that could be associated with requiring a ''significantly affected'' analysis on a waste stream by waste stream basis.

EPA originally viewed the situation presented here as analogous to when hazardous wastes are co-processed in Bevill units, and so proposed the identical test for resulting residues. 61 FR at 2351. On reflection, there are important distinctions between the two fact patterns. EPA applies the ''significantly affected'' tests when what are admittedly hazardous wastes are co-processed. The usual case is when a hazardous waste fuel is burned in a Bevill unit (like a cement kiln) which also processes normal raw materials. The hazardous wastes can contribute more and different hazardous constituents not normally found in the raw materials. In the extraction/beneficiation example, however, the mineral processing secondary materials are being used as feedstock precisely because those materials share attributes found in raw materials (i.e., recoverable amounts of metals). Because the rule limits co-processing to mineral processing secondary materials, such materials would typically be similar in nature to the raw materials being processed, making it far less likely that co-processing would significantly alter the attributes of resulting wastes. In addition, unlike the burning in furnaces example noted above, the mineral processing secondary materials being recycled are not hazardous wastes. Although they are secondary materials, the Agency has decided to exclude them from the regulatory definition of solid waste (assuming legitimate recycling) because the activity resembles normal reclamation practices within the industry. Put another way, since the mineral processing secondary materials are from the same industry sector and are being reclaimed within the same industry, they can be viewed as secondary materials which are not wastes. It is, thus, less appropriate to apply a significantly affected test to these non-waste feedstocks.

EPA also was unable to apply the ''significantly affected'' test in a manner that would focus on those secondary materials that actually could cause significantly increased environmental risks. The proposed test was the Burning in Furnaces (BIF) 2-part test, which would function in a different manner in this rule. Under the BIF rule, the concern was with the use of hazardous wastes from outside industries, and residuals rarely fail the second part of the test, exceeding the hazardous characteristic. Here, we are dealing with materials from within the industry, metal values are reclaimed, and wastes typically exhibit a hazardous characteristic. Since mineral processing

secondary materials often contain other metals in them, the resultant wastes from co-processing may show statistical increases or decreases in the metals content of the resultant wastes. The increases or decreases in metal constituents, however, does not necessarily mean that risk has increased. An increase in one constituent may be offset by a decrease in another constituent or by additional volumes of raw material feedstocks that would be needed to replace the mineral processing secondary materials. The application of the proposed test therefore could not be effectively used to determine if risks would increase if secondary materials are co-processed at beneficiation facilities.

(iii) Conclusion. For these reasons, the Agency has decided to retain as a condition for retaining Bevill status the standard requirement that an extraction/beneficiation unit processes at least 50 percent raw material. 54 FR at 33620 (Sept. 1, 1989); 50 FR at 49190 (Nov. 25, 1985); and 56 FR at 7198 (Feb. 21, 1991) (previous instances where EPA has used this test); 61 FR at 2351 (proposal of that test here). If the 50 percent criterion is met, the resulting waste would still be from extraction/beneficiation and hence exempt. Raw materials can be mineral processing secondary materials and be placed into units generating Bevill-exempt wastes provided that the facility legitimately recycles these materials.

The proviso is important. EPA repeats that the Bevill amendment is not to serve as a means of disposing of non-Bevill hazardous wastes. As explained later in the preamble, if a hazardous waste is mixed with a Bevill waste, the mixing is regulated under RCRA Subtitle C, and the mixed wastes may be Subtitle C hazardous wastes. While the mixture rule does not apply when materials are placed in a beneficiation unit for legitimate recycling, it would apply if a hazardous secondary material is not being recycled legitimately. See *U.S.* v. *Self*, 2 F.3d at 1071, 1079 (10th Cir. 1993)(sham recycling is simply hazardous waste disposal or treatment).

It should also be pointed out that today's rule prohibits the storage on the ground of any characteristically hazardous mineral processing secondary material. Should a beneficiation facility wish to legitimately reclaim such materials, it should be aware that placement of these materials in raw material piles may change the RCRA status of the pile.

c. Bevill Mixture Rule and Disposal. Disposal of waste mixtures is the focus of this section. The Agency promulgated the Bevill mixture rule in 1989 (see 54 FR 36592). That rule was remanded to the Agency in *Solite Corp* v. *EPA*, 952 F.2d 473, 493–94 (D.C. Cir. 1991). EPA reinstated the mixture rule in 1992; however, this reinstatement was found to be procedurally defective in *Mobil Oil* v. *EPA*, 35 F. 3d 579 (D.C. Cir. 1994).

In the January 1996 proposal, the Agency proposed that if any mineral processing hazardous waste, or indeed any hazardous waste, is mixed with and disposed with a Bevill waste, the resulting waste is, under certain circumstances, regulated under RCRA Subtitle C. The Agency further stated that the mixture of Bevill wastes and hazardous wastes would normally be regulated as a form of treatment subject to regulation under Subtitle C. The Agency stated its concern about the potential human health and environmental risks due to increased hazardous constituents resulting from the disposal of mixtures of hazardous waste with Bevill-exempt wastes. The Agency based the proposal on the policy that Bevill wastes not be allowed to serve as an unregulated dumping ground for hazardous wastes. Cf. *Horsehead Resource Development Co.* v. *Browner*, 16 F. 3d at 1258.

The rule being adopted today is a reinstatement of the mixture rule promulgated in 1989. The Agency continues to believe that the approach adopted in 1989 is sound, and properly balances the objectives of the Bevill amendment with those of RCRA as a whole. While commenters criticized EPA on the grounds that the prior mixture rule has twice been struck down by the courts, those decisions did not address the merits of the Bevill mixture rule.

One clarification of statements in the 1996 proposal is in order. The Agency stated that the proposed rule differed from the 1989 Bevill mixture rule in that the earlier rule had exempted mixtures of Bevill wastes and characteristic hazardous wastes from requirements pertaining to treatment. *See* 61 Fed. Reg. 2352. This statement was, however, in error. The Agency stated in the 1989 rulemaking that such mixing would, in fact, constitute treatment of a hazardous waste, and would be subject to the appropriate regulation for treatment storage and disposal of hazardous wastes, including obtaining a permit. 54 Fed. Reg. 36622. Thus, the Agency is not taking a more stringent approach to regulating mixtures than was taken in 1989. As in 1989, moreover, the Agency is not amending in any way the definition of treatment, storage, or disposal of hazardous wastes; nor is the Agency promulgating any specific provisions related to how those definitions apply to mineral processing wastes. The Agency is simply stating that mixtures of Bevill and non-Bevill wastes can, depending upon the particular facts, constitute treatment, storage or disposal under the existing regulatory program.

Industry commenters generally opposed the proposed mixture rule. Several commenters argued that the proposed rule was contrary to the Act because it undermined the protection that the Bevill amendment was intended to provide the industry. These commenters argued that the legislative history indicates Congress intended the Bevill amendment to be read broadly, to incorporate waste products generated in the ''real world,'' and that Congress recognized co-management of wastes practiced by the industry occurred in the ''real world.'' According to these commenters, integrated facilities conducting extraction, beneficiation and processing operations at a single location have historically co-managed wastes from these operations, including certain newly identified mineral processing wastes, and the proposed rule would effectively undermine the protections of the Bevill amendment for these operations. One commenter contended that the mixture rule would subject ''high volume/low hazard'' waste mixtures from the mining and mineral processing industry to Subtitle C regulation without having conducted the special study and regulatory determination process set forth in section 3001 of RCRA. Since such mixtures of wastes are ''high volume/low hazard,'' these commenters argued that section 3001, as construed by the Court in *EDF v. EPA*, 852 F.2d 1316 (D.C. Cir. 1988), mandates exclusion of those wastes from regulation under Subtitle C.

After careful consideration of these comments, EPA has concluded that they misconstrue the scope of the Bevill amendment, and that the proposed approach to Bevill mixtures is a reasonable one. First, the Agency disagrees with these commenters' interpretation of the Bevill amendment as applying to not only to ''special wastes'' themselves, but also to any other hazardous waste that may be co-managed with them. Congress simply provided that ''solid waste from extraction, beneficiation and processing of ores and minerals'' are not subject to Subtitle C. RCRA § 3001(b)(3)(A). Congress did not, as these commenters suggested, apply this exclusion to such wastes ''and other hazardous wastes that may be co-managed'' with them. Rather, Congress endorsed EPA's conclusion that high volume/low toxicity ''special wastes'' deserved special treatment

under the Act by virtue of the difficulties that would be associated with managing these wastes under the Subtitle C program. Moreover, EPA's decade-long effort to demarcate the line between special wastes and non-excluded wastes was premised on the notion that the line between them is of some significance. If any hazardous waste can come within the scope of the Bevill amendment simply by being mixed with Bevill waste, that line becomes blurred, potentially creating a universe of excluded wastes far beyond that envisioned by Congress when it enacted the Bevill amendment.

The Court in *EDF II* indicated that those mineral processing wastes which did not meet the high volume/low toxicity criteria should be fully subject to Subtitle C. The Agency, in today's rule, has taken prudent steps to encourage the legitimate recycling of hazardous secondary materials. If hazardous mineral processing wastes can not be recycled and must be disposed, the Agency finds nothing in *EDF II* which precludes the Agency from treating these hazardous wastes like any other hazardous wastes. It should also be pointed out that today's rule does not affect the disposal of extraction/beneficiation wastes as long as there is no mixing of non-exempt hazardous wastes with them. EPA believes that this rule is consistent with the scope of the Bevill amendment because it maintains the Bevill exclusion for mixtures that are hazardous due solely to any hazardous constituents of the Bevill waste. The fact that these resulting wastes retain their Bevill status does not mean, however, that the act of storing, treating, or disposing of hazardous wastes with Bevill wastes should be exempted from normal Subtitle C controls.

EPA also disagrees with the notion advanced by some commenters that EPA is required by section 3001 to conduct a study to determine whether mixtures of Bevill and other wastes meet the high volume/low toxicity test and thereby merit being covered by the Bevill amendment. EPA reads section 3001 as mandating that EPA study wastes generated by the mining and mineral processing industry for purposes of determining whether particular waste streams are subject to the Bevill amendment. EPA has done so and determined that mineral processing wastes that do not meet the high volume/low toxicity threshold are not subject to Bevill. EPA's orderly decision-making (see 54 FR 36592 and 55 FR 2322), would be undermined if the Agency were then required to revisit these determinations based upon how facilities happen to manage their wastes.

Stated another way, EPA reasonably based its Bevill regulatory determinations on the volumes of each type of mineral processing waste *generated* within the industry; the Agency does not believe it is reasonable to interpret section 3001 as mandating that EPA disregard the volumes in which wastes are generated and instead base its determinations on the vagaries of how those waste streams may be aggregated through industry's disposal practices. Such a result would be counter to EPA's special waste concept, and ignore the fact that mineral processing wastes streams that are not generated above Bevill's high volume/low toxicity threshold would, in fact, be amenable to management under Subtitle C. Thus, the commenter's interpretation would effectively allow the mining and mineral processing industry to ''bootstrap'' smaller volume wastes into Bevill simply by co-disposing them with Bevill wastes. The Agency and the courts have never interpreted Bevill in such an awkward fashion, and the Agency declines to follow such an approach here.

The Agency does not agree with comments that any change to the Bevill mixture rule would effectively eliminate Bevill for integrated facilities. Today's rule does not change the Bevill status of extraction/beneficiation wastes nor does it alter the Bevill status of 20 mineral processing wastes (see 40 CFR 261.4). Since a large number of ''newly identified'' mineral processing waste streams become subject to the LDR, the Agency took steps to clarify the status of non-exempt ''Bevill'' wastes (i.e. mineral processing wastes not within the scope of the Bevill amendment) in this rulemaking. The Identification report, placed in the docket in January 1996, was developed by the Agency to assist companies in determining if wastes were or were not exempt. The Agency sought comment on the draft Identification document and has finalized this report. This report is, however, guidance. Mineral processing companies now have the ability to identify the status of each waste stream and to cease mixing non-exempt hazardous wastes with exempt waste streams.

Regarding commenters' critique of the concerns expressed by EPA in the proposal justifying the proposed mixture rule, the Agency continues to be concerned about the mixture of hazardous wastes with Bevill exempt wastes for treatment, storage or disposal. The Agency has noted earlier that it is not imposing the significantly affected option because the mixture of hazardous secondary materials with feedstocks does not appear to adversely affect risk. This is so because the mixtures are destined for legitimate recovery of metal, acid, water or cyanide, or other values. Mixtures destined for disposal will not have any of their hazardous constituents removed or other values utilized and may contribute to the waste disposal problem. Nor is there the slightest indication in law that normal Subtitle C rules should not apply to disposal of normal Subtitle C hazardous wastes.

Commenters did point out several errors made by EPA in the proposed rule language. Many commenters noted that there was an inconsistency between the preamble of the January proposal and its proposed regulatory language. The proposed regulatory language inadvertently omitted language in the general mixture rule stating that mixture of a solid waste with a hazardous wasted listed solely because it exhibits a characteristic identified in Part 261 subpart C is a hazardous waste ''unless the resultant mixture no longer exhibits any characteristic of hazardous waste. . . '' 40 C.F.R. 261.3(a)(2)(iii). It was not EPA's intent to propose deleting this language, and it therefore is included in the final rule.

In addition, as pointed out by commenters, the proposed language failed to track the preamble discussion of mixtures of Bevill wastes and characteristic hazardous wastes (as well as wastes that are listed because they exhibit a hazardous characteristic). Under the proposed rule language, mixtures of Bevill wastes and hazardous wastes would be a hazardous waste whenever it exhibited a hazardous waste characteristic, even where that characteristic was imparted to it solely from the Bevill waste. (See proposed section 261.3(i).) As shown by the preamble, this was clearly not EPA's intent, which was to preserve the Bevill exclusion for mixtures that are hazardous solely because of the Bevill component of the mixture. See 61 FR 2352–53.

Conversely, the preamble, although ambiguous in spots on this issue, did say at one point that mixtures of characteristic hazardous waste and Bevill wastes would be considered hazardous waste only if the mixture continued to be hazardous due to characteristics imparted to it by the non-Bevill waste. 61 FR at 2352. If the mixture exhibited a hazardous characteristic due solely to the Bevill waste, the Agency did not intend to designate the mixture as a hazardous waste.

Consistent with that discussion, under today's rule, the Agency has decided that if Subtitle C hazardous waste exhibiting a characteristic is mixed with Bevill-exempt waste exhibiting the same characteristic and the mixture continues to exhibit that common characteristic, then the entire mixture should be considered to be non-exempt hazardous waste. This result is consistent with normal rules on when wastes are hazardous, which state that if a waste exhibits a hazardous waste characteristic, it remains a hazardous waste unless and until it no longer exhibits a characteristic. 40 CFR 261.3(d)(1). In addition, such a principle will make this rule easier to administer (should this situation actually occur), since enforcement officials will not have to parse out which portion of the waste mixture is imparting the characteristic property. Finally, the result is consistent with the overall object of today's rule: not to let Bevill wastes be used as a means of allowing unregulated management of normal Subtitle C hazardous wastes.

Several commenters noted concern that existing exemptions to the Agency's mixture rule, such as that given to totally enclosed treatment facilities and elementary neutralization units, would be eliminated under this rule. The Agency reiterates that this rule does not alter in any way the current Agency mixture rule. The purpose of this rulemaking is to place the mixing of hazardous wastes that may occur at mineral processing plants on the same status as all other hazardous waste management.

(i) Illustrations of how today's rule operates. Although the regulatory parlance for today's rule has always been the ''Bevill mixture rule'', the greatest practical consequence of the rule is probably on the units where mixing occurs. This is because units (i.e. tanks, impoundments, piles, landfills, etc.) where hazardous wastes are placed will (absent some exemption or exclusion other than that provided by the Bevill amendment) be regulated units, i.e. units subject to Subtitle C standards for treatment, storage, and/or disposal. This point is illustrated by the following examples, which also illustrate the effect of the rule on the resulting mixtures:

Example 1. Facility A generates F 001 listed spent solvents which it mixes with a solid waste that has Bevill exempt-status. The mixing occurs in a landfill.

The landfill is a regulated unit because hazardous waste—F 001—is being disposed in it. (Among other things, this means that the F 001 wastes could not be placed in the landfill until the LDR treatment standard is satisfied.) In addition, all of the wastes with which the F 001 wastes are mixed are hazardous wastes carrying the F 001 waste code by application of the mixture rule.

Example 1a. Same facts as in example 1, except that the waste being mixed is F 003 spent solvent, a waste listed only because it exhibits a characteristic of hazardous waste.

The landfill becomes a regulated unit for the same reason as in example 1. (See *Chemical Waste Management v. EPA,* 976 F.2d at 20 n.4 and 24 n. 10 (placement of waste which is hazardous for any amount of time in a unit subject that unit to Subtitle C regulation); 61 FR at 2352 (same). However, the status of the resulting waste mixture is determined by the principles for characteristic hazardous wastes, illustrated below.

Example 2. Facility B generates a characteristic ignitable solvent which it adds to a surface impoundment containing a Bevill-exempt waste that would exhibit the TC for lead. The resulting mixture exhibits TC for lead but is no longer ignitable.

The surface impoundment is a regulated unit, since it is engaged in treatment (elimination of the ignitability characteristic) and disposal (the placement of the ignitable waste). The remaining wastes in the unit retain their Bevill-exempt status because they do not exhibit the characteristic property of the non-Bevill hazardous waste. Thus, if the waste were to be removed from the impoundment and disposed elsewhere, disposal need not occur in a regulated unit.

Example 3. Facility C generates a characteristic hazardous waste exhibiting TC for lead which it mixes in a tank with Bevill-exempt wastes which also would exhibit the TC for lead. The resulting mixture continues to be TC for lead.

The tank is engaged at least in storage of hazardous waste, and possibly treatment (depending on how the D008 hazardous waste is affected by the mixing). If waste is removed from the tank, it remains subject to Subtitle C because it continues to exhibit the characteristic of the non-exempt hazardous waste.

d. Remining. The Agency clarified in its January 1996 proposal that the removal of historically land placed mineral processing wastes for the purposes of mineral recovery would not constitute disposal for purposes of triggering Subtitle C. Moreover, removal of wastes would not render the historic disposal unit subject to RCRA hazardous waste requirements (see 53 FR at 51444, December 21, 1988). The Agency is today again clarifying that removal of waste from a unit does not constitute disposal for the purposes of triggering Subtitle C regulation.

Commenters noted that the proposed mixture rule would in effect eliminate opportunities for remining. The Agency disagrees. As noted previously, the mixture restrictions in today's rule deals primarily with disposal of mixtures. The mixture rule therefore, will not affect the co-processing of historically disposed mineral processing secondary materials with other feedstocks.

6. Responses to Court Remands

a. Applicability of the Toxicity Characteristic Leaching Procedure (TCLP) to Mineral Processing Wastes. In the January 1996 proposal, the Agency proposed to continue using the TCLP (SW–846 Test Method 1311) as the basis for determining whether mineral processing wastes and manufactured gas plant wastes exhibit the toxicity characteristic (TC) of hazardous wastes, and developed a record supporting this position. When the Agency promulgated the TCLP method for testing whether wastes exhibit the toxicity characteristic, the applicability of the TCLP test to mineral processing wastes was challenged in *Edison Electric Institute* v. *EPA,* 2 F.3d 438 (D.C. Cir. 1993) (''*Edison*''). The Court held that the information in the record at the time was insufficient to show a rational relationship between the TCLP and a likely mismanagement scenario for mineral processing wastes.

Under the Court's holding, the Agency must at least provide some factual support that such a mismanagement scenario is plausible (2 F.3d at 446–47). The Agency is addressing this remand in today's final rule because any applicable land disposal restrictions would have little meaning unless the Agency has a basis for determining whether these mineral processing wastes are hazardous, and, therefore, subject to the restrictions.

Under the Court's ruling in *Edison,* the application of the TCLP test to mineral processing wastes is appropriate if the evidence available to EPA shows that disposal of such wastes in municipal solid waste landfills (MSWLF) is a ''plausible'' mismanagement scenario (not necessarily requiring that it be typical or common) 2 F.3d at 446. Moreover, it is sufficient if there is ''evidence or explanation on the record to justify a conclusion that mineral wastes ever come into contact with any form of acidic leaching medium.'' *Id.* at 447.

In considering the plausibility of this mismanagement scenario, the Agency has first carefully evaluated those circumstances that industry has argued make such mismanagement implausible. Industry has argued that co-disposal with municipal solid waste is not plausible because the huge volumes in which the wastes are generated could simply not be handled by an MSWLF. EPA has, however, conducted a comprehensive review of such wastes and concluded that many wastestreams are generated at low volumes. (See

Characterization of Mining and Mineral Processing Wastestreams, USEPA, 1998.) Thus, the volumes in which mineral processing wastes are generated do not render disposal in an MSWLF implausible.

Industry comments also indicated that the location of its facilities were remote and not close to municipal landfills. Based on physical location alone, industry suggested that disposal of their wastes in municipal landfills was very unlikely. This contention is not, however, supported by the facts. The Agency evaluated the location of mineral processing facilities and found that a considerable number of them are located east of the Mississippi River and some are located in or near urban areas. (see *Population Studies of Mines and Mineral Processing Sites,* 1998, U.S. EPA.) This report indicates that there is factual information which rebuts the industry's position that the location of mineral processing facilities is routinely so remote so as to make co-disposal with municipal solid waste implausible. Thus, based on the Agency's population study noted above, the Agency concludes that some mineral processing facilities are in fact located in or near urban areas and their location in such urban areas means that it is plausible that their wastes could be disposed of in urban landfills.

Factual information collected by the Agency (made available for public comment) supports the conclusion that mineral processing wastes may plausibly be disposed of with municipal solid wastes. Industry comments contested EPA's factual basis for the landfill disposal cases found in *Applicability of the Toxicity Characteristic Leaching Procedure to Mineral Processing Waste,* U.S. EPA, 1998. Industry commenters contended that the cases presented by the Agency do not reflect current waste management practices (which primarily involve on-site disposal). Industry commenters also argued that the facts of particular cases did not, in fact, support the conclusion that co-disposal had occurred. EPA has reviewed the information and concluded some of these comments had merit, and EPA has deleted from the final document those cases for which there was not sufficient information to be relied upon by the Agency. However, even after a careful sifting of the case studies, there continues to be evidence to support the conclusion that co-disposal of mineral processing wastes with municipal solid waste is plausible. While most mineral processing wastes are generated in large volumes and disposed on-site as industry contends, the Agency has found that some mineral processing wastes are placed in dumpsters, or similar containers, and shipped off-site for commercial disposal.

These cases include, but are not limited to, co-disposal of mineral processing wastes from the refining of alumina, copper, gold, ferrous metals, lead, silver, and zinc. Such wastes have been disposed in MSWLFs in various states throughout the United States. The Agency also found several cases where manufactured gas plant wastes were disposed in MSWLFs. (See *Applicability of the Toxicity Characteristic Leaching Procedure to Mineral Processing Waste,* U.S. EPA, 1998.)

EPA acknowledges that the information obtained by the Agency does not show that the mismanagement scenario is either typical or common, but such a level of proof is not required. *Edison,* 2 F.3d at 446. It is, moreover, not surprising that the practice does not appear to be widespread because, since 1989, disposal of any non-Bevill hazardous mineral processing wastes in a municipal solid waste landfill has been illegal. Nonetheless, since some mineral processing facilities are located near urban areas and generate low volume wastes, and some of these facilities appear to have, in fact, co-disposed of these wastes in this manner, EPA believes it is reasonable to conclude that application of its mismanagement scenario to mineral processing wastes is reasonable; that is, if these wastes were no longer identified as hazardous by means of the TCLP, then the type of improper disposal which occurred in the past could resume.

Industry commenters further contend that an alternative test, the Synthetic Precipitation Leaching Procedure (SPLP), is more appropriate for mineral processing wastes. The National Mining Association (NMA) noted in its comments that the leach solution used in the SPLP test protocol would more accurately reflect the environmental exposure of mineral processing wastes. The SPLP test uses a leach solution which mimics acid rain, while the TCLP uses a leach solution which mimics acids formed in municipal landfills. The TCLP test therefore uses a leach solution which is more acidic that the SPLP test. However, ''[n]othing in [RCRA] requires EPA to tailor the TCLP to the conditions to which mineral wastes are typically exposed.'' *Edison,* 2 F.3d at 443. If that were the case, it would not have been appropriate for EPA to even have adopted a generic mismanagement scenario as the basis for establishing its approach for testing for the hazardous characteristic. This approach has, however, been upheld as a reasonable exercise of the Agency's discretion. *Id.*

Industry commenters supplied data indicating that the TCLP is more aggressive than the SPLP for most metals and especially lead. Certain states supported use of the test under all or limited circumstances. EPA received very limited data comparing the leach tests. Because these data were extremely limited, the Agency still does not have data broadly comparing TCLP results to SPLP results for a range of mineral processing waste streams. Industry-supplied data appear to indicate that the SPLP test generates results which show lower levels of lead than comparable results using the TCLP. Thus, due to the limited amount of data, the Agency is unable to determine if the SPLP would routinely show lower levels of lead, or how the two tests compare when analyzing other metals or whether such lower levels would, in fact, better reflect actual field conditions than would the TCLP. At bottom, the fundamental issue is not whether one test is more conservative than the other. Rather, the issue is whether it is plausible that mineral processing wastes may be disposed of in environments reflected by the conditions mimicked in the TCLP.

Aside from the plausibility of the Agency's mismanagement scenario, application of the TCLP to mineral processing wastes is supported by comments from industry submitted during the rulemaking regarding disposal practices that are taking place or advantageous at integrated mineral processing/beneficiation facilities in the industry. The proposed (and now final) rule regarding mixtures of Bevill wastes with non-Bevill hazardous wastes (including mineral processing hazardous wastes) effectively prohibits such mixing. Some commenters opposed the proposed mixture rule on the grounds that integrated facilities typically co-dispose of hazardous mineral processing wastes (including those exhibiting the TC) with extraction and beneficiation wastes, and desired to continue this practice or to have mixing available as a management option for these mineral processing hazardous wastes. It is well-documented that extraction and beneficiation wastes can often generate highly acidic environments. (See Acid Rock Drainage Prediction, U.S. EPA, 1994) Disposal of mineral processing wastes with such wastes means that the mineral processing wastes would be subject to acidic conditions that, in some cases, may be comparable to the acidic leacheate medium utilized in the TCLP (if not somewhat more aggressive). This

is because water contacting the acidic waste would thereupon become acidic itself (an example being acid mine drainage). EPA's concern is that if the mineral processing wastes are no longer identified as hazardous because a test other than the TCLP is used, then these wastes could be disposed with the acidic extraction/beneficiation wastes and be exposed to metal-mobilizing acidic leaching conditions as water percolates through the mixture. Given the evident economies noted in the public comments in disposing of mineral processing wastes along with extraction/beneficiation wastes, such a scenario is at least plausible. Such a disposal scenario, which industry states is not only plausible, but is typical of some facilities, provides an additional justification for the application of the acidic leachate approach reflected in the TCLP.

EPA recognizes that the TCLP utilizes organic acids, while the disposal scenario discussed above would involve exposure to mineral acids. In part because of this difference, EPA utilized the SPLP in screening low hazard wastes as part of its 1989 Bevill determination. See 54 FR 36592 (Sept 1, 1989). Commenters have pointed to this statement as undercutting any application of TCLP to mineral processing wastes.

EPA made clear in 1989, however, that the TCLP was still the appropriate test for determining whether a particular mineral processing waste is a hazardous waste subject to Subtitle C. Morever, EPA believes that the general statement contained in the 1989 preamble arguably swept too broadly in its conclusions. Notwithstanding that statement, standard chemistry texts establish that certain metals are highly soluble in acidic environments, including inorganic acids. Numerous factors can affect the precise solubility of a particular metal, and it is generally not possible to generalize whether organic or inorganic acids would cause more or less of a particular metal compound to solubilize. Based on generally accepted chemistry principles, however, a highly acidic environment, whether organic or mineral in nature, can be aggressive towards certain metals typically found in mineral processing wastes. Given that acidic leaching media can result when mineral processing wastes are co-disposed with extraction/beneficiation wastes, EPA believes that the acidic leachate procedure utilized in the TCLP can be appropriate for characterizing mineral processing wastes.

EPA also notes a further policy justification in its choice of the TCLP. The final rule seeks to encourage properly conducted recycling of mineral processing secondary materials, and the scheme in the final rule (whereby recovery can occur provided facilities do not utilize land-based storage units) can be implemented at reasonable cost. (See the Regulatory Impact Analysis for the final rule, summarized later in this preamble.) However, the Agency is concerned that if integrated facilities have a lower cost option of simply disposing these mineral processing secondary materials with extraction/beneficiation wastes, facilities will choose this alternative. Thus, not only will the mineral processing wastes be potentially exposed to acidic leaching conditions, but properly conducted metal recovery will be foregone. (See RCRA section 1003 (a) (6) noting the statutory goal to encourage properly conducted recycling of hazardous wastes.)

In addition to questioning the choice of a leaching medium, commenters questioned certain other features of the test, notably a particle size feature which mirrors freeze/thaw cycles, and a dilution/attenuation factor which is premised on human receptors potentially living relatively proximate to the disposal site. These issues are addressed in greater detail in responses to comments and technical background documents. However, the Agency has documented in the record that many mineral processing facilities are located in parts of the country where freeze/thaw cycles which reduce particle size occur, and are also located near populations reflecting the degree of dilution and attenuation used in the model. (See *Population Studies of Mines and Mineral Processing Sites,* 1998, U.S. EPA)

Finally, EPA notes that nothing in the recent decision *Columbia Falls Aluminum Co. v. EPA* (no. 96–1234) (April 3, 1998) is contrary to this determination. *Columbia Falls* does not stand for the proposition that EPA must customize a test for particular wastes to reflect individual or even typical disposal circumstances, a proposition expressly rejected in *Edison,* 2 F. 3d at 445. Rather, *Columbia Falls* approvingly cites *Edison* for the proposition that ''the TCLP must bear some rational relationship to mineral wastes in order for the Agency to justify the application of the toxicity test to those wastes.'' *Columbia Falls,* slip op. at 18; see also *Huls America Inc.* v. *Browner,* 83 F. 3d 445, 454 (*Edison* involved an instance ''where the record was barren of any rational relationship between the methodology used by the EPA to set regulatory levels and the known behavior of the substance to which this methodology was applied''). EPA has rectified the record deficiencies noted in *Edison,* showing how the TCLP ''bears a rational relationship to the reality it purports to represent.'' *Columbia Falls,* slip op. at 18. Today's action is thus consistent with both *Edison* and *Columbia Falls.*

EPA is making the decision to retain the TCLP as the test for identifying mineral processing wastes effective within 90 days, co-extensive with the LDR prohibition effective date. This effective date can be complied with feasibly within 90 days since the TCLP is already the applicable test for mineral processing wastes (since it was remanded, not vacated, by the *Edison* ruling). Thus, the regulated community does not need six months to come into compliance. See RCRA section 3010(b)(1).

b. Remanded Mineral Processing Wastes. In the January 1996 proposal, the Agency proposed to revoke the current hazardous waste listings for five court-remanded smelting wastes. The Agency also proposed not to re-list them as hazardous stating that these wastes would be regulated as hazardous wastes if they exhibit a characteristic of a hazardous waste.

In 1980, the Agency listed as hazardous eight wastes generated by primary metal smelters (45 FR 33066, 33124, 47832–34, (1980)). The Agency listed the wastes pursuant to 40 CFR 261.11(a)(3) because they contained one or more of the hazardous constituents listed in 40 CFR 261, Appendix VIII. The eight wastes are described as follows:

K064—Acid plant blowdown slurry/sludge resulting from the thickening of blowdown slurry from primary copper production.

K065—Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.

K066—Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.

K067—Electrolytic anode slimes/sludges from primary zinc production.

K068—Cadmium plant leach residue (from oxide) from primary zinc production.

K088—Spent potliners from primary aluminum reduction.

K090—Emission control dust or sludge from ferrochromium-silicon production.

K091—Emission control dust or sludge from ferrochromium production.

In October of 1980, in response to Congressional enactment of the Bevill Exclusion, the Agency suspended its listing of the eight wastes (46 FR 4614–15, 27473 October, 1980). In 1985, EPA proposed a new rule that would relist

six of the eight wastes (50 FR 40292, 40295, October 2, 1985). (The Agency chose not to propose to re-list two of the original eight waste streams (electrolytic anode slimes/sludges, K067, and cadmium plant leach residue, K068, from primary zinc production) because it found that industry was routinely recycling these secondary materials in an environmentally sound manner.) However, the Agency withdrew its 1985 proposal on October 9, 1986 (51 FR 36233).

In *Environmental Defense Fund v. EPA,* 852 F.2d 1316 (D.C. Cir. 1988) EPA was ordered to make a final decision regarding whether to re-list the six metal smelting wastes that it had proposed to list in 1985, and to reduce the scope of the Bevill exemption as it applies to mineral processing wastes. The Agency complied with this order when it re-listed the six wastes.

The American Mining Congress (AMC) challenged these listings. In *American Mining Congress v. EPA,* 907 F.2d 1179 (D.C. Cir., 1990) the Court upheld the Agency's decision to re-list waste K088, spent potliners from primary aluminum reduction, but found that the Agency's record for the five remaining waste streams did not adequately address certain issues raised in comments during the rulemaking. Since the Court did not vacate the listings, they technically remain in effect.

In today's rule, the Agency is revoking the five remanded waste listings. The Agency has found that several of these wastes are still generated and in some cases land disposed, but there is a lack of information demonstrating threats to human health or the environment that would justify a listing at this time. The Agency believe that some wastes, specifically copper acid plant blowdown (K064) and surface impoundment solids at primary lead smelters (K065), are inherently hazardous due to the presence of arsenic and lead, respectively. These wastes can be effectively regulated under RCRA Subtitle C if they exhibit a hazardous characteristic.

The Agency received no comments opposing the proposed rule. To summarize, the Agency is revoking the listing for, and is not re-listing: copper acid plant blowdown (K064); surface impoundment solids at primary lead smelters (K065); acid plant blowdown from primary zinc production (K066); emission control dust and sludge from ferrochromium-silicon production (K090); and emission control dust or sludge from ferrochromium production (K091). However, as explained previously, should these wastes exhibit a characteristic of a hazardous waste, they will be subject to hazardous waste regulations, including the hazardous waste mixture rule.

c. Lightweight Aggregate Mineral Processing Wastes. In the January 1996 proposal, the Agency proposed that air pollution control dust and sludge from the production of lightweight aggregate be classified as a mineral processing waste that is no longer eligible for the Bevill exemption. Lightweight aggregate air pollution control (APC) dust and sludge were among the many mineral processing wastes made conditionally exempt from RCRA Subtitle C requirements under the 1980 Bevill Amendment to RCRA. In 1990, following more detailed study of the generation rates for this waste, the Agency determined that it did not qualify for the Bevill exemption (55 FR 2322, 2340, January 23, 1990). In 1991, the D.C. Circuit directed the Agency to reconsider, after providing notice and soliciting comments, whether these wastes qualify for the Bevill exemption. (*Solite Corporation v. EPA,* 952 F.2d at 500 (D.C. Cir. 1991)).

In the January 1996 proposal, the Agency stated that the wastes from lightweight aggregate production do not meet the high volume criterion for excluded mineral processing wastes. For purposes of EPA's 1989 and 1990 rules concerning Bevill eligibility for mineral processing wastes, high volume is defined as greater than 45,000 metric tons per year per facility, for a solid waste, or 1,000,000 metric tons per year per facility, for a liquid waste, averaged across all facilities generating a particular waste.

To determine whether APC dust and sludge from lightweight aggregate production satisfied the high volume criterion, the Agency analyzed data from its 1989 National Survey of Solid Wastes from Mineral Processing Facilities (SWMPF Survey) and data from public comments submitted by affected companies. The Agency finds that the lightweight aggregate wastes do not meet the high volume criterion.

None of the methods used resulted in a volume estimate that is greater than 45,000 metric tons per year per facility, the high volume criterion for mineral processing wastes. SWMPF survey data, which includes Confidential Business Information (CBI) from two facilities have been included in a separate analysis. The results, which remain confidential, are not substantially different from the results presented previously.

Solite acknowledged in comments that data do not support a determination that lightweight aggregate air pollution control (APC) dust and sludge is generated in volumes that meet the high volume cutoff. However, Solite requested that the Agency delay making a final determination on the Bevill status of its wastes due to other Agency rulemaking activities dealing with cement kiln dusts, which Solite contends would be addressing similar issues to those posed by lightweight aggregate air pollution control (APC) dust and sludge.

The Agency is aware that both cement kiln and aggregate kilns may both burn hazardous wastes fuels and that the dusts from air pollution control devices are often blended into final products. Under existing regulations, if these dusts resulting from burning listed hazardous waste fuels are blended into products that are used on the land, the product would be subject to RCRA's ''derived from'' rules which would render the product a hazardous waste. Since both cement and light weight aggregate products are usually placed on the land, the potential impacts on their use could be significant. The Agency noted in its 1993 *Report to Congress on Cement Kiln Dust* (CKD) that it did not have evidence that CKD was materially different when generated from kilns burning hazardous wastes as fuel and those which did not. The Agency does not have similar comparable analysis of light weight aggregate dusts and sludges, and can not at this point in time conclude that there is no difference between dusts and sludges from units burning hazardous waste fuels and those that do not. The Agency wants to encourage the sound recycling of these dusts and requires additional time to assess how to ensure that aggregate and cement kiln dusts are managed to ensure protection of human health and the environment. The Agency is currently developing a regulatory program for the safe management of cement kiln dusts and anticipates issuing a proposed rule in 1998. The Agency further anticipates that it will seek comment on how to best manage both wastes in this proposal and will seek information it needs to make a final determination on the status of lightweight aggregate wastes. The Agency is not finalizing its technical background document, *Lightweight Aggregate Production and Air Pollution Control Wastes* (1995), at this time.

d. Mineral Processing Wastes From the Production of Titanium Tetrachloride. (i) Summary. In 1989, following a study of this waste's circumstances of generation, the Agency determined that titanium tetrachloride waste acid did not qualify for the Bevill exemption because it was a mineral

processing waste, not an extraction/beneficiation waste, and did not meet the high volume/low hazard criteria for determining eligibility for the Bevill exemption. (See 54 FR 36592, September 1, 1989.) One producer of titanium tetrachloride, DuPont, requested a determination that waste from its production process be categorized as beneficiation waste on the ground that, unlike processes used by other manufacturers, their process included a beneficiation step which generated the wastes at issue. However, EPA determined that DuPont's waste acids were mineral processing wastes. DuPont challenged this decision, and the Court remanded EPA's decision for further consideration on the grounds that the Agency's explanation for its decision was unclear. *Solite Corporation* v. *EPA*, 952 F.2d 473,494–95 (D.C. Cir. 1991).

DuPont submitted comments on the January 1996 proposal that contend its processes do not destroy the structure of the mineral as it is placed into its processes. The Agency does not accept this contention, and, as described below, finds that the waste iron chloride acid is a mineral processing wastes.

There are four sequential steps in DuPont's chloride-ilmenite process, the first two of which occur within the same vessel: (1) chlorine gas reacts with iron from the ilmenite ore to form iron chloride gas; (2) chlorine gas reacts with titanium in the ilmenite ore to form titanium tetrachloride gas; (3) the iron chloride is condensed and separated to form a waste iron chloride acid; and finally (4) the titanium tetrachloride is condensed and processed to form titanium oxide pigment, the saleable product. The issue remanded in *Solite* is whether the iron chloride acid waste, which is produced in gaseous form at step (1) but removed from the vessel as a liquid at step (3), is a mineral processing waste that does not qualify for the Bevill exemption, or is a beneficiation waste covered by the Bevill exclusion under 40 CFR 261.4(b)(7).

(ii) Proposal. In the January 1996 proposal, the Agency proposed that iron chloride waste acid from the production of titanium tetrachloride be classified as a mineral processing waste that is not eligible for the Bevill exemption. In the chloride-ilmenite production of titanium tetrachloride, the Agency found that mineral processing began with the chlorination of the iron in the ilmenite ore and the resulting acid is a waste from mineral processing. Specifically, the Agency found that the acid wastes from this process are not physically or chemically similar to the feedstocks entering the operation, which is indicative that mineral processing has occurred.

(iii) Response to Comments. One commenter agreed with EPA's proposed conclusion that Du Pont's process is properly classified as mineral processing because the reaction of ilmenite ore with chlorine gas forms new chemical compounds, namely titanium tetrachloride and ferric or ferrous chloride. The commenter remarked that such a reaction is a chemical processing step that fundamentally alters the make-up of the feedstock ore. The commenter said that EPA correctly drew the analogy between the mineral processing that occurs in the chloride-ilmenite operation and the mineral processing that occurs in other metallurgical operations.

One commenter noted that no beneficiation occurs in the chloride-ilmenite process at all and that the iron chloride waste stream is not eligible for the Bevill exemption. The commenter said that it too produces a waste iron chloride acid in the production of titanium tetrachloride but its waste acid is neutralized in a waste treatment unit. The commenter provided data showing that its treatment of waste iron chloride acid meets all proposed Land Disposal Restrictions (LDR) treatment standards for underlying hazardous characteristics.

DuPont objected to the Agency's proposed classification. DuPont claims that the removal of iron from the ilmenite ore is more appropriately classified as beneficiation. DuPont remarked that the separation of the iron chloride from the titanium ore grains results in a beneficiated ore, similar in nature to commercially available beneficiated ores that EPA has determined are Bevill exempt. The Agency disagrees with this characterization, and concludes that since the ore is chlorinated, that chlorination step changes the physical and chemical structure of ore. The Agency's rationale for this decision is discussed below.

The Agency reiterates its broad standard for making mineral processing determinations described in 54 Fed. Reg. 36592, 36616, September 1, 1989. Specifically, beneficiation operations typically serve to separate and concentrate the mineral values from waste material, remove impurities, or prepare the ore for further refinement. Beneficiation activities do not, however, change the chemical structure of the ore. Mineral processing operations, in contrast, generally follow beneficiation and serve to change the concentrated mineral value into a more useful chemical form and change the chemical composition of the waste. In contrast to beneficiation operations, processing activities often destroy the physical structure of the incoming ore or mineral feedstock such that the materials leaving the operation do not closely resemble those that entered the operation. Typically, beneficiation wastes are earthen in character, whereas mineral processing wastes are derived from melting or other chemical changes.

Today, the Agency again finds that DuPont's chloride-ilmenite operation is mineral processing. In DuPont's process, chlorine gas is reacted with the iron in the ore in the first step to produce a new and significantly different chemical compound than the feedstock ore, namely liquid waste iron chloride acid. The iron is more than simply removed; the solid iron in the ore undergoes a chemical reaction with the chlorine gas to form a new compound that is highly reactive and non-earthen in character, namely iron chloride gas. This reaction is the beginning of a significant change to the physical and chemical structure of the ore. This change is similar to the reaction of chlorine gas with solid titanium to form titanium tetrachloride gas. The Agency finds that the net result of the reaction of chlorine gas with both iron and titanium, which occur in the same vessel, destroys the physical and chemical nature of the ore.

DuPont contends that the formation of iron chloride gas is simply a process to remove an impurity from the ore. DuPont noted in its comments that activities which remove impurities from ores and minerals are classified as beneficiation and all wastes from beneficiation are exempt from regulation under RCRA Subtitle C (see 40 CFR 261.4). DuPont therefore contends that their processes are in fact beneficiation and should not be classified as mineral processing.

As noted earlier, the Agency clarified the definition of beneficiation and mineral processing in its 1989 rulemaking. That rule clearly indicated that beneficiation serves to remove impurities as long as the resultant materials remained earthen in nature and had not undergone a physical/chemical change. The Agency studied the DuPont process numerous times and met with the company several times to assure that the Agency fully understood DuPont process. The Agency concludes that chlorination of the ore causes a significant physical/chemical change to the ore, and therefore the process is more indicative of mineral processing than beneficiation. Further, in the DuPont case, the removal of impurities is taking place simultaneously with

other reactions generating titanium gases. This reaction alone would classify the process as mineral processing since the ore and titanium gas are clearly physically and chemically dissimilar from that point on in the process. The Agency stated in 1989 that once mineral processing began, all wastes generated after that point would be classified as mineral processing wastes, even those wastes which are similar to those generated in beneficiation.

Thus, all wastes associated with the chloride-ilmenite production of titanium tetrachloride are mineral processing wastes. They are neither high volume nor low toxicity and therefore are not eligible for the Bevill exemption.

VII. LDR Treatment Standards for Soil

This section discusses final regulations establishing land disposal treatment standards specific to contaminated soil. Contaminated soil is subject to the land disposal restrictions, generally, when it contains a listed hazardous waste or when it exhibits a characteristic of hazardous waste. (Throughout this discussion, the specific term ''hazardous contaminated soil'' refers to soil which contains a listed hazardous waste or exhibits a characteristic of hazardous waste; the more general term ''contaminated soil'' refers to both hazardous contaminated soil and other soils—such as decharacterized soil—which may be subject to the land disposal restrictions.) Prior to today's rule, contaminated soil subject to LDRs was subject to the same land disposal restriction treatment standards that apply to industrial hazardous waste: soil contaminated by listed hazardous waste was subject to the standards that apply to those listed wastes and soil that exhibited a characteristic of hazardous waste was subject to the same standards that apply to the characteristic waste. Today's final rule establishes a new treatability group—contaminated soils—and establishes land disposal restriction treatment standards specifically tailored to that treatability group. Although EPA believes generators of contaminated soil will typically choose to comply with the new soil treatment standards promulgated today, under today's final rule, they have the option of complying either with the existing treatment standards for industrial hazardous waste (i.e., the universal treatment standards) or the soil treatment standards. This is consistent with the approach the Agency took in promulgating LDR treatment standards for hazardous contaminated debris. 57 FR 37221, August 18, 1992.

EPA first proposed tailored land disposal restriction treatment standards for contaminated soil in September 1993. 59 FR 48122—48131 (September 14, 1993). In the September 1993 proposal, EPA requested comment on three soil treatment standard options. These three options involved various combinations of percent reduction requirements for hazardous constituents (typically ninety percent—90%) and multipliers of the universal treatment standards (typically ten times the UTS—10 x UTS). In response to comment on the September 1993 proposal, EPA deferred a final decision on soil treatment standards to the Agency's broader evaluation of application of RCRA requirements to remediation wastes, the Hazardous Waste Identification Rule for Contaminated Media, or HWIR-Media.

On April 29, 1996, as part of the HWIR-Media proposal, EPA again proposed tailored land disposal restriction treatment standards for contaminated soils. 61 FR at 11804 (April 29, 1996). In the April 29, 1996 proposal, soil-specific treatment standards would have required reduction in concentrations of hazardous constituents by 90% with treatment for any given constituent capped at ten times the universal treatment standard. *Id.* This is commonly referred to as ''90% capped at 10 times UTS.''

In 1995, 1996 and 1997, EPA proposed new land disposal restriction treatment standards for waste identified as hazardous because of metal content and for mineral processing wastes. 60 FR 43654 (August 22, 1995) for metal wastes; 61 FR 2338 (January 25, 1996) for mineral processing wastes; and, 62 FR 26041 (May 12, 1997) supplemental proposal for both types of waste. In these proposals, soil contaminated with metal or mineral processing waste would have been subject to the new treatment standards for those wastes. This was consistent with the way EPA had historically addressed contaminated soil and, at the time, considered proper given that the proposals to establish soil-specific treatment standards were not yet resolved.

EPA did not reopen the issue of whether LDRs apply to contaminated soil or whether it is appropriate to require that contaminated soil achieve the same LDR treatment standards as the contaminating waste (soil contaminated by listed waste) or the characteristic property (soil that exhibits a characteristic of hazardous waste) in the August 22, 1995, January 25, 1996, or May 12, 1997 proposals. Commenters, nonetheless, strongly opposed application of the new LDR treatment standards for metal and mineral processing wastes to soil contaminated with those materials. At about the same time, EPA decided to go forward with the soil-specific LDR treatment standards proposed in April 1996. Therefore, the Agency is promulgating the land disposal restriction treatment standards tailored to contaminated soils proposed on April 29, 1996 (i.e., 90% capped at 10xUTS) today, with the new LDR treatment standards for metal and mineral processing wastes. The soil-specific treatment standards promulgated today may be applied to any contaminated soil that is restricted from land disposal, including but not limited to soil contaminated by metal and mineral processing wastes.

The land disposal restriction treatment standards for contaminated soil promulgated today differ from the standards proposed on April 29, 1996 in three major ways. First, the Agency proposed that the soil treatment standards would be available only for contaminated soil that was managed under an approved cleanup plan (termed a remediation waste management plan, or RMP). In today's final rule, the Agency is making the soil treatment standards available for all contaminated soil that is restricted from land disposal. Second, the Agency proposed that, for soil contaminated by listed hazardous waste, treatment would be required only for the hazardous constituents that originated from the contaminating listed hazardous waste. When the soil treatment standards are used, today's final rule requires all hazardous contaminated soil, including soil contaminated by listed hazardous waste, to be treated for each underlying hazardous constituent reasonably expected to be present when such constituents are initially found at concentrations greater than ten times the universal treatment standard. Third, in response to comments asserting that the proposed regulations governing the applicability of LDRs to contaminated soils were difficult to understand, the Agency has reformatted these regulations into an easier-to-read table. These changes, as well as other significant issues associated with the soil treatment standards and responses to comments, are discussed below.

Today's promulgation of land disposal restriction treatment standards specific to contaminated soil is largely based on the April 29, 1996 proposal (62 FR at 18804–18818). It also relies on the Agency's first effort to establish soil-specific treatment standards, the LDR Phase II proposal (58 FR 48092, September 14, 1993). Today's action

resolves the portions of the April 29, 1996 and September 14, 1993 proposals that address land disposal restriction treatment standards for contaminated soil. However, other elements of the April 29, 1996 proposal remain open and will be acted on in a future rulemaking. Responses to comments submitted on the soil treatment standards proposals are included in the Soil Treatment Standards Response to Comments Background Document, available in the docket for today's action.

A. Application of Land Disposal Restriction Treatment Standards to Contaminated Soil and Justification for Soil Specific LDRs

Prior to today's rule, soil that contained listed hazardous waste or exhibited a characteristic of hazardous waste were prohibited from land disposal unless they had been treated to meet the treatment standards promulgated for pure industrial hazardous waste. This means the same treatment standards which apply to a pure, industrial hazardous waste were also applied to contaminated soil. 61 FR at 18804 (April 29, 1996) and other sources cited therein. In most cases then, contaminated soils were subject to the treatment standards listed in 40 CFR 268.40, and the associated treatment standards in 40 CFR 268.48(a) table Universal Treatment Standards (UTS).[14]

As EPA has discussed many times, the treatment standards developed for pure, industrial hazardous waste may be unachievable in contaminated soil or may be inappropriate for contaminated soil due to particularities associated with the soil matrix and the remediation context under which most contaminated soil is managed, as discussed below. For that reason, EPA is promulgating today's LDR treatment standards specifically tailored to contaminated soil and to the remedial context.

With respect to the soil matrix, the treatment standards developed for pure hazardous waste (i.e., the universal treatment standards) are generally either technically unachievable or technically or environmentally inappropriate. For metal constituents, the UTS may not be achievable in contaminated soil even using model technologies such as stabilization or high temperature metal recovery. Stabilization technologies are sensitive to soil characteristics such as the presence of oxidizing agents and hydrated salts, the distribution of soil particle size and the concentrations of sulfate and chloride compounds. Various combinations of soil characteristics can impair the effectiveness or rate of reaction in stabilization technologies. For example, insoluble materials, such as materials that will pass through a number 200 mesh sieve, can delay setting and curing during stabilization, or small soil particles can coat larger soil particles weakening bonds between particles and cement or other reagents. High temperature metal recovery technologies may not be appropriate for some contaminated soil given the low concentrations of metals that might be present in the soil. In addition, clay and silt content in some soil matrices may add undesired impurities to the metal concentrates or alloys that are formed during high temperature metal recovery.

Although EPA has data showing that some soils can be treated to the existing universal treatment standards for metals using stabilization [15] and high temperature metals recovery, the Agency continues to believe that tailored soil treatment standards are appropriate for metal contaminated soil to ensure that the wide variety of soils can be effectively treated to meet the treatment standards. In addition, the soil treatment standards will have the added environmental benefit of encouraging greater use of innovative soil treatment technologies such as soil or enhanced soil (acid) washing. See, Proposed BDAT Background Document for Hazardous Soils, August 1993; Technical Resource Document: Solidification/Stabilization and its Application to Waste Materials, EPA/530/R–93/012, June 1993; and, Technology Screening Guide for Treatment of CERCLA Soils and Sludges, EPA 540/2–88/004, September 1988.

For soil contaminated with organic constituents, EPA has noted many times that, notwithstanding the fact that such soils can be treated by combustion to meet the universal treatment standards, it is generally unsuitable or impractical from a technical standpoint to combust large volumes of mildly contaminated soil. See, for example, 55 FR at 8760 and 8761 (March 8, 1990) and 61 FR 18806–18808 (April 29, 1996). In addition, the Agency has documented potential difficulties that may arise from the combustion of soil due to soil/contaminant characteristics that affect incineration performance such as the concentrations of volatile metals, the presence of alkali salts, fine particles of soils such as clays and silts, and the ash fusion point of the contaminating waste. For example, operation of an incinerator at or near the waste ash fusion temperature can cause melting and agglomeration of inorganic salts; the loading of clays and silts in some soils may also result in high loadings of particulate matter in flue gases. Proposed BDAT Background Document for Hazardous Soils, August 1993 and Technology Screening Guide for Treatment of CERCLA Soils and Sludges, EPA 540/2–88/004, September 1988.

With respect to the remedial context, EPA, the states, and the regulated and environmental communities have long recognized that application of the LDR treatment standards developed for pure, industrial hazardous waste to contaminated soil can be counterproductive. See, for example, ''Hazardous Waste: Remediation Waste Requirements Can Increase the Time and Cost of Cleanups' U.S. General Accounting Office, GAO/RCED–98–4, October 1997. Application of LDRs developed for pure, industrial hazardous waste to contaminated soil often presents remediation project managers with only two choices: pursue a legal option of capping or treating hazardous contaminated soil in place thereby avoiding a duty to comply with LDRs, or excavate the soil and treat it to the full extent of best demonstrated available technology, usually, for organic constituents, incineration. EPA has found that this situation often creates an incentive to select remedies that minimize application of LDRs (e.g., remedies that involve capping or leaving untreated soil in place) a result obviously not contemplated by Congress in enacting the LDR program.[16] 62 FR at pages 64505–64506 (Dec. 5, 1997) and 61 FR at 18808 (April 29, 1996) and other sources cited therein.

Because of the differences between the remedial context (responding to wastes which have already been released to the environment) and

[14] The exception is when waste contaminating soil is subject to a specified treatment method; in that case, the contaminated soil would also be subject to the specified treatment method.

[15] These soil treatment data have been claimed as confidential business information.

[16] As discussed in the April 29, 1996 proposal, EPA has, in the past, justified the existing treatment standards, in part, because they create an incentive to generate less of the affected waste in the first instance. See, Steel Manufactures Association v. EPA, 27 F.3d 642, 649 (D.C. Cir. 1994). In the remedial context, the waste is already in existence; therefore waste minimization is not an issue. Thus, application of the current LDR treatment standards to remediation waste can have the perverse effect of creating an incentive to avoid ''generating'' waste by leaving it in the ground. The Agency believes that the goals of remediation are better served by more aggresive remedial approaches, such as excavation and management (including some degree of treatment) of remediation wastes, that generally result in more permanent remedies. Such approaches should, therefore, be encouraged.

regulation of wastes generated by on-going industrial process (preventing wastes from being released into the environment in the first instance), EPA has rejected the conclusion that treatment standards for soil must be based upon the performance of the ''best'' demonstrated available treatment technology in the way the Agency has historically interpreted these terms. Instead, the Agency has chosen to develop soil treatment standards that can be achieved using a variety of treatment technologies which achieve substantial reductions in concentration or mobility of hazardous constituents and, because they are generally used to treat contaminated soils in remedial settings, do not present site managers with the type of dilemma described above. As EPA has long maintained, the strong policy considerations that argue for using the traditional BDAT analysis as the basis for LDR treatment standards for hazardous wastes generated by on-going industrial operations do not apply when evaluating BDAT in the remedial context. In the remedial context, for example, waste minimization is not an issue and the additional increment of treatment necessary to achieve traditional BDAT may yield little if any environmental benefit over other treatment options that adequately protect human health and the environment. 54 FR 41568 (October 19, 1989). Indeed there is a legitimate question as to whether a technology whose use results in foregoing other substantial environmental benefits (such as more aggressive, permanent remedies) can be considered a ''best'' technology. *Portland Cement Association* v. *Ruckelshaus*, 486 F. 2d 375, 385–86 at n. 42 (D.C. Cir. 1973); Essex Chemical Corp. v. Ruckelshaus, 486 F. 2d 427, 439 (D.C. Cir. 1973). This issue was discussed fully in the April 29, 1996 proposal and in a number of other EPA documents, see, for example, 54 FR 41568 (October 19, 1989) and 61 FR at 18808 (April 29, 1996) and other sources cited therein.

The soil treatment standards promulgated today will significantly improve management of contaminated soil and remediations that involve contaminated soil. However, the Agency emphasizes that today's rule does not resolve the larger, more fundamental issues associated with application of RCRA Subtitle C to remediation generally. The Agency maintains that additional reform is needed to address, more fundamentally, the application of certain RCRA subtitle C requirements to all remediation wastes, including contaminated soil. The Agency will continue to participate in discussions of potential legislation to promote this additional needed reform. If legislation is not forthcoming, the Agency may reexamine its approach to remediation waste management, including the soil treatment standards.

B. Detailed Analysis of Soil Treatment Standards

All land disposal restriction treatment standards must satisfy the requirements of RCRA section 3004(m) by specifying levels or methods of treatment that ''substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from that waste so that short-term and long-term threats to human health and the environment are minimized.'' As EPA has discussed many times, the RCRA Section 3004(m) requirements may be satisfied by technology-based standards or risk-based standards. This conclusion was upheld in Hazardous Waste Treatment Council v. EPA, 886 F.2d 355, 362–64 (D.C. Cir. 1989), where technology-based LDR treatment standards were upheld as a permissible means of implementing RCRA Section 3004(m) provided they did not require treatment beyond the point at which threats to human health and the environment are minimized. Today's treatment standards for contaminated soils are primarily technology-based; however, a variance from the technology-based standards is allowed when EPA or an authorized state makes a site-specific determination that threats posed by land disposal of any given volume of contaminated soil are minimized at higher concentrations.

1. Technology Basis for Soil Treatment Standards

The land disposal restriction treatment standards for soil require that concentrations of hazardous constituents subject to treatment be reduced by ninety percent (90%) with treatment for any given constituent capped at ten times the universal treatment standard (10 X UTS). In other words, if treatment of a given constituent to meet the 90% reduction standard would reduce constituent concentrations to less than 10 X UTS, treatment to concentrations less than 10 X UTS is not required. This is commonly referred to as ''90% capped by 10xUTS.''

As first discussed in the September 14, 1993 proposal, the Agency has not used the statistical methods historically used in the land disposal restriction program to establish the soil treatment standards. In the past, the Agency has typically evaluated treatability data to identify the ''most difficult to treat'' waste and established treatment standards based on a statistical analysis of data from the best demonstrated available treatment technology for that waste. See, for example, 55 FR 26594 and 26605, June 23, 1989. While the existing regulations allow treatment using any technology that will satisfy the treatment standards, the practical impact of that approach is that treatment using the most aggressive treatment technology available (i.e., for organic constituents, destruction of organic constituents based upon the performance of incineration) is often necessary to achieve the treatment standards.

For contaminated soil, the Agency has chosen to establish technology-based soil treatment standards at levels that are achievable using a variety of common remedial technologies which destroy, remove or immobilize substantial amounts of hazardous constituents. 58 FR 48129 (September 14, 1993). The levels chosen—90% reduction capped at 10 X UTS—are within the zone of reasonable levels the Agency could have selected as treatment standards for contaminated soil.

Soil treatability data from EPA's Soil Treatment Database indicate that the soil treatment standards are achievable and that the Agency has selected a reasonable level of performance for the standard. After screening the Database to eliminate data from tests reflecting poorly designed or operated treatment, tests where EPA believes inappropriate technologies were applied (for example, data from ''immobilization'' of organic constituents), and other inappropriate data, the Agency was left with 2,541 data pairs representing treatment of eighty hazardous constituents including nine BDAT list metals.[17] EPA then analyzed these data to determine if the soil treatment standards could be reliably achieved using demonstrated soil treatment technologies. Based on this analysis, the Agency concluded that the soil treatment standards can be reliably achieved using a variety of available soil treatment technologies. The Agency concluded that the soil treatment standards can be reliably achieved using: biological treatment, chemical extraction, dechlorination, soil washing, stabilization and thermal desorption. Of course, since soil treatment is generally matrix dependent, the exact treatment technology which

[17] A complete discussion of the Agency's method for screening the Soil Treatment Database can be found in the LDR Phase II proposal (58 FR 48129—48131, September 14, 1993) and the Best Demonstrated Available Technology Background Document for Hazardous Soil (August 1993).

might be applied to any given contaminated soil will depend on the specific properties of the soil and the hazardous constituents of concern. Choices about which soil treatment technology to apply should be informed by appropriate use of bench and pilot scale studies and good engineering judgement. EPA acknowledges that the treatment efficiency necessary to achieve the soil treatment standards will depend on, among other things, the initial concentrations of hazardous constituents in any given volume of contaminated soil. Thus, not all soil treatment technologies will be capable of treating every contaminated soil to meet the standards adopted in this rule. However, the Agency finds that the soil treatment standards typically can be achieved by at least one of the demonstrated technologies, even in the case of hard-to-treat hazardous constituents such as dioxins and furans, polychlorinated biphenyls, and polynuclear aromatics.

Furthermore, the Agency has concluded that it is appropriate to express the soil treatment standards as a treatment performance goal capped by specific treatment levels. More specific standards, for example, a single numerical standard for all soil, could be counterproductive—less often achievable—given the varying combinations of hazardous constituents and soil properties that might be encountered in the field. 58 FR 48130 (September 14, 1993). An express objective of this rule is to increase the range of appropriate treatment alternatives available to achieve the LDR treatment standards in soil to increase the likelihood that more remediations will include treatment as a component of the remedy. This objective could be impeded by adopting single numeric values as treatment standards, since that approach would reduce needed flexibility. The resulting soil treatment standards, while still technology-based, thus depart from EPA's past methodology developed for process wastes in that they are not based exclusively on the application of the most aggressive technology to the most difficult to treat waste and are not expressed as a single numeric value.

Like any land disposal restriction treatment standard, the soil treatment standards may be achieved using any treatment method except treatment methods which involve impermissible dilution (e.g., addition of volume without destroying, removing or immobilizing hazardous constituents or transfer of hazardous constituents from soil to another medium such as air). For organic constituents, the soil treatment standards for volatile organic constituents are based on the performance of biotreatment, chemical extraction, dechlorination, thermal desorption or soil vapor extraction. The standards for semivolatile organic constituents are based on the performance of biotreatment, chemical extraction, dechlorination, soil washing, thermal desorption, or soil vapor extraction. The standards for organochlorine pesticides are based on the performance of biotreatment, dechlorination, hydrolysis, or thermal desorption. The standards for phenoxyacetic acid pesticides are based on the performance of dechlorination. The standards for polychlorinated biphenyls are based on the performance of chemical extraction, dechlorination, or thermal desorption. The standards for dioxins and furans are based on the performance of dechlorination or thermal desorption. EPA does not have specific data in the record on treatment of organophosphorous insecticides. Because they are based on a similar chemical structure, these contaminants, however, are likely as difficult to treat as other polar nonhalogenated organic compounds and are expected to respond to treatment in a manner similar to other polar nonhalogenated phenols, phenyl ethers, and cresols. Therefore, EPA believes that organophosphorous insecticides can be treated using the same technologies as would otherwise be used to treat polar nonhalogenated organics, i.e., biotreatment, chemical extraction, or thermal desorption. For all organic constituents the soil treatment standards are also achievable using combustion. EPA notes also that a number of judicial opinions have upheld EPA's extrapolation of achievability results for technology-based treatment standards based on chemical structure and activity similarity, as has been used here. See, e.g., *Chemical Manufacturers Ass'n* v. *EPA*, 870 F. 2d 177, 248 (5th Cir. 1989) and *National Ass'n of Metal Finishers* v. *EPA*, 719 F. 2d 624, 659 (3d Cir. 1983). For metals, the soil treatment standards are based on the performance of stabilization, and for mercury, chemical extraction. Achievability of the soil treatment standards is discussed, in detail, in section VII.B.8 of today's preamble.

a. Measuring Compliance With the Soil Treatment Standards For hazardous constituents which have a treatment standard measured by total waste analysis (i.e. standards for organic constituents and for cyanide), compliance with the 90% reduction standard should generally be measured using total constituent concentrations. For hazardous constituents which have a treatment standard measured based on concentrations in a TCLP extract (i.e., standards for metals and for carbon disulfide, cyclohexanone and methanol), compliance with the 90% reduction standard should generally be measured in leachate using the toxicity characteristic leaching procedure. The exceptions to these rules would be, for example, if soils contaminated with metal constituents were treated using a technology which removed or destroyed, rather than stabilized, metals. In an example like this, compliance with the 90% reduction standards should generally be measured using total constituent concentrations.

EPA takes this opportunity to clarify that when establishing the concentrations of hazardous constituents in any given volume of contaminated soil from which the 90% reduction will be measured, normal soil characterization techniques and procedures for representative sampling should be used. For example, it is not necessary to measure the 90% reduction from the soil sample with the lowest concentrations of hazardous constituents. EPA will publish additional guidance on establishing and validating 90% reduction levels for contaminated soil in the near future.

Today's rule does not change existing policies or guidance on soil sampling or site characterization. Although soil is often characterized using composite sampling, EPA notes that, consistent with the way the Agency measures compliance with other LDR treatment standards, compliance with the soil treatment standards will be measured and enforced using grab samples. This is appropriate because well-designed and well-operated treatment systems should ensure that soil is uniformly treated.

b. Major Comments A number of commenters expressed concern about the achievability of the soil treatment standards and/or the methodology EPA used to develop the soil treatment standards. These concerns are discussed in Section VII.B.8 of today's preamble and in the response to comments document, available in the docket for today's rulemaking.

2. The Soil Treatment Standards Satisfy RCRA Section 3004(m) Requirements

The technology-based ''90% capped by 10 X UTS'' treatment standard for contaminated soil is sufficiently stringent to satisfy the core requirement of RCRA Section 3004(m) that short-term and long-term threats to human health and the environment posed by

land disposal are minimized. Technology-based standards provide an objective measure of assurance that hazardous wastes are substantially treated before they are land disposed, thus eliminating the ''long-term uncertainties associated with land disposal.'' Eliminating these uncertainties was a chief Congressional objective in prohibiting land disposal of untreated hazardous wastes. Hazardous Waste Treatment Council v. EPA, 886 F.2d at 361–64. In addition, the extent of treatment required, 90 % reduction capped at treatment to concentrations within an order of magnitude of the UTS, ''substantially'' reduces mobility or total concentrations of hazardous constituents within the meaning of RCRA Section 3004(m)(1).

EPA has made two changes from proposal which strengthen the soil treatment standards to assure that they minimize threats to human health and the environment. First, the Agency has modified its approach to which hazardous constituents will be subject to treatment. In today's rule, when the soil treatment standards are used, EPA requires treatment for all hazardous constituents reasonably expected to be present in contaminated soil when such constituents are initially found at concentrations greater than ten times the universal treatment standard. This treatment is required both for soil contaminated by listed hazardous waste and soil that exhibits (or exhibited) a characteristic of hazardous waste. Constituents subject to treatment are discussed further in Section VII.B.4 of today's preamble.

To further ensure that contaminated soil treated to comply with the soil treatment standards is safely managed, EPA has included additional restrictions on the use of treated contaminated soil in hazardous waste-derived products that are used in a manner constituting disposal (i.e., when such products will be placed on the land). The restrictions on use of treated contaminated soil in hazardous waste-derived products that are used in a manner constituting disposal are discussed in Section VII.B.5 of today's preamble.

Finally, the Agency reiterates that, in the remediation context, in assessing whether threats posed by land disposal have been minimized, one should appropriately consider the risks posed by leaving previously land disposed waste in place as well as the risks posed by land disposal of waste after it is removed and treated. 62 FR at 64506 (December 5, 1997). For example, if a treatment standard for organic constituents based on performance of incineration typically results in already land disposed materials such as contaminated soils being capped in place rather than more aggressively remediated, threats posed by land disposal of the waste ordinarily would not be minimized. Conversely, a treatment standard that results in substantial treatment followed by secure land disposal can be said to minimize threats, taking into account the totality of threats posed (i.e. including those posed if the soil were left in place untreated). *Id.* The soil treatment standards will ordinarily ensure that contaminated soil is appropriately treated within the meaning of RCRA Section 3004(m), considering both the threats posed by new land disposal of treated soil and the threats posed by on-going land disposal of existing contaminated soil (e.g., if the soil were left in place untreated).

EPA recognizes that some people may be concerned that a situation may arise where the soil treatment standards are at levels that are higher than those that EPA or an authorized state believes should be required for soil cleanup under a cleanup program. The Agency acknowledges that this may occur. The soil treatment standards, like other land disposal restriction treatment standards, are based on the performance of specific treatment technologies. As discussed earlier in today's preamble, technology-based standards have been upheld as a permissible means of implementing RCRA Section 3004(m). Most soil cleanup levels are based not on the performance of specific treatment technologies but on an analysis of risk. For this reason, technology-based treatment standards will sometimes over-and sometimes under-estimate the amount of treatment necessary to achieve site-specific, risk-based goals.

The purpose of the land disposal restriction treatment standards is to ensure that prohibited hazardous wastes are properly pre-treated before disposal (i.e., treated so that short- and long-term threats to human health and the environment posed by land disposal are minimized). As discussed above, the Agency believes the soil treatment standards promulgated today fulfill that mandate for soil that contains prohibited listed hazardous waste or exhibits a characteristic of prohibited hazardous waste. However, technology-based treatment standards are not necessarily appropriate surrogates for site-specific risk-based cleanup levels. In a circumstance where the soil treatment standards result in constituent concentrations that are higher than those determined, on a site-specific basis, to be required for soil cleanup, existing remedial programs such as RCRA Corrective Action, CERCLA and state cleanup programs could be applied to ensure that remedies are adequately protective. These programs already ensure protection of human health and the environment when managing most contaminated soils—i.e., soils that are not subject to the LDRs—and other remediation wastes. Furthermore, as discussed later in today's rule, treated contaminated soil would remain subject to regulation under RCRA Subtitle C unless and until EPA or an authorized state made an affirmative decision that the soil did not contain hazardous waste or, in the case of characteristic soil, no longer exhibited a hazardous characteristic.

3. Variance From the Soil Treatment Standards at Risk-Based Levels

EPA has long indicated that its preference would be to establish a complete set of risk-based land disposal treatment standards at levels that minimize short- and long-term threats to human health and the environment. See, for example, 55 FR at 6641 (Feb. 26, 1990). However, the difficulties involved in establishing risk-based standards on a nationwide basis are formidable due in large part to the wide variety of site-specific physical and chemical compositions encountered in the field and the uncertainties involved in evaluating long-term threats posed by land disposal. *Id.*; 60 FR 66380—66081 (Dec. 21, 1995). For these reasons the Agency has chosen to establish land disposal restriction treatment standards based on the performance of specific treatment technologies. Although technology-based treatment standards are permissible, they may not be established at levels more stringent than those necessary to minimize short and long-term threats to human health and the environment. Hazardous Waste Treatment Council, 886 F. 2d at 362 (land disposal restriction treatment standards may not be established, ''beyond the point at which there is not a ''threat'' to human health or the environment'').

While using risk-based approaches to determine when threats are minimized on a national basis has proven extremely difficult, these difficulties will diminish when evaluating risks posed by a specific contaminated soil in a particular remediation setting since, during remediation, one typically has detailed site-specific information on constituents of concern, potential human and environmental receptors, and potential routes of exposure. For this reason, EPA is establishing a site-specific variance from the technology-based soil treatment standards, which

can be used when treatment to concentrations of hazardous constituents greater (i.e., higher) than those specified in the soil treatment standards minimizes short- and long-term threats to human health and the environment. In this way, on a case-by-case basis, risk-based LDR treatment standards approved through a variance process could supersede the technology-based soil treatment standards. This approach was first discussed in the September 14, 1993 proposal, where EPA proposed that determinations that contaminated soil did not or no longer contained hazardous waste could supersede LDR treatment standards, if the ''contained-in'' level also constituted a ''minimized threat'' level. It was repeated in the April 29, 1996 proposal where the Agency proposed that, in certain circumstances, variances from land disposal restriction treatment standards could be approved in situations where concentrations higher than the treatment standards minimized threats.[18] 58 FR at 48128 (September 14, 1993) and 61 FR at 18811 and 18812 (April 29, 1996).

At this time, EPA is allowing the risk-based variances only for contaminated soils. The Agency believes this limitation is appropriate for a number of reasons. First, contaminated soils are most often generated during agency overseen cleanups, such as CERCLA cleanups, RCRA corrective actions or state overseen cleanups. This type of involvement in cleanups positions EPA and authorized states to appropriately consider site-specific, risk-based issues. Second, during remediation, experts and field personnel typically gather detailed site-specific information on risks posed by specific hazardous constituents or combinations of hazardous constituents, potential direct and indirect exposure routes, risk pathways and human and environmental receptors. Through application of this information, overseeing agencies can eliminate many of the long-term uncertainties associated with land disposal and, therefore, make appropriate risk-based decisions regarding the extent of treatment needed to minimize short- and long-term threats to human health and the environment from any given hazardous constituent or combination of hazardous constituents. EPA and state officials already routinely make these types of decisions when developing site-specific, risk-based cleanup levels and when making decisions about whether any given contaminated medium contains hazardous waste.[19] After experience implementing the site-specific minimize threat variance for contaminated soil, the Agency may consider extending it to other environmental media and remediation wastes.

Some commenters expressed concern that allowing site-specific, risk-based minimize threat determinations would abrogate the Agency's responsibilities under RCRA Section 3004(m). The Agency strongly disagrees. RCRA Section 3004(m) requires EPA to establish ''levels or methods of treatment, if any. * * *.'' In the case of contaminated soil, EPA is establishing those levels today based on the performance of available, appropriate soil treatment technologies. Providing a variance process to modify a level or method of treatment on a case-by-case basis reduces the likelihood that in any particular situation technology-based treatment standards will result in treatment beyond the point at which threats are minimized. The Agency is requiring that minimize threat variance determinations for contaminated soils be evaluated using the existing site-specific variance process set out in 40 CFR 268.44(h). EPA recently added language to this provision to clarify that variances cannot be approved without opportunity for public participation, including notice by appropriate means, opportunity for public comment and adequate explanation of an ultimate determination. 62 FR at 64507 (Dec. 5, 1997).

While not required, EPA anticipates that decisions about site-specific minimize threat decisions variances will often be combined with decisions that soil no longer contains hazardous waste. As discussed later in today's preamble, Agency guidance on ''contained-in'' determinations is essentially the same as the requirements for site-specific, risk-based minimize threat determinations promulgated today. For that reason, EPA believes it will always be appropriate to combine a contained-in determination with a site-specific, risk-based minimize threat variance. In these cases, EPA encourages program implementors and facility owners/operators to include information about the ''contained-in'' decision in the public notice of the site-specific minimize threat variance. In cases where a site-specific minimize threat variance is combined with a decision that a soil no longer contains hazardous waste, once treated to comply with the treatment standard imposed by the variance, the soil would no longer have any obligations under RCRA Subtitle C and could be managed—including land disposed—without further control under RCRA Subtitle C. The contained-in policy is discussed in more detail in Section VII.B.8 and Section VII.E of today's preamble.

EPA reminds program implementors that, consistent with the rest of the land disposal restriction program, site-specific determinations that threats are minimized cannot be based on the potential safety of land disposal units, or engineered structures such as liners, caps, slurry walls or any other practice occurring after land disposal. American Petroleum Inst. v. EPA, 906 F.2d 729, 735–36 (D.C. Cir. 1990) (land treatment cannot be considered in determining whether threats posed by land disposal have been minimized because land treatment is a type of land disposal and section 3004(m) requires that threats be minimized before land disposal occurs); see also S. Rep. No. 284, 98th Cong. 1st sess. at 15, stating that engineered barriers cannot be considered in assessing no-migration variances because ''[a]rtificial barriers do not provide the assurances necessary to meet the standard.'' This means that site-specific minimize threat determinations must be based on the inherent threats any given contaminated soil would pose. The Agency recognizes that this will have the effect of precluding site-specific minimize threat variances for remedies that rely, even in part, on capping, containment or other physical or institutional controls. In

[18] In the April 29, 1996 proposal, the Agency proposed to limit variances based on a site-specific minimize threat determination to contaminated soils where all concentrations of hazardous constituents were below a ''bright line,'' that is, below a certain risk level. The Agency also requested comment on extending site-specific minimize threat variances to other contaminated soils. Based on further consideration and consideration of comments, the Agency is persuaded that a site-specific minimize threat variance should be available to all contaminated soils. The Agency believes this is proper because the outcome of a site-specific, risk-based minimize threat variance—alternative, site-specific LDR treatment standards based on risk—will be the same regardless of the initial concentrations of hazardous constituents. In any case, the Agency is not, at this time, taking action on the portion of the April 29, 1996 proposal that would have established a ''bright line'' to distinguish between higher- and lower-risk media. If, in the future, the Agency takes action to establish a bright line, it will address the relationship of a bright line to site-specific minimize threat variances.

[19] While not forbidden, the Agency believes that site-specific, risk-based minimize threat determinations will rarely be made in the context of an independent or voluntary cleanup action, since, in these types of actions, an overseeing Agency will not, typically, have been involved in the identification exposure pathways and receptors of concern or the calculation of site-specific, risk-based cleanup levels. Of course, generators could apply for a site-specific, risk-based minimize threat variance during an independent or voluntary cleanup and, provided EPA or an authorized state agreed that the proposed alternative treatment standards minimized threats considering appropriate exposure pathways and receptors, a variance could be approved.

addition to being compelled by the statute, the Agency believes this approach is proper, in that it may encourage remedy choices that rely more predominantly on treatment to permanently and significantly reduce the concentrations (or mobility) of hazardous constituents in contaminated soil. The Agency has a strong and longstanding preference for these types of more permanent remedial approaches.

In addition, at a minimum, alternative land disposal restriction treatment standards established through site specific, risk-based minimize threat variances should be within the range of values the Agency generally finds acceptable for risk-based cleanup levels. That is, for carcinogens, alternative treatment standards should ensure constituent concentrations that result in the total excess risk from any medium to an individual exposed over a lifetime generally falling within a range from 10^{-4} to 10^{-6}, using 10^{-6} as a point of departure and with a preference, all things being equal, for achieving the more protective end of the risk range. For non-carcinogenic effects, alternative treatment standards should ensure constituent concentrations that an individual could be exposed to on a daily basis without appreciable risk of deleterious effect during a lifetime; in general, the hazard index should not exceed one (1). Constituent concentrations that achieve these levels should be calculated based on a reasonable maximum exposure scenario—that is, based on an analysis of both the current and reasonably expected future land uses, with exposure parameters chosen based on a reasonable assessment of the maximum exposure that might occur. The Agency believes these represent an appropriate range of minimum values for site-specific, risk-based minimize threat determinations because sites cleaned up to these levels are typically released from regulatory control under the Federal CERCLA program and the RCRA corrective action program. See, for example, the National Contingency Plan (55 FR 8666, March 8, 1990) the 1990 RCRA Corrective Action Subpart S Proposal (55 FR 30798, July 27, 1990), and the 1996 RCRA Corrective Action Subpart S ANPR (61 FR 19432, May 1, 1996). In addition to achieving protection of human health, alternative treatment standards must ensure that environmental receptors are protected and must also ensure that no unacceptable transfer of contamination from one medium to another, for example, from soil to ground water, will occur.[20] Protection of environmental receptors and against cross-media contamination may, in some cases, require more stringent (i.e., lower) alternative treatment standards than would be necessary to protect human health alone. The Agency recognizes that this approach is different from the approach used in developing national risk-based minimize threat levels proposed in the Hazardous Waste Identification Rule (HWIR-Waste). 60 FR 66344 (December 21, 1995). This difference is proper, in that the HWIR-Waste proposal contemplated nationally-applicable risk-based LDR treatment standards and, therefore, had to consider the myriad of potential exposure pathways and receptors which might occur at any given site, nation wide. A site-specific minimize threat determination is informed by actual and reasonable potential exposure pathways and receptors at a specific land disposal location.

Although not expressly limited to land disposal of contaminated soil on-site, EPA anticipates that site-specific minimize threat variances will, most often, be applied to these activities. The basis for developing an alternative land disposal restriction treatment standard during the site-specific minimize threat variance is application of risk information about specific exposure pathways and receptors of concern. To apply such a variance to off-site land disposal, the treatment standard would have to be informed by the exposure pathways and receptors present at the off-site land disposal areas (assuming no physical or engineered structures or other post-land-disposal controls). While such an analysis is allowed, this information is not, to the Agency's knowledge, routinely gathered during site remediation.

Most commenters supported the concept of using a treatment variance to reduce the likelihood that, in any particular case, technology-based soil treatment standards might prompt treatment beyond the point at which threats to human health and the environment are minimized.

One commenter was concerned that establishing a risk-based minimize threat variance without adequate minimum standards would be contrary to law and impossible to oversee. EPA was, in part, persuaded by these comments and has added a requirement that, at a minimum, alternative LDR treatment standards approved through a site-specific minimize threat variance be within the range of acceptable values the Agency typically uses for cleanup decisions, as discussed above. In addition, as discussed above, the Agency has clarified that, unlike some CERCLA or RCRA corrective action remedies, site-specific minimize threat variances may not rely on post-land disposal controls.

4. Constituents Subject to Treatment

For soil contaminated by listed hazardous waste, EPA proposed that treatment would be required for each hazardous constituent originating from the contaminating waste. For soil which exhibits (or exhibited) a characteristic of hazardous waste, EPA proposed that treatment would be required: (1) in the case of TC soil, for the characteristic contaminant; (2) in the case of ignitable, reactive or corrosive soil, for the characteristic property; and, (3) in both cases, for all underlying hazardous constituents. 61 FR at 18809 (April 29, 1996). Under the 1996 proposal, treatment would have been required only when those constituents were initially present at concentrations greater than ten times the universal treatment standard. EPA also requested comment on, among other things, whether, for soil contaminated by listed hazardous waste, treatment should be required for all underlying hazardous constituents present at concentrations above ten times the UTS. Underlying hazardous constituent is defined in 40 CFR 268.2(i) as, ''any constituent listed in 40 CFR 268.48 table UTS, except fluoride, sulfides, vanadium, selenium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standards.''

Many commenters supported the proposed approach. Some commenters, however, expressed concern that, because contaminated soil often contains numerous hazardous constituents from a variety of sources, limiting treatment of soil contaminated by listed hazardous waste to constituents originating from the contaminating waste might result in soil contaminated with listed waste undergoing less treatment than soil which exhibits (or exhibited) a characteristic of hazardous waste. One commenter also asserted that the proposed approach to constituents subject to treatment was, in the case of soil contaminated by listed hazardous waste, inconsistent with the Chemical Waste opinion. On further consideration, EPA was persuaded that it is prudent to apply the logic of the

[20] Unacceptable cross-media transfer would include, for example, transfer of contaminants from soil to air in excess of applicable air emission standards.

Chemical Waste opinion both to soil contaminated by listed hazardous waste and to soils which exhibit a characteristic of hazardous waste.

As the Agency explained in the 1996 proposal, contaminated soils are potentially contaminated with a wider range of hazardous constituents than most pure hazardous wastes generated by on-going industrial processes—in no small part because contaminated soils generally reflect uncontrolled disposal settings. 58 FR at 48124 (September 14, 1993). Since the Chemical Waste opinion addressed a similar situation (certain characteristic hazardous wastes that might contain a variety of hazardous constituents), the Agency is persuaded that it is prudent to apply the logic of the Chemical Waste opinion to contaminated soil and require treatment of all underlying hazardous constituents. See Chemical Waste Management v. US EPA, 976 F.2d at 16–18 (D.C. Cir 1992). Therefore, when the soil treatment standards are used, today's final rule requires that all contaminated soil subject to the LDRs be treated to achieve the soil treatment standards for each underlying hazardous constituent reasonably expected to be present in the soil when such constituents are initially found at concentrations greater than ten times the universal treatment standard. In addition to treatment of all underlying hazardous constituents as discussed above, as proposed, characteristic soil must also be treated, in the case of TC soil, for the TC constituent and, in the case of ignitable, corrosive, or reactive soil, for the characteristic property.

Although, when the soil treatment standards are used, treatment is now required for each underlying hazardous constituent when such constituents are initially found at concentrations greater than ten times the universal treatment standard, it will not be necessary to monitor soil for the entire list of underlying hazardous constituents. Generators of contaminated soil can reasonably apply knowledge of the likely contaminants present and use that knowledge to select appropriate underlying hazardous constituents, or classes of constituents, for monitoring. This is consistent with the approaches EPA typically takes in remedial programs, where it emphasizes that remediation managers should focus investigations on constituents of concern and with regulations that allow generators to rely on knowledge to determine whether any given solid waste is hazardous. *Cf.* 61 FR at 19444 where EPA encouraged remediation managers to ''tailor [facility investigations] to the specific conditions and circumstances at the facility and focus on the units, releases, and exposure pathways of concern.''

For nonanalyzable constituents, EPA is promulgating the approach discussed in both the September 14, 1993 and the April 29, 1996 proposals. In situations where contaminated soil contains both analyzable and nonanalyzable organic constituents, treating the analyzable constituents to meet the soil treatment standards is also reasonably expected to provide adequate treatment of the nonanalyzable constituents. In situations where contaminated soil contains only nonanalyzable constituents (i.e., soil contaminated only by nonanalyzable U or P listed wastes), treatment using the specified method for the appropriate U or P listed waste is required. 61 FR at 18810, April 29, 1996. Most commenters supported this approach.

5. Relationship of Soil Treatment Standards to Naturally Occurring Constituents

In the April 29, 1996 proposal EPA requested comment on whether concentrations of naturally occurring constituents should be evaluated when identifying constituents subject to treatment. Commenters who addressed this issue overwhelmingly recommended that, for naturally occurring constituents, EPA cap LDR treatment requirements for soil at natural background concentrations. After considering these comments, EPA was persuaded that treatment to comply with LDRs should not be required if constituent concentrations fall below naturally occurring background concentrations, provided the soil will continue to be managed on site or in an area with similar natural background concentrations. If soil will be sent for land disposal off-site, compliance with LDRs is required, since the Agency believes that natural background concentrations on-site will not automatically correspond to natural background concentrations at a remote land disposal facility.

The Agency notes that, for purposes of this discussion, natural background concentrations are constituent concentrations that are present in soil which has not been influenced by human activities or releases. Since these constituent concentrations are present absent human influence and EPA has determined that soil (like other environmental media) is not, of itself, a waste but may be regulated as hazardous waste under RCRA only when it contains (or contained) waste, EPA is not convinced the Agency would have the authority to require compliance with LDRs when constituent concentrations fall below background concentrations even if it felt compelled to do so. (Of course, such constituents could be regulated as hazardous constituents under state and Federal cleanup authorities, including RCRA corrective action and other authorities.)

Since natural background concentrations may vary across geographic areas, and to ensure that LDRs will only be capped at background where appropriate, EPA will require that individuals who wish to cap LDR treatment at natural background concentrations apply for and receive a treatment variance. EPA will presume that when LDRs would require treatment to concentrations that are less than natural background, such a variance will be appropriate, based on the finding that it is inappropriate, for contaminated soil, to require treatment to concentrations less than natural background concentrations. This issue has been clarified in today's final regulations, see 40 CFR 268.44(h)(4).

6. Restrictions on Use of Treated Hazardous Contaminated Soil in Products Used in a Manner Constituting Disposal

Although, as discussed earlier in today's preamble, EPA believes the soil treatment standards satisfy the requirements of RCRA Section 3004(m), EPA has determined that additional restrictions are necessary for hazardous contaminated soils that are used to produce products which are, subsequently, used in a manner constituting disposal (i.e., used to produce products which are placed in or on the land). Under current regulations, hazardous waste-derived products that are used in a manner constituting disposal must, among other things, comply with the applicable land disposal restriction treatment standards in 40 CFR part 268.40, that is, the Universal Treatment Standards. See 40 CFR 266.23(a). EPA has concluded that hazardous contaminated soil used to produce products which are, subsequently, used in a manner constituting disposal must continue to meet the universal treatment standards. Such products, then, are not eligible for the soil treatment standards promulgated today. EPA has made this decision for several reasons. First, EPA has chosen technology-based treatment standards (such as today's soil treatment standards) as a means of implementing the LDR statutory requirements in order to eliminate as many of the uncertainties associated with land disposal of hazardous waste as possible.

55 FR at 6642 (Feb. 26, 1990). These uncertainties increase sharply when one considers possible dispositions of hazardous waste-derived products used in a manner constituting disposal. These products can be placed virtually anywhere, compounding potential release mechanisms, exposure pathways, and human and environmental receptors. 62 FR at 64506 (Dec. 5, 1997) and 53 FR at 31197–98 (August 17, 1988). For these reasons, the Agency in 1988 determined that these wastes should be treated to reflect the best treatment available, 53 FR at 31197–98, and the Agency believes this reasoning continues to hold with respect to contaminated soils. Second, EPA has determined that the soil treatment standards adopted in today's rule are justified, in many instances, in order to encourage remediation involving treatment over remedies that involve leaving un-treated contaminated soils in place. The Agency is less sure that this is a desirable incentive if the contaminated soils are to be used in a manner constituting disposal, again because of the uncertainties posed by this method of land disposal.

Note that EPA has explained, however, that remediation activities involving replacement of treated soils onto the land is not a type of use constituting disposal, in part, because it is a supervised remediation instead of an unsupervised recycling activity. 62 FR 26063 (May 12, 1997). This interpretation is not affected by today's rulemaking.

7. Availability of Soil Treatment Standards

EPA proposed that soil-specific land disposal restriction treatment standards would be available only for contaminated soils managed under an agency approved, site-specific cleanup plan termed a Remediation Management Plan or ''RMP.'' The Agency also specifically requested comment on whether soil-specific treatment standards should be made available to all contaminated soil. 61 FR at 18813 (April 29, 1996). The majority of commenters who addressed this issue strongly supported extending the soil treatment standards to all contaminated soil. These commenters argued that extending soil-specific LDRs to all contaminated soil would encourage voluntary and independent cleanups, especially at low and medium priority sites where a regulatory agency might not have the resources to provide real-time oversight through a ''RMP.'' After considering these comments, EPA is persuaded that the soil treatment standards should be available for all contaminated soil and has revised the regulations accordingly.

EPA's thinking in proposing to require a site-specific remediation management plan to take advantage of the soil treatment standards was that site-specific oversight, and potentially modification of the treatment standards, would be necessary to ensure that all contaminated soils were appropriately treated. 61 FR at 18807 (April 29, 1996). However, EPA now concludes that the soil treatment standards will ensure adequate treatment of all contaminated soils for two reasons.

First and primarily, the residuals from treatment of hazardous contaminated soil will typically continue to be regulated as hazardous waste and will remain subject to applicable RCRA Subtitle C requirements. 61 FR at 18810 (April 29, 1996). Non-soil residuals, such as wastes generated during application of separation technologies, will be regulated as hazardous wastes if they exhibit a characteristic of hazardous waste or if they derive from treating a soil which contains listed hazardous waste. Therefore, these types of non-soil residuals will typically be subject to the universal treatment standards in 40 CFR 268.40. See 57 FR at 37240 (Aug. 18, 1992) where EPA took the same approach for residues from treating contaminated debris. Soil residuals will also be regulated as hazardous waste unless it is determined that the soil does not contain hazardous waste.[21] For example, application of a thermal desorption technology would likely generate two types of residuals: treated soil (soil residual) and concentrated contaminants removed from the soil and captured in an air pollution control device (non-soil residual). If the contaminated soil contained a listed hazardous waste or exhibited a characteristic of hazardous waste at the time of treatment, both residuals would continue to be subject to RCRA Subtitle C regulations. The non-soil residual would be required to comply with applicable universal treatment standards prior to land disposal; the soil residual would generally require land disposal in a Subtitle C unit unless a ''contained-in'' determination was made. Therefore, although a remediation management plan is no longer required to take advantage of the soil treatment standards, a site-specific decision is still required before treated contaminated soil can exit the system of RCRA regulations.

Second, as noted earlier, EPA has extended the treatment requirement to all underlying hazardous constituents reasonably expected to be present in contaminated soils when such constituents are found at initial concentrations greater than ten times the universal treatment standard and retained current treatment requirements for hazardous contaminated soils used to produce products that are subsequently used in a manner constituting disposal.

8. Achievability of Contaminated Soil Treatment Standards

The soil treatment standards promulgated today are based primarily on the data for soil treatability found in EPA's Soil Treatment Database (SDB). See, Best Demonstrated Available Treatment Background Document for Hazardous Soils, August 1993 and LDR Phase 2 proposal at 58 FR 48122, Sept. 14, 1993. Data from the soil treatment database are corroborated by more recent performance data for non-combustion treatment of remediation wastes. See Soil Treatability Analysis: Analysis of Treatability Data for Contaminated Soil Treatment Technologies (April 1998, USEPA) and references cited in note 5 below.

The soil treatment data base contains 6,394 pairs of data points (for the same sample, one datum for untreated soil and one datum for treated soil) describing the treatment of hazardous constituents in contaminated soils managed under the RCRA and the Superfund programs. After screening the database to eliminate data from tests reflecting poorly designed or operated treatment, tests where EPA believes inappropriate technologies were applied (for example, data from immobilization of organic constituents) and other inappropriate data, the Agency was left with 2,541 pairs of data points. These data pairs depict treatment of ninety-four hazardous constituents, including eighty-five organic constituents and nine BDAT list metals. The retained 2,541 pairs of data points from the soil treatment database represent the treatment of organic and metal constituents by various technologies including: combustion, biological treatment, chemical/solvent extraction, dechlorination, thermal desorption, air/steam extraction, photolysis, soil washing, stabilization, and vitrification. The soil treatment database includes performance data from bench, pilot, and full scale technologies. A complete discussion of the Agency's method for

[21] The exception would be soil residuals from treatment of soils which were determined no longer to contain a listed hazardous waste or were decharacterized and yet remained subject to LDRs. In this case, since the treatment would be performed on non-hazardous soil, the soil residuals would also be considered non-hazardous.

screening the Soil Treatment Database can be found in the LDR Phase II proposal (58 FR 48129–31, September 14, 1993) and the Best Demonstrated Available Technology Background Document for Hazardous Soil (August 1993).

A number of commenters were concerned that aggregated data, i.e., the 2,541 pairs of data points representing the combined performance of combustion and non-combustion technologies, may mask the performance of non-combustion technologies alone. Commenters urged EPA to disaggregate these performance data to allow for more accurate analysis of non-combustion technology performance. As a result, EPA has disaggregated the combustion and non-combustion treatment data for purposes of analyzing the achievability of today's soil treatment standards. See generally, Soil Data Analysis: Soil Treatability Analysis of Treatability Data for Contaminated Soil Treatment Technologies (April 1998, USEPA) and Additional Information on Treatability of Contaminated Soils as Discussed in Section VII.B.8. of Phase IV Final Rule Preamble (April 1998, USEPA).

After separating out combustion data, the remaining non-combustion soil treatment data base is reduced from 2,541 to 2,143 paired data points. These 2,143 [22] data pairs depict the treatment of 72 organics [23] and nine metals in contaminated by biological treatment, chemical and solvent extraction, dechlorination, thermal desorption, air and steam stripping, hydrolysis, photolysis, soil washing, and stabilization.

As discussed earlier in today's preamble, EPA did not use the traditional BDAT approach to develop the soil treatment standards. Instead, the Agency evaluated data from the 2,143 non-combustion data pairs in the soil treatment database to identify, generally, the level of performance non-combustion soil treatment technologies achieve. In light of our multi-faceted objectives regarding remediation of contaminated soils (discussed earlier in this preamble), this approach and methodology are appropriate. As noted earlier in today's preamble, the numerical values chosen for soil treatment standards—90% reduction capped at ten times the UTS—are within the zone of reasonable values from which the Agency can properly select.

For soil contaminated with organic constituents, the retained 2,143 data pairs from the soil treatment database show generally that soils with moderate levels of contamination are more amenable to treatment by non-combustion technologies than soils with high levels of contamination. However, the data also show that the soil treatment standards promulgated today can be achieved by non-combustion technologies even in cases when soils contain elevated levels of harder-to-treat organic hazardous constituents, such as dioxins and furans, polychlorinated biphenyls (PCBs), and polynuclear aromatics (PNAs). The available data on the performance of non-combustion technologies suggest that some technologies are more effective with certain organics within specific families or chemical functional groups. For example, while many organic treatment technologies were effective in removing volatile organics from the soils, dechlorination is more effective than other non-combustion treatment technologies for treating chlorinated organics. For soil contaminated by metals, the retained 2,143 data points from the soil treatment database show that metals can typically be treated via stabilization to meet the soil treatment standards.

Although, for the reasons discussed earlier in today's preamble, EPA has elected to base the soil treatment standards on the performance of non-combustion technologies, combustion of soil is not prohibited. This is consistent with all other numerical treatment standards, which can likewise be achieved through use of any technology (other than impermissible dilution). It may be that combustion is, in fact, chosen as the remedial treatment technology at certain sites, most likely because of economic considerations (such as in the case of low soil volumes where on-site treatment units are not economically viable). Selection of the best treatment technology for the specific soil type and range of contaminants present at any given remediation site is a site-specific decision assuming, for soils subject to the LDRs, that the selected technology does not involve impermissible dilution and that today's soil treatment standards are met. Further details about the results of EPA's examination of treatment technologies for different groups of contaminants are discussed in the succeeding sections.

a. Comments. Many commenters expressed concern that the retained 2,541 data points from the soil treatment database might not adequately address the many types of soils and contaminated site scenarios that may arise in the field. Among other things, these commenters asserted that: (1) the list of chemical organic constituents for which EPA has data may be too small to extrapolate to other organics in the list of underlying hazardous constituents that must meet treatment standards; (2) for organic constituents, many of the treatment test results examined by EPA involved mostly combustion rather than non-combustion technologies; (3) for soils with multiple hazardous constituents and other complex soil matrices, the soil treatment standards could only be met via incineration; and, (4) EPA should not pool data from bench, pilot, and full scale treatment applications. For the most part, these commenters suggested that EPA either exempt hazardous contaminated soil entirely from a duty to comply with land disposal restriction treatment standards or, if hazardous contaminated soil were to remain subject to LDRs, allow risk-based treatment standards to be developed entirely on a site-by-site basis pursuant to state oversight.

EPA closely considered these comments and carefully re-evaluated the data from the soil treatment database as well as other data from more recent sources. These evaluations are summarized in the background documents for today's final rule. EPA is not, at this time, taking action to categorically exempt large volumes of hazardous remediation waste (including contaminated soil) from RCRA hazardous waste management requirements and, therefore, the issue of achievability of today's soil treatment standards is germane.

Notwithstanding the treatment results described in this section below, which support the achievability of today's soil treatment standards, EPA realizes that national, technology-based treatment standards are sometimes not achievable because of site- and waste-specific characteristics. Thus, EPA has long provided for treatment variances under these circumstances (see 40 CFR 268.44). In addition, because EPA and authorized states are in a position during remediation to make site-specific risk-based minimize threat determinations, the Agency is also adopting in today's rule a new type of variance for contaminated soils. This variance can be granted if, on a case-by-case basis, it is determined that the technology-based treatment standard

[22] One single datum from the vitrification of p,p'DDT was not included since it appears to have resulted from treatment that was not optimally designed or conducted.

[23] Out of 85 organic constituents, only 13 were treated exclusively by combustion. See, however, the discussion later in this preamble with regard to presence of data from incineration and extrapolation of data among organic constituents.

would prompt treatment beyond the point at which threats are minimized.

Fundamentally, EPA agrees with many commenters that today's land disposal treatment standards for contaminated soil may not remove all of the barriers RCRA can impose on efficient and aggressive site remediation. As discussed earlier in today's preamble, the Agency hopes the application of RCRA Subtitle C requirements to remediation of contaminated soils and other wastes will be addressed through legislation. If there is no legislative action, EPA may choose to take additional regulatory action, which may include either a re-examination of the application of LDRs to contaminated soil or other remediation wastes or a re-evaluation of today's soil treatment standards, or both. In the meantime, today's rule represents a significant improvement over the current practice of applying the treatment standards developed for pure industrial hazardous waste to contaminated soil.

b. Analysis of Data from the Soil Treatment Database. The soil treatment standards promulgated today are based EPA's Soil Treatment Database (SDB). See, Best Demonstrated Available Treatment Background Document for Hazardous Soils (August 1993); LDR Phase 2 proposal (58 FR 48122, Sept. 14, 1993); and Soil Treatability Analysis: Analysis of Treatability Data for Contaminated Soil Treatment Technologies (April 1998, USEPA) (hereinafter, this document is referred to as the ''Soil Treatability Analysis Report''). General concerns about the soil treatment database (and in particular, concerns about achieving the 10 times UTS or 90% reduction standard) are addressed here. Results of our analysis of the soil treatment database data on treatment performance for various technologies are shown in Table 1 below. Results of additional analysis for various organic and metal contaminant groups are shown in Tables 2–5 below. Further details of the analysis and additional findings are contained in the technical background documents in this docket.

TABLE 1.—SUMMARY OF TREATMENT RESULTS PER TECHNOLOGY IN SOIL DATA BASE [24]

Treatment technology	Total paired data points in the soil data base	Untreated	Treated			
		Data points meeting 10 times UTS standard	Data points meeting 10 times UTS but not 90% reduction standard	Data points meeting 90% reduction but not 10 times UTS standard	Data points meeting both 10 times UTS and 90% reduction standards	Data Points failing both 10 times UTS and 90% reduction standards
Biological Treatment	250	86	176	168	109	15
Chemical Treatment	242	58	226	206	200	10
Dechlorination	154	53	134	100	84	4
Stabilization	269	140	250	239	232	12
Stripping	236	88	206	103	103	30
Washing	35	10	21	14	11	11
Thermal Desorption	957	338	833	759	692	57
Total	2143 [25]	773	1846	1589	1431	139

In aggregate, the results on Table 1 indicate that the Agency's selection of standards are within the range of reasonable values for non-combustion technologies to achieve. These data show that 139 (or 6%) paired data points out of 2143 would fail to meet the 10 times UTS or 90% reduction standard. Among possible reasons for these treatment performance deviations are that some soil samples represent cases in which the selected technology was not appropriate for the range of hazardous constituents in an organic chemical admixture. A better selection of treatment technology may include either a more aggressive non-combustion technology or may involve use of two or more technology trains in order to meet the soil treatment standards. It is common practice to employ multiple treatment trains at facilities that have complex chemical mixtures or soil textures at a site. As further explained in succeeding sections of this preamble and in various background documents, EPA believes that the hazardous soil treatment standards promulgated today are within a regime of reasonable treatment levels normally achieved by non-combustion technologies. See, e.g., Soil Treatability Analysis Report and Extrapolation of Treatment Performance Data in the Soil Data Base Among Hazardous Constituents in Contaminated Soils (April 1998, USEPA).

(1) Concerns About Presence of Data from Incineration and Extrapolation of Data to Other Constituents. As mentioned earlier, EPA has segregated the available treatment data (2,541 paired data points) so that we can better examine the 2,143 paired data points describing the treatment of hazardous soils by non-combustion technologies. Although 50 organic constituents in the original 2,541 paired data points were treated by combustion (i.e., incineration), only 13 of these 50 organics were treated exclusively by combustion. These 13 hazardous constituents are: 1,2,4-trichloro-benzene; p,p′-DDD; p,p′DDE; 2,4-dichlorophenol; methoxychlor; 2,4,6-trichlorophenol; 2,4,5-trichlorophenol; carbon tetrachloride; chloroform; hexachloroethane; 1,2-dibromo-3-chloro-propane; isodrin; and gamma-BHC. None of the data describing combustion of these 13 constituents or the other 37 organics (for which there are some combustion results) were relied upon in assessing achievability of today's hazardous soil treatment limits.

With respect to commenters' concerns about extrapolating the SDB data to organic and inorganic constituents that will need to be treated, EPA analyzed the various non-combustion technologies and their average treatment efficiencies against various chemical clusters and chemical functional groups of hazardous constituents. See: (1) Extrapolation of Treatment Performance Data in the Soil Data Base Among Hazardous Constituents in Contaminated Soils (April 1998, USEPA); (2) Derivation of Treatment Achievability Results of Organic Functional Groups and Types of Compounds (April 1998, USEPA); (3) Soil Treatability Analysis Report (USEPA, 1998); and (4) Additional

[24] For discussion of these treatment data, see Soil Treatability Analysis Report, and Extrapolation of Treatment Performance Data in the Soil Data Base Among Hazardous Constituents in Contaminated Soils (April 1998, USEPA).

[25] As noted earlier, EPA examined in detail up to 2,541 pairs of data points in total, and the number of non-combustion data pairs examined is 2,143.

Information on Treatability of Contaminated Soils as Discussed in Section VII.B.8. of the Final Rule Preamble (April 1998, USEPA).

The results are summarized in Tables 2–5 below. These results show that non-combustion technologies can achieve today's soil treatment standards. 93.5% (2,004 of the 2,143 data pairs) of the treatment test results meet the 10 times UTS or 90% reduction standard. Furthermore, non-combustion technologies can meet the soil treatment standards even in cases when soils contain elevated levels of harder-to-treat organic hazardous constituents, such as dioxins and furans, polychlorinated biphenyls (PCBs), and polynuclear aromatics (PNAs). See Appendix D in Soil Treatability Analysis Report.

As noted earlier, available data on the performance of non-combustion technologies treating organics also show that some technologies are more effective with certain organics within specific families or chemical functional groups, e.g., organic treatment technologies removing volatile organics from the soils and dechlorination removing halogenated organics. Treatability tests at certain complex sites corroborate these findings of achievability from the SDB.

Regarding organics, at the Ninth Avenue Dump Site in Indiana, hazardous soils were contaminated with low to moderate concentrations of PNAs, aromatics, chlorinated aliphatics, and phthalates. Untreated constituents showed concentrations that were about the same or up to two orders of magnitude higher than today's soil treatment standards.[26] Among the volatiles were toluene (1,100 ppm), total xylene (2,100 ppm), ethylbenzene (420 ppm), 1,1,1-trichloroethane (120 ppm), trichloroethene (93 ppm), tetrachloroethene (380 ppm), 1,1-dichloroethane (81 ppm), and methylene chloride (800 ppm). The following semivolatile organics-PNAs (and their highest concentration) were phenanthrene (92 ppm) and naphthalene (84 ppm). Bis(2-ethylhexyl) phthalate, a semivolatile phthalate, was reported at 110 ppm. The soil particle distribution of the contaminated soil was not quantified, but the soil was reported as comprised primarily of sand and silt. Biotreatment achieved the following average treatment reduction efficiencies:

- Volatile chlorinated aliphatics—99.9%;
- Ethylbenzene—100%;
- Volatile aromatics—99.9%;
- Semivolatile PNAs—97.4%;
- Bis(2-ethylhexyl)phthalate—93.2%.

Regarding complex metal remediations, the full-scale stabilization study conducted at the Portable Equipment Salvage Company, a transformer and metal salvage operation in Oregon, involved untreated levels of lead up to 880 mg/l (TCLP) and zinc up to 71 mg/l (TCLP). Organics were also present—the highest sample showing 610 mg/l lead (TCLP), 14,000 ppm oil and grease, 41,000 ppm total organic carbon, and 7.1 pH. The facility conducted treatability studies on three soil textures found at the site: (1) sandy loam, (2) loamy sand, and (3) loam. The stabilized sandy loam sample showed a concentration of 0.5 ppm lead, a 99.72% reduction efficiency. The facility also treated two samples of loamy sand, one to 47 mg/l lead (TCLP) (a 93.65% reduction efficiency) and the other to 2.5 mg/l lead (TCLP) (a 99.72% reduction efficiency). The treated loam sample showed 0.10 mg/l lead, a 99.97% reduction.

More information underlying EPA's rationale for extrapolating the available treatment performance data to other organic and inorganic hazardous constituents regulated under the land disposal restrictions can be found in the RCRA Docket for this rule (see Appendix D in Soil Treatability Analysis Report) and memorandum to docket on extrapolation of treatment performance data among different hazardous constituents.

Finally, we note that even though there were treatment data on soils containing cyanide in the larger data base (6,394 paired data points), none of the retained 2,541 or 2,143 paired data points included treatment data on cyanide. However, the current UTS for cyanide is based on the performance of alkaline dechlorination, a non-combustion technology. Cyanides can form complexes with metals and organics and, therefore, technologies capable of removing both organic and metals are also able to remove cyanide from contaminated soils. As a result, it is reasonable to expect that the average treatment performance attained by treating organics in soils will also be achieved for cyanide-bearing contaminated soils. We note that, for example, 90% reduction can be achieved based on the performance efficiency that thermal desorption attained in removing PNA's (with more than five rings) and chlorinated organics from contaminated soil. These constituents are among the hardest chemical species to remove via thermal desorption. For these reasons, the Agency has concluded that today's soil treatment standard for cyanide can be achieved by a non-combustion technology as well.

(2) Technology Scale and Soil Variability Issues. As noted earlier, several commenters objected to EPA's pooling of treatment data from pilot, bench, and full scale processes, and urged EPA to consider only performance data from full-scale field studies characterizing the treatment of soil volumes. EPA prefers, generally, to rely on full scale studies for the purpose of developing and promulgating treatment standards, and this is true with respect to the soil treatment standards as well. However, in this case as well as in many prior LDR treatment standard efforts, EPA's data base includes more than just full scale data upon which EPA can properly rely. Bench and pilot scale technologies can be appropriately considered by EPA (and EPA has historically done so) in setting treatment limits as long as full scale operations of the treatment system under consideration exist or have been demonstrated on wastes/soils. Except for hydrolysis,[27] the technologies in the SDB are demonstrated full scale, and the administrative docket contains bench, pilot, and full scale studies that reflect the Agency's field experiences at contaminated sites.

Furthermore, in this rulemaking, given the variability of hazardous soils (in terms of types, concentrations and numbers of hazardous constituents and soil matrices), plus the special policy considerations associated with remediations, the Agency is adopting treatment standards from the zone of reasonable values that could be permissibly selected based upon the treatment performance data. Thus, the data are not being used so much to establish a precise performance level as to confirm the typical achievability of the promulgated standards, i.e., ten times UTS or 90% reduction.

With respect to the SDB and commenters' concerns about the impact of soil variability on achievability of the soil treatment standards by non-combustion technologies, EPA collected 6,394 pairs of data point describing the treatment of various hazardous soils.

[26] The following constituents were present at levels below the soil treatment standards; fluorene, fluoranthene, pyrene, acenaphthalene, benzo(a)anthracene, chrysene, di-n-butyl phthalate, and diphenylnitrosamine.

[27] Hydrolysis can be of normal occurrence or intentionally induced at hazardous waste sites. EPA does not have full-scale ex-situ demonstration studies on this technology but considers the data in the SDB to be indicative of what levels can be achieved.

The retained 2,143 non-combustion paired data points are reasonably sufficient to adequately describe the treatment of metal, organics, and multiple metal and organic contaminants that are frequently found at different type of sites, including both Superfund and RCRA sites. For instance, the SDB has treatment data on soils with varying textures including top soils, silty/loam soils, and clay soils. For the 14 different soil type groupings analyzed, only 139 out of 2,143 data pairs (about 6.5%) would not meet today's soil treatment standards (see Appendices C and D in Soil Treatability Analysis Report).

With respect to these 6.5% data pairs, several potential reasons exist to explain why 90 % reduction or 10 times UTS level might not have been achieved. First, the treatment study objectives may not primarily have been to test whether these standards could be met. For example, the treatment study may have been designed either to assess the feasibility of using a particular (but not necessarily optimum) technology on a particular contaminated soil, or to meet a prescribed risk-based level under a RCRA or CERCLA site remediation plan.

Second, a treatment technology may have been applied to soils contaminated with multiple hazardous constituents where the technology may have been inappropriate for a subset of those contaminants (and for which data were reported anyway). For example, air stripping is a technology that operates best on volatile organics within a given range of Henry constant values. In contrast, air stripping of semivolatile organics and metals is expected to be much poorer. (In this type of situation, a technology amendment or treatment train may be appropriate, i.e., air stripping may be improved if steam stripping is applied first to enhance the pool of semivolatiles that can respond to the physical separation treatment process.)

Third, these treatment data likely include instances when a treatment technology encountered soil heterogeneities that resulted in undertreatment of portions of the soil. For instance, during the clean up of contaminated debris and soils, detailed sampling protocols are typically developed to ensure that desired treatment constituent concentrations are met because of the deleterious impact of heterogeneous soil strata and the presence of debris on treatment technology performance. Re-processing can often be required to comply with the applicable treatment standards. Another alternative is to optimize specific technology operating parameters that can enhance the ability of the technology to meet the prescribed treatment limits. Optimization can involve: (1) feeding the correct soil/debris particle size fractions to the treatment system, (2) creating more turbulence between soil and gaseous/liquid treatment fluids, (3) using a greater-than-normal amount of chemical agents, (4) operating at the higher end of an operating temperature range, (5) adjusting the pH of the soil, (6) adding adequate pre-/post-treatment steps that address specific contaminants that may be expected to receive sub-optimal treatment, or (7) allowing longer residence time in the treatment unit.

It is not possible to determine precisely how many of these techniques were used in the 139 instances that failed the 90% reduction or 10 times UTS levels. However, EPA expects that not all optimization measures were used since the operators of the treatment technologies did not have as their primary objective the attainment of these particular levels, which are being adopted today as the soil treatment standard. On balance, the weight of evidence and analysis from the SDB are believed to reasonably indicate that today's standards are achievable for soils that may exhibit variability, particularly if optimization techniques or treatment technology trains are fully considered. Of course, should an unusual situation present itself in which these measures are not successful, a treatment variance can be sought under 40 CFR 268.44(h) or under the risk-based variance provisions being adopted in today's rule.

Furthermore, EPA has a number of bench and pilot studies on the treatment of contaminated soils from wood preserving, petroleum refining, and electroplating sites, which contain a wide range of constituents such as polynuclear aromatic, phenolic, chlorinated organics, spent solvents, creosote, and metals. It is reasonable to expect that these treatment results, showing achievability, also lend support to the conclusion that treatment at other RCRA and Superfund sites, containing these types of complex contaminant and soil variability scenarios, can be expected to achieve today's soil treatment standards.[28] See also Chapter 4 in Soil Treatability Analysis Report.

Pooled bench, pilot, and full scale data in the SDB are expected to depict what the various treatment technologies can achieve for other hazardous soils managed under CERCLA and RCRA. As noted earlier, non-combustion technologies will behave better on a given range or class of organic and metal constituents. A given range of soil characteristics that may inhibit treatment performance can be amended to facilitate the treatment of hazardous soils. Available information on other full scale operations of the tested technologies demonstrate that optimization techniques can be used to overcome potential soil interferences and thus attain, generally, treatment design objectives. Hence, it is important to carefully evaluate the characteristics of each site against the expected capabilities of various non-combustion technologies, which are summarized below.

(3) Performance Data for Organic Constituents. EPA's conclusions with respect to achievability of soil treatment standards for organics in hazardous soils are based on the performance of biological treatment, chemical extraction, dechlorination, soil washing, thermal desorption, and soil vapor extraction. Other treatment technologies capable of achieving the treatment limits (such as combustion) are not prohibited except for those that may constitute impermissible dilution. Tables 2 and 3 below provide an overview of the number of data points and the average treatment efficiency ranges that each of the technology categories achieved. Also, each Table below reports the range of test scales as well as the available treatment performance data per major chemical family category/cluster assigned to chemical constituents in the BDAT List. (For the whole list of BDAT constituents and their classification, see Appendix B in the BDAT Background Document for Hazardous Soils, August 1993.) Further details and discussion on the results for major chemical family categories/clusters is contained in the docket.

[28] See (1) *Remediation Case Studies: Bioremediation and Vitrification,* July 1997, EPA 542–R–97–008 or PB97–177554; (2) *Remediation Case Studies: Soil Vapor Extraction and Other In Situ Technologies,* July 1997, EPA 542–R–97–009 or NTIS PB97–177562; (3) *Analysis of Selected Enhancements for Soil Vapor Extraction,* September 1997, EPA–542–R–97–007; (4) *Remedial Case Studies: Thermal Desorption, Soil Washing, and In Situ Vitrification,* March 1995, EPA 542–R–95–005 or NITS PB95–182945; (5) *Remediation Case Studies: Soil Vapor Extraction,* March 1995, EPA 542–4–95–004 or NTIS PB95–182937; and (6) *Remediation case Studies: Bioremediation,* March 1995, EPA 542–R–95–002 or NTIS PB95–182911.

TABLE 2.—SUMMARY OF NONTHERMAL TREATMENT PERFORMANCE DATA ON GROUPS OF ORGANIC HAZARDOUS CONSTITUENTS [29]

BDAT organic cluster	Biotreatment scale: 0.01 kg to 1,250,000 kg		Chemical extraction scale: 0.0075 kg to 37,000 kg		Dechlorination scale: 0.1 kg to 127,913 kg		Soil washing scale: 0.08–204 kg		Hydrolysis scale: 0.1 kg to 2.75 kg	
	Data points	Average removal efficiency	Data points	Average removal efficiency	Data points	Average removal efficiency	Data points	Average removal efficiency	Data points	Average removal efficiency
Volatiles	48	>99%	9	>99%	13	96.3 to 99.3%	None	None	None	None
Semivolatiles	185	55–98.2% [30]	163	62–98.8%	2	99.8%	13	81.8–97.2%	None	None
Organochlorine	12	16.7—70.2%	None	None	13	>95.2%	None	None	2	67.9–91.7%
Phenoxyacetic Acid Pesticides	None	None	None	None	9	98.6–99.0%	None	None	None	None
Organo Phosphorous insecticides [31]	None	None	None	None	None	None	None	None	None	None
Polychlorinated Biphenyls	None	None	52	71.5%–99.9%	69	68.8–97.1%	1	88.5% [32]	None	None
Dioxins and Furans	None	None	12	40–>97%	48	73.7–>99.8%	7	84.8%	None	None
Total Number of Data Points	245		236		154		21		2	

TABLE 3.—SUMMARY OF THERMAL PERFORMANCE DATA ON GROUPS OF ORGANIC HAZARDOUS CONSTITUENTS [33]

BDAT organic cluster	Thermal desorption [34] scale: 21.6 kg to 3,823,000 kg		Soil vapor extraction scale: 4.5 kg to >1,000 kg	
	Data points	Average removal efficiency	Data points	Average removal efficiency
Volatiles	293	79.2–99.9%	189	44–99.2%
Semivolatiles [35]	614	50–99.4%	47	0–57.2%
Organochlorines	12	88.5–98.8%	None	None
Phenoxyacetic Acid Pesticides	None	None	None	None
Organo Phosphorous insecticides [36]	None	None	None	None
Polychlorinated Biphenyls	1	87.5%	None	None
Dioxins and Furans	37	85.6–97.6%	None	None
Total Number of Data Points	957		236	

As shown on Tables 2 and 3, EPA lacks performance data for the thermal or non-thermal treatment of four organic constituents classified in the BDAT list as organophosphorous insecticides. These four constituents are disulfoton, famphur, methyl parathion, and phorate. However, we can determine achievability for these four organic constituents based upon the transfer of treatment data for other, similarly difficult to treat organics. Because of structural and chemical similarities, these four organophosphorous compounds are expected to behave similarly during treatment to other polar nonhalogenated phenols, phenyl ethers, and cresols. Thus, EPA believes that these four organophosphorus compounds can be treated by the same technologies as other polar nonhalogenated organic compounds, for which EPA has data. Therefore, based on the available data for polar nonhalogenated compounds, EPA concludes that the treatment standards for soils contaminated with these four organophosphorous compounds can be achieved by biodegradation, chemical extraction, and thermal desorption (semivolatiles).

(4) Other Indicia of Achievability for Organic Constituents

EPA also re-analyzed certain portions of the SDB with regard to ability of various technologies to meet today's soil treatment standards by looking more closely at organic treatability groups based on the structural features of the hazardous constituents of concern. The results of this analysis, presented in Table 4 below, corroborate those in Tables 1–3 and EPA's conclusion that the soil treatment standards—ten times UTS or 90% reduction—are within the zone of reasonable values that could have been selected. For further information on the derivation of Table 4, see the background document entitled ''Derivation of Treatment Achievability Results for Organic Functional Groups and Types of Compounds.''

[29] For a discussion of these treatment data, see the Soil Treatment Achievability Report; Extrapolation of Treatment Performance Data in the Soil Data Base Among Hazardous Constituents in Contaminated Soils (April 1998, USEPA); and the Additional Information on Treatability of Contaminated Soils as Discussed in Section VII.B.8. of Phase IV Final Rule Preamble, (April 1998, USEPA). These documents indicate the numbers and types of data pairs that meet the 10 times UTS level, both prior to treatment and after the treatment described in the table.

[30] Cyclical hydrocarbons with more than five rings undergo lower reduction efficiencies.

[31] EPA is transferring the available performance data from the chemical extraction and the biological treatment of (semivolatile) polar nonhalogenated organics in the hazardous solid treatment data base. Thus, the columns are intentionally left blank.

[32] Only one test was performed.

[33] For a discussion of these treatment data, see the Soil Treatment Achievability Report; Extrapolation of Treatment Performance Data in the Soil Data Base Among Hazardous Constituents in Contaminated Soils (April 1998, USEPA) and the Additional Information on Treatability of Contaminated Soils as Discussed in Section VII.B.8. of Phase IV Final Rule Preamble, (April 1998, USEPA). These documents indicate the numbers and types of data pairs that meet the 10 times UTS level, both prior to treatment and after the treatment described in the table.

[34] The term thermal desorption, as used in this table, is a general description of various thermal techniques. No conclusion may be drawn about the regulatory status or classification of a particular thermal desorber from the inclusion of treatment data from that device in this column.

[35] The performance of combustion and soil vapor extraction is less effective in treating semivolatile organics that contain aromatic and heterocyclical structures. The same is true for and nonvolatile chlorinated organics.

[36] EPA is transferring the available performance data from the chemical extraction and the biological treatment of (semivolatile) polar nonhalogenated organics in the hazardous soil treatment data base.

TABLE 4.—TREATMENT EFFICIENCY—PERCENT REDUCTION RANGES BY TECHNOLOGY FOR VARIOUS FUNCTIONAL GROUPINGS

[Average percent reduction in brackets; number of data points analyzed in parentheses] [37]

Treatability group	Biological treatment	Chemical extraction	Dechlorination	Thermal desorption [38]	Soil washing	Other technologies [39]
Halogenated Nonpolar Aromatics	52.05–99.97 [76.01] (2)	80.42 [80.42] (1)	99.05–100 [99.53] (2)	29.19–100 [95.31] (29)	66.21–95.6 [85.41] (4)	30.13—49.68 [42.41] (3)
Dioxins, Furans, PCBs, and Precursors	none	14.88–99.97 [90.13] (40)	91.66–99.88 [97.94] (20)	98.9–100 [99.57] (17)	none	none
Halogenated Phenols, Cresols, and Other Polar Aromatics	45.1–95.14 [81.05] (5)	63.83–93.18 [79.46] (3)	none	2.71–99.93 [56.21] (15)	6.25–99.06 [73.71] (6)	96.21 [96.21] (1)
Halogenated Aliphatics	99.87–99.99 [99.91] (3)	86.62–94.81 [91.09] (3)	89.06–100 [97.54] (7)	36.88–100 [96.49] (80)	58.68–99.4 [90.58] (9)	72–99.68 [95.66] (6)
Halogenated Cyclic Aliphatics, Ethers, Esters, and Ketones	9.76–99.77 [60.99] (8)	none	none	none	none	none
Nitrated Aromatics and Aliphatics	none	none	none	none	none	none
Simple Nonpolar Aromatics and Heterocyclics	99.97–100 [100] (10)	77.41–99.92 [90.77] (6)	96.39–100 [98.61] (10)	22.68–100 [94.3] (158)	47.74–99.91 [82.39] (14)	97.7 [97.7] (1)
Polynuclear Aromatic Hydrocarbons	5.13–99.85 [67.15] (75)	51.55–99.98 [95.72] (125)	10.92–97.42 [67.47] (3)	10.14–100 [94.19] (301)	81.83–92.19 [85.74] (3)	95.9–99.55 [97.73] (2)
Other Nonhalogenated Polar Organics	none	75.96–99.82 [98.35] (28)	90.81–99.89 [95.13] (10)	2.6–99.98 [82.04] (36)	51.07–99.97 [88.67] (10)	94.59–99.89 [97.24] (2)

(5) Performance Data for Metal Contaminants

Performance data for metals contaminants are based on the performance of stabilization and chemical extraction (mercury) of soils contaminated with metals. Other metal treatment technologies are not prohibited (except if impermissible dilution were to occur). The results of EPA's analysis of the data on treatment of metals in soils are summarized in Table 5 below.

TABLE 5.—SUMMARY OF PERFORMANCE DATA FOR HAZARDOUS METALS CONSTITUENTS [40]

BDAT metals cluster	Stabilization scale: bench, pilot, and full scale		Chemical extraction scale: pilot		Soil washing scale: bench & pilot	
	Data Points	Average removal efficiency	Data points	Average removal efficiency	Data points	Average removal efficiency
Metals	269	91.1–99.8%	4	97.7% [41]	14	17.9–97.2%
Total	269		4		14	

The results in Table 5 corroborate EPA's conclusion that the soil treatment standards—ten times UTS or 90% reduction—are within the zone of reasonable values that could have been selected. For further information on the derivation of Table 5, see Soil Treatability Analysis Report.

With respect to multiple metal constituents or organometallic constituents in a contaminated soil, we

[37] Table based on data from *''Delivery of Graphs and Data Tables Showing Corrected Treated Concentrations vs. Data Point Number Index for Selected Constituents,''* February 19, 1992 (Administrative Record of the proposed LDR Phase 2 rules as F–93–CS2P–S0597). See also (1) Derivation of Treatment Achievability Results for Organic Functional Groups and Types of Compounds, April 1998 (USEPA); (2) Additional Information on Treatability of Contaminated Soils as Discussed in Section VII.B.8. of Phase IV Final Rule Preamble, (April 1998, USEPA); (3) Extrapolation of Treatment Performance Data in the Soil Data Base Among Hazardous Constituents in Contaminated Soils (April 1998, USEPA); and (3) Soil Treatability Analysis Report (April 1998, USEPA). These documents indicate the numbers and types of data pairs that meet the 10 times UTS level, both prior to treatment and after the treatment described in the table.

[38] The term thermal desorption, as used in this table, is a general description of various thermal techniques. No conclusion may be drawn about the regulatory status or classification of a particular thermal desorber from the inclusion of treatment data from that device in this column.

[39] These include air stripping, photolysis, and treatment trains.

[40] For a discussion of these treatment data, see the Soil Treatment Achievability Report; Extrapolation of Treatment Performance Data in the Soil Data Base Among Hazardous Constituents in Contaminated Soils (April 1998, USEPA); and the Additional Information on Treatability of Contaminated Soils as Discussed in Section VII.B.8 of Phase IV Final Rule Preamble, (April 1998, USEPA). These documents indicate the numbers and types of data pairs that meet the 10 times UTS level, both prior to treatment and after the treatment described in the table.

[41] Available data are exclusively for the treatment of mercury on soils.

recognize that a situation may call for two or more treatment technology trains to achieve the treatment standards promulgated today (e.g., one treatment for organics and another for metals). This must include proper consideration of the order in which various treatment processes should be applied to the contaminated soil so that treatment effectiveness is optimized. However, if these considerations have been properly made and the required treatment standards are not being met because, for example, of unique soil matrices or difficult to treat sites, then we expect that entities may elect to seek a treatment variance pursuant to 40 CFR 268.44(h) or a risk-based soil treatment variance, which is being adopted in today's rule.

c. Data Submitted by Commenters

At least four commenters submitted treatment data from studies describing the performance of innovative and conventional treatment technologies on hazardous soils. DuPont submitted bench, pilot, and full scale treatment data from various vendors describing the operation of soil washing. DuPont asserts these data supports the viability of soil washing as an innovative technology for hazardous soils.

The Environmental Technology Council (formerly the Hazardous Waste Treatment Council) submitted full, pilot, and bench scale treatment data from various vendors of innovative treatment technologies and provided an extensive review of EPA's soil treatment data base. See document entitled, Evaluation of Proposed BDAT Soil and Process Treatment Technologies—Report to the Hazardous Waste Treatment Council, November 1993 (filed as document number CS2P00060.E in Docket No. F–92–CS2P–FFFFF). Based on the ETC's technical report and the subsequent comments of the ETC to the HWIR-Media rule (see comments from the Environmental Technology Council, filed as comment number MHWP 00088 in Docket No. F–92–CS2P–FFFFF), the ETC believes that today's treatment standards for hazardous soils are achievable using thermal treatment. Although the ETC report stated that EPA may lack full-scale treatment data for several innovative or alternative technologies, the ETC data support EPA's view that the many full scale operations of non-combustion technologies demonstrated in the field were sufficient to support a view that the soil treatment standards were achievable. Further, the ETC pointed to various examples of how various non-combustion treatment technologies can be better optimized. EPA concurs with many of those observations on how non-combustion technologies can be optimized.

Two other commenters submitted data in the Phase 2 rule regarding the performance of non-combustion technologies—USPCI and Sierra Environmental Services. USPCI's performance data describe the treatment of polynuclear organics in soils via chemical oxidation followed by stabilization. These data were determined to be insufficient to support a broad national determination that stabilization of organics can be considered BDAT for organics. However, use of organic stabilization may, in some situations, be a permissible treatment option since the LDRs do not specifically prohibit the use of stabilization or solidification to treat nonwastewaters containing hazardous organic constituents. See Response to Comment Document, Comment from Chemical Waste Management, Inc. (No. PH4P–00048). There are, however, specific circumstances in which stabilization or solidification would be considered impermissible dilution. We expect that, for these types of situations to be properly evaluated, it will be necessary to petition for a treatment variance under 40 CFR 268.44(h) or under the provisions for a risk-based soil treatment variance being adopted in today's rule. The Agency also is currently considering whether, in the near future, to issue guidance on when stabilization or solidification of organic-bearing waste is appropriate and when it may constitute impermissible dilution.

Sierra Environmental Services submitted performance data regarding the treatment of carcinogenic polyaromatic hydrocarbons (cPAH) via bioremediation. These data are based on in-situ treatment of a 7.5 acre lagoon which was divided into two cells. Although the facility remediated 35 volatile, 65 semivolatile organics, PCBs, and pesticides, the facility only submitted data describing the treatment of major PAHs. Based on the performance of the biotreatment process applied to this site, the commenter argued the proposed treatment standards, if promulgated as proposed, would eliminate biotreatment as an alternative at this facility. EPA disagrees. Remediation processes that are applied in-situ do not trigger land disposal restrictions. If the facility were biotreating the lagoon sludges ex-situ, EPA concurs that the facility may be unable to land dispose the treated lagoon sludges. We also note that, under the existing regulations and regulations being adopted today, the commenter may be able to avail itself of a treatment variance, depending on the site-specific circumstances involved.

9. Applicability of Soil Treatment Standards and Readability of Final Regulations

Many commenters asserted that the proposed regulations governing applicability of LDRs to contaminated soil were difficult to understand and apply. EPA was persuaded by these comments and has reformatted the applicability regulations into an easier-to-read table. The Agency recognizes that determining whether or not LDRs apply to any given volume of contaminated soil can be complicated. To further assist program implementors and facility owners/operators, we will review and discuss the principles that govern LDR applicability for contaminated soil in this section of today's preamble.

The following principles informed EPA's decisions concerning application of LDRs to contaminated soils.

First principle: land disposal restrictions only attach to prohibited hazardous waste (or hazardous contaminated soil) when it is (1) generated and (2) placed in a land disposal unit.[42] Therefore, if contaminated soil is not removed from the land (i.e., generated), LDRs cannot apply. Similarly, if contaminated soil is removed from the land (i.e., generated) yet never placed in a land disposal unit, LDRs cannot apply.[43] In other words, LDRs do not apply to contaminated soil *in situ* or force excavation of contaminated soil. If soils are excavated, however, LDRs may apply, as discussed below.

Second principle: once a decision has been made to generate and re-land-dispose contaminated soils, LDRs generally only apply to contaminated soils that contain hazardous waste. The Agency considers soil to contain hazardous waste: (1) when it exhibits a

[42] As discussed earlier in today's final rule, all hazardous wastes that were listed or identified at the time of the 1984 Hazardous and Solid Waste Amendments to RCRA have been prohibited from land disposal. EPA is required to prohibit hazardous wastes listed or identified after 1984 within six months of the wastes' listing or identification. RCRA Section 3004(g)(4). A table in 40 CFR Part 268 Appendix VII. outlines the dates of LDR applicablity for hazardous wastes.

[43] Note that, as discussed later in today's preamble, nothing in today's final rule affects implementation of the existing ''area of contamination'' policy. Therefore, soil managed within areas of contamination, even if it is ''removed from the land'' within such an area, would not be considered to be ''generated.'' See the discussion of the area of contamination policy later in today's preamble.

characteristic of hazardous waste; and, (2) when it is contaminated by certain concentrations of constituents from listed hazardous waste. The contained-in policy is discussed in Section VII.E of today's preamble.

Third principle: once LDRs attach (generally, at the point of generation, see principle (1)) to any given hazardous waste or volume of hazardous contaminated soil, the LDR treatment standards continue to apply until they are met. This principle comes from application of the logic of the Chemical Waste opinion. In that opinion, the D.C. Circuit held that land disposal prohibitions attach at the point that a hazardous waste is generated and continue to apply until threats posed by land disposal of the waste are minimized. Chemical Waste Management v. EPA, 976 F.2d at 13, 14 and 24. In illustration of this principle, the court held that (in the case of characteristic hazardous waste) elimination of the property that caused EPA to identify a waste as hazardous in the first instance does not automatically eliminate the duty to achieve compliance with LDRs. As discussed later in this section of today's preamble, EPA has determined that, although the Chemical Waste opinion did not address contaminated soils *per se*, it is prudent to apply the logic of the Chemical Waste opinion to contaminated soils.

Using these principles, EPA created the regulations and table that govern application of LDRs to contaminated soils, as discussed below.

The regulations that address application of LDRs to soil that exhibits a characteristic of hazardous waste are relatively straightforward. Soil that exhibits a characteristic of hazardous waste when it is generated is subject to LDRs and must be treated to meet LDR treatment standards prior to land disposal. EPA's conclusion that soil that exhibits a characteristic of hazardous waste must be treated to meet LDRs prior to land disposal derives from a simple application of the principles above. First, LDRs have the opportunity to attach to contaminated soil at the point of generation (principle (1)) and, second, under the contained-in policy, soil that exhibits a characteristic of hazardous waste must be managed as hazardous waste (principle (2)) and, therefore, must comply with LDRs. Note that, once LDRs have attached to soil that exhibits a characteristic of hazardous waste, LDR treatment standards must be met prior to land disposal of the soil, even if the characteristic is subsequently eliminated (principle (3)).

The remainder of today's regulations on application of LDRs to contaminated soil, which are in table form, apply to soil contaminated with listed hazardous wastes. The table lists four scenarios.

In the first scenario, soil is contaminated with untreated listed hazardous waste that was prohibited from land disposal when first land disposed (e.g., prohibited hazardous waste that was illegally placed or prohibited hazardous waste that was spilled). In this case, LDRs have already attached to the hazardous waste. Therefore, since LDRs have attached to the waste and threats have not yet been minimized (i.e., treatment standards have not been met), under principle (3) LDRs continue to apply to the waste and, automatically, to any contaminated soil.[44] The Agency has concluded that LDRs apply to soils contaminated in this way regardless of whether the soil is determined not to (or no longer to) ''contain'' hazardous waste either when first generated or at any time in the future. This conclusion comes from application of principle (3): once something is prohibited from land disposal, LDRs continue to apply until threats to human health and the environment posed by land disposal are minimized regardless of whether the material is at some point determined no longer to be ''hazardous.''

In the next two scenarios, soil is contaminated with hazardous wastes that were not prohibited from land disposal when first land disposed, but, sometime after land disposal, LDRs have gone into effect. In these cases, whether or not LDRs apply to contaminated soil is governed by a determination of whether or not any given volume of contaminated soil ''contains'' hazardous waste at its point of generation. If any given volume of soil is determined to contain hazardous waste at its point of generation, LDRs attach (principles (1) and (2)) and, therefore, the LDR treatment standards must be met prior to placement of such soil in a land disposal unit (principle (3)). If any given volume of soil is determined not to contain hazardous waste at its point of generation, there is no hazardous waste to which a land disposal prohibition could attach and the soil, thus, would not be prohibited from land disposal (principles (1) and (2)). (It would be the same if a hazardous waste land disposed before the effective date of an applicable land disposal prohibition were delisted when first re-generated. In that case too, there would be no hazardous waste to which a land disposal prohibition could attach and the delisted waste, thus, would not be prohibited from land disposal.) Note that, under principle (3), once LDRs attach to contaminated soil, the treatment standards must be met prior to land disposal even if the soil is, subsequently, determined no longer to contain hazardous waste.

The final scenario requires no elaboration; it simply makes clear that if soil is contaminated by hazardous waste that was never prohibited from land disposal, LDRs do not apply. This is through application, primarily, of principle (2)—LDRs attach only to hazardous wastes or soil that contains hazardous waste.

Note that, because LDRs apply to the waste ''contained-in'' soil, and not the soil itself (see principle (2)), LDRs do not apply to soil that is at any time completely separated from its contaminating waste (i.e., the soil contains no solid or hazardous waste, it's ''just soil''). One might determine that soil contained no solid or hazardous waste, for example, if concentrations of hazardous constituents fall below natural background levels or are at non-detectable levels. Such a determination would terminate all RCRA Subtitle C requirements, including LDRs, since waste would not longer be ''contained-in'' the soil. See September 15, 1996 letter from Michael Shapiro (EPA) to Peter Wright (Monsanto Company), making this finding; see also, 61 FR 18806 (April 29, 1996) and other sources cited therein.

The following examples illustrate application of LDRs to contaminated soil:

1. Generator A is excavating soil mildly contaminated with wastewater treatment sludge (listed waste F006). The sludge was land disposed before 1980. The soil does not exhibit a characteristic of hazardous waste and has been determined by an authorized state not to contain listed hazardous waste. The soil is not prohibited from land disposal. This is because, for LDR purposes, the point of generation is when the soil is first excavated from the land (principle (1)). Since no prohibited hazardous waste existed before that time (i.e., the contaminating waste was not prohibited) and the soil does not contain listed hazardous waste or exhibit a characteristic of hazardous waste at its point of generation, there is

[44] EPA is assuming that the waste did not meet a treatment standard when it was placed on the soil. Wastes which meet a treatment standard are no longer prohibited from land disposal and, unless it is determined to ''contain'' hazardous waste at its point of generation and are subsequently land disposed, soils contaminated by these wastes are, likewise, not prohibited from land disposal. See, RCA section 3004(m)(2) (hazardous wastes meeting treatment standards are no longer prohibited from land disposal).

no hazardous waste to which a land disposal prohibition could attach (principle (2)).

2. Generator B is excavating soil contaminated by leaks from a closing hazardous waste surface impoundment. The surface impoundment received listed hazardous wastes K062 (spent pickle liquor) and characteristic hazardous waste D018 (wastes that fail the TCLP test for benzene). The surface impoundment stopped receiving K062 waste in 1987 and D018 waste in 1993. The soil does not exhibit a characteristic of hazardous waste and has been determined by an authorized state not to contain listed hazardous waste. The soil is not prohibited from land disposal. This is because, for LDR purposes, the point of generation is when the soil is first excavated from the land (principle (1)). Since no prohibited hazardous waste existed before that time (i.e., the contaminating wastes were not prohibited) and the soil does not contain listed hazardous waste or exhibit a characteristic of hazardous waste at its point of generation, there is no hazardous waste to which a land disposal prohibition could attach (principle (2)).

3. Generator C is excavating soil contaminated with listed hazardous waste F024. The F024 waste was land disposed after 1991, after it was prohibited from land disposal, and was not first treated to meet applicable land disposal treatment standards (i.e., it was illegally land disposed or accidentally spilled). Since the contaminating waste was prohibited from land disposal and treatment standards were not achieved prior to land disposal, the LDR prohibition continues to apply to any soil contaminated by the waste (principle (3)) regardless of whether the soil ''contains'' hazardous waste when generated. The soil is prohibited from land disposal and, before land disposal, must be treated to meet applicable technology-based treatment standards or until a site-specific, risk-based minimize threat determination is made through the variance process.

4. Generator D is excavating soil contaminated by an accidental spill of benzyl chloride, which, when discarded, is listed hazardous waste P028 and is prohibited from land disposal. The accidental spill occurred yesterday. The contaminating waste was prohibited from land disposal and, since the treatment standards were not achieved prior to the accidental spill, the prohibition continues to apply to any soil contaminated by the waste (principle (3)). Thus, the soil is prohibited from land disposal and, before land disposal, must be treated to meet applicable technology-based treatment standards or until a site-specific, risk-based minimize threat determination is made through the variance process.

5. Generator E is excavating soil contaminated by listed hazardous waste F004 (generally, spent non-halogenated solvents). The F004 waste was land disposed in 1984, prior to the effective date of an applicable land disposal prohibition; however, on generation the soil contains high concentrations of cresols constituents, so that an authorized state determines it ''contains'' hazardous waste. The soil is prohibited from land disposal. Although the contaminating waste was not prohibited from land disposal, since the soil contained hazardous waste at the point of generation (and the waste had since become prohibited from land disposal), the land disposal prohibition attaches to the contaminated soil and, before land disposal, the soil must be treated to meet applicable technology-based treatment standards or until a site-specific, risk-based minimize threat determination is made through the variance process (principles (1), (2), and (3)).

EPA acknowledges that the reading of LDR applicability to contaminated soil discussed above creates potential administrative difficulties, since, in many cases, a factual determination will be required as to when hazardous wastes were land disposed in order to determine whether they were prohibited at that time and whether, therefore, the prohibition continues to apply to contaminated soil. The Agency expects that these difficulties will be minimal because, in most cases, contamination will be caused by hazardous wastes placed before the effective date of applicable land disposal prohibitions since land disposal after prohibition would be illegal. The exception is accidental spills of hazardous waste, which the Agency believes are (1) rare, and (2) known, so determining dates of land disposal should not be problematic. This issue was discussed in detail in the HWIR-Media proposal. 61 FR 18805 (April 26, 1996).

As discussed in the April 29, 1996 proposal, the Agency continues to believe that, if information is not available or inconclusive, it is generally reasonable to assume that contaminated soils do not contain untreated hazardous wastes placed after the effective dates of applicable land disposal prohibitions. This is because placement of untreated hazardous waste after applicable LDR effective dates would be a violation of RCRA, subject to significant fines and penalties including criminal sanctions. 61 FR at 18805 (April 29, 1996). Of course, program implementors and facility owners/operators cannot make the determination that information on the types of waste contamination or dates of waste placement is unavailable or inconclusive without first making a good faith effort to uncover such information. By using available site- and waste-specific information such as manifests, LDR records required under 40 CFR 268.7, vouchers, bills of lading, sales and inventory records, storage records, sampling and analysis reports, accident reports, site investigation reports, spill reports, inspection reports and logs, EPA believes that program implementors and facility owners/operators will typically be able to make informed decisions about the types of waste contamination and dates of waste placement. Most commenters supported this approach.

EPA notes that it is not critical for a decision about whether contaminated soil contains listed hazardous waste or exhibits a characteristic of hazardous waste to be made without removing any of the soil (other than the sample volume) from the land. In an area of generally dispersed soil contamination, soil may be consolidated or managed within the area of contamination to facilitate sampling, for example, to ensure that soil samples are representative or to separate soil from non-soil materials. However, care should be taken not to remove hazardous contaminated soils from separate areas of contamination at a facility and place such hazardous contaminated soil into a land disposal unit unless, of course, the soil meets applicable LDR treatment standards. The area of contamination policy is discussed later in this section of today's preamble.

A few commenters expressed concern or confusion over the application of LDRs to soil contaminated by accidental spills of hazardous wastes. The Agency clarifies that accidental spills of hazardous wastes (or products or raw materials) are not considered placement of hazardous waste into a land disposal unit since, in the case of a spill, prohibited waste is not being placed in one of the identified units named in RCRA Section 3004(m).[45] See, 45 FR 76626 (Nov. 19, 1980), issuing clarifying regulations at 40 CFR 264.10(g) to provide that hazardous waste treatment

[45] Although, if such a spill were not cleaned up in a timely way, EPA or an authorized state could determine that the contaminated area should be considered a land disposal unit for purposes of requiring cleanup under RCRA Subtitle C. 55 FR at 20809 (July 27, 1990).

and storage activities undertaken in immediate response to an accidental spill are exempt from the 40 CFR Part 264 and 265 regulations governing treatment and storage and do not require permits and Sept. 29, 1986 memo from J. Winston Porter (EPA Assistant Administrator) to Fred Hansen interpreting the 40 CFR 264.10(g) regulations; also see, 55 FR at 30808–30809 (July 27, 1990) (''a one-time spill of hazardous waste would not be considered a solid waste management unit.'') However, contaminated soils generated through remediation of spills of untreated listed prohibited hazardous wastes are, as discussed above, subject to land disposal prohibitions since the LDR prohibition that had attached to the contaminating hazardous waste continues to apply until threats are minimized, and, therefore, any contaminated soil remains subject to LDRs (see principle (3)).

A number of commenters expressed concern that EPA's interpretation of LDR applicability to contaminated soil might preclude application of the existing area of contamination policy. In the area of contamination policy, EPA interprets RCRA to allow certain discrete areas of generally dispersed contamination to be considered a RCRA unit (usually a landfill). 55 FR 8758–8760 (March 8, 1999). This interpretation allows hazardous wastes (and hazardous contaminated soils) to be consolidated, treated *in situ* or left in place within an area of contamination without triggering the RCRA land disposal restrictions or minimum technology requirements—since such activities would not involve ''placement into a land disposal unit,'' which is the statutory trigger for LDR. EPA clarifies that its interpretation of LDR applicability for contaminated soil does not, in any way, affect implementation of the area of contamination policy.

Finally, many commenters expressed concern over EPA's application of the LDR treatment standards to soil that is determined no longer to contain hazardous waste or exhibit a characteristic of hazardous waste. As discussed in detail in the 1996 proposal, at this time EPA has concluded that although the Chemical Waste opinion did not speak to contaminated soil specifically, it is prudent to apply the Chemical Waste logic—that a duty to comply with LDRs attaches to hazardous waste when it is first generated and elimination of the indicia of ''hazardousness'' does not, necessarily, fulfil the statutory land disposal restriction treatment standard—to contaminated soil. See Chemical Waste Management v. EPA, 976 F.2d at 13–16. Although, as discussed later in today's preamble, EPA believes that contained-in determinations will rarely, if ever, be made at constituent concentrations which do not minimize threats, without codifying the contained-in policy, the Agency cannot make the generic finding that this will be the case at every site. For this reason, EPA is requiring that the standards and procedures promulgated today for site-specific, risk-based minimize threat variances alone be used to make minimize threat determinations. This issue is discussed in section VII.E of today's preamble.

C. Conforming and Supporting Changes

To support the land disposal restriction treatment standards for contaminated soil, the Agency is today promulgating a number of conforming and supporting regulations, as follows.

1. Recordkeeping Requirements

A number of commenters expressed confusion over the recordkeeping and reporting requirements that would apply to contaminated soil. The Agency is today clarifying that contaminated soil subject to the land disposal restrictions must comply with the same recordkeeping and reporting requirements as other wastes subject to the land disposal restrictions. That is, the recordkeeping and reporting requirements of 40 CFR 268.7 will apply.

EPA has clarified this in the final regulations by adding appropriate recordkeeping requirements for contaminated soils to the tables in 40 CFR 268.7(a) and 40 CFR 268.7(b). These rules specify that, for contaminated soil, generators and/or treaters must include the following information with their land disposal restriction paperwork: the constituents subject to treatment as described in 40 CFR 268.49(d) and this statement, ''this contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by 268.49(c) or the universal treatment standards.'' Note that because in some cases contaminated soil will continue to be subject to LDRs even after it has been determined not to or no longer to contain listed hazardous waste (or de-characterized), the statement includes a notification of whether the soil is still considered hazardous. This is consistent with the approach the Agency used when establishing land disposal restriction treatment standards for hazardous contaminated debris.

2. Definition of Soil

The Agency is promulgating the definition of soil from the April 29, 1996 proposal with one change made in response to comments. Soil is defined as, ''unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the U.S. Soil Conservation Service, or a mixture of such materials with liquids, sludges or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil by volume, based on visual inspection.'' The Agency has added the phrase ''by volume, based on visual inspection'' in response to comments recommending that EPA explicitly conform the definition of soil with the definition of debris. See 57 FR 37222 (August 18, 1992). This clarification is consistent with the Agency's intent, as discussed in the 1996 proposal, that determinations of whether any material was ''soil,'' ''debris,'' or ''waste'' to be made in the field. 61 FR 18794 (April 26, 1996).

The definition of soil includes the concept that mixtures of soil and other materials are to be considered soil provided the mixture is made up predominantly of soil and that the other materials are inseparable using simple physical or mechanical means. This approach allows program implementors and facility owners/operators to determine whether any given material is soil, waste, or debris based on the results of simple mechanical removal processes commonly used to separate materials, such as pumping, dredging, or excavation by backhoe, forklift or other device. It avoids requiring chemical analysis for soil properties in order to differentiate precisely between wastes, soil and debris. As discussed in the April 29, 1996 and September 14, 1993 proposals, the Agency believes that attempting to distinguish more precisely between waste, soil or debris using chemical analysis or other tests would be prohibitively difficult to develop and support and cumbersome to administer. *Cf.* 57 FR at 37224, August 18, 1992, where the Agency adopted a similar classification system for hazardous debris. Most commenters supported this approach. Note that any non-soil that is separated from contaminated soil that contains listed hazardous waste or is found to exhibit a characteristic of hazardous waste should be considered hazardous waste and is subject to the applicable universal treatment standard.

EPA also emphasizes that any dilution of a prohibited contaminated soil (or of a prohibited hazardous waste with soil) as a substitute for adequate treatment to achieve compliance with LDR treatment standards or to circumvent the effective date of an LDR prohibition is considered a type of impermissible dilution and is illegal. Therefore, any deliberate mixing of prohibited hazardous waste with soil in order to change its treatment classification (i.e., from waste to contaminated soil) is illegal. Existing regulations concerning impermissible dilution already make this point. See 40 CFR 268.3(a) and (b); see also 57 FR at 37243 (Aug. 18, 1992) (adopting the same principle for contaminated debris). The Agency expects that deliberate mixing of hazardous waste with soil (and vice versa) will be rare because such actions are clearly illegal and would subject generators to substantial fines and penalties, including criminal sanctions. In addition, the resulting mixture (hazardous waste impermissible diluted by soil) would continue to be subject to the LDRs for the original hazardous waste (i.e., generally, the universal treatment standards), so no benefit in terms of reduced treatment requirements would occur. The Agency took a similar approach when promulgating treatment standards specific to hazardous debris. See 57 FR at 37224 (August 18, 1992).

The Agency notes that the normal mixing of contaminated soil from various portions of a site that typically occurs during the course of remedial activities or in the course of normal earthmoving and grading activities is not considered intentional mixing of soil with non-media or prohibited soil with non-prohibited soil and, therefore, is not a type of impermissible dilution.

D. Seeking Treatment Variances Because the National Treatment Standard is Unachievable or Inappropriate

Under existing regulations at 40 CFR 268.44, people may obtain a variance from a land disposal restriction treatment standard when a waste cannot be treated to the specified level or when a treatment standard may be inappropriate for the waste. With respect to contaminated soils, EPA has to this point presumed that a treatment variance would generally be needed because the LDR treatment standards developed for process wastes were either unachievable (generally applied to soil contaminated by metals) or inappropriate (generally applied to soil contaminated by organic constituents). See, for example, 55 FR 8760 (March 8, 1990); 58 FR 48092, 48125 (September 14, 1993); 61 FR 18805–18808, 18810–18812 (April 29, 1996); and, 61 FR 55717 (October 28, 1996). This presumption will no longer apply once today's soil treatment standards take effect. This is because today's standards were developed specifically for contaminated soils and are intended to specifically address the past difficulties associated with applying the treatment standards developed for process waste to contaminated soil.

This is not to say that treatment variances based on the ''unachievable'' or ''inappropriate'' prongs of the test are now unavailable for contaminated soils. For example, in some cases it may prove that even though an appropriate technology, suited to the soil matrix and constituents of concern was used, a particular soil cannot be treated to meet the soil treatment standards using a well-designed well-operated application of one of the technologies EPA considered in establishing the soil standards. In these types of cases, under existing regulations, the soil treatment standard would be considered ''unachievable'' and a treatment variance could be approved. In other cases, under existing regulations, application of the soil treatment standards might be ''inappropriate'' in that, for example, it would present unacceptable risks to on-site workers.

As noted earlier in today's preamble, alternative LDR treatment standards established through treatment variances must, according to 40 CFR 268.44(m), ''minimize threats to human health and the environment posed by land disposal of the waste.'' In cases where an alternative treatment standard does not meet this requirement, a treatment variance will not be approved even though application of a technology more aggressive than the technologies on which the soil treatment standards are based might then be necessary. For example, in cases where the soil treatment standards cannot be achieved through application of a well-designed, well-operated application of one of the model soil treatment technologies and application of the model technology or other non-combustion technologies will not result in constituent concentrations that minimize threats, a variance would not be approved and combustion would be necessary. This is proper given that the soil treatment standards were not developed using the methodology typically used in the land disposal restriction program (i.e., application of the most aggressive treatment technology to the most difficult to treat waste), but, instead are designed to accommodate a variety of soil treatment technologies that are typically used during remediation. Variances for treatment of contaminated soil will be applied during the remedial context, where, as discussed in Section VII.B.3 of today's preamble, EPA and authorized states will typically have detailed information about the risks posed by specific hazardous constituents, direct and indirect exposure routes, risk pathways and human and environmental receptors. This information can be used to inform decisions about whether threats are minimized.

E. The Contained-In Policy

The contained-in principle is the basis for EPA's longstanding interpretation regarding application of RCRA Subtitle C requirements to mixtures of contaminated media and hazardous wastes. Under the ''contained-in'' policy, EPA requires that soil (and other environmental media), although not wastes themselves, be managed as if they were hazardous waste if they contain hazardous waste or exhibit a characteristic of hazardous waste. See, for example, 53 FR 31138, 31148 (August 17, 1988) and 57 FR 21450, 21453 (May 20, 1992) (inadvertently citing 40 CFR 261(c)(2) instead of 40 CFR 261.3(d)(2)); see also Chemical Waste Management v. EPA, 869 F.2d 1526, 1539–40 (D.C. Cir. 1989) (upholding the contained-in principle as a reasonable interpretation of EPA regulations). In practice, EPA has applied the contained-in principle to refer to a process where a site-specific determination is made that concentrations of hazardous constituents in any given volume of environmental media are low enough to determine that the media does not ''contain'' hazardous waste. Typically, these so called ''contained-in'' determinations do not mean that no hazardous constituents are present in environmental media but simply that the concentrations of hazardous constituents present do not warrant management of the media as hazardous waste.[46] For contaminated soil, the result of ''contained-in determinations'' is that soil no longer ''contains'' a

[46] Of course, as noted earlier, EPA or an authorized state could determine, at any time, that any given volume of environmental media did not contain (or no longer contained) any solid or hazardous waste (i.e., it's just media). These types of determinations might be made, for example, if concentrations of hazardous constituents fall below background levels, or are at non-detectable levels. Such a determination would terminate all RCRA Subtitle C requirements, including LDRs. See, September 15, 1995 letter from Michael Shapiro (EPA) to Peter Wright (Monsanto Company), making this finding, and 61 FR 18806 (April 29, 1996).

hazardous waste; however, as discussed above, the result is not automatically that soil no longer must comply with LDRs.

In order to preserve flexibility and because EPA believes legislative action is needed, the Agency has chosen, at this time, not to go forward with the portions of the September 14, 1993 or April 29, 1996 proposals that would have codified the contained-in policy for contaminated soils. The Agency continues to believe that legislation is needed to address application of certain RCRA subtitle C requirements to hazardous remediation waste, including contaminated soil. If legislation is not forthcoming, the Agency may, in the future, re-examine its position on the relationship of the contained-in policy to site-specific minimize threat determinations based on implementation experience and/or may choose to codify the contained-in policy for contaminated soil in a manner similar to that used to codify the contained-in policy for contaminated debris.

1. Current Guidance on Implementation of the Contained-in Policy

EPA has not, to date, issued definitive guidance to establish the concentrations at which contained-in determinations may be made. As noted above, decisions that media do not or no longer contain hazardous waste are typically made on a case-by-case basis considering the risks posed by the contaminated media. The Agency has advised that contained-in determinations be made using conservative, health-based levels derived assuming direct exposure pathways. 61 FR at 18795 (April 29, 1996) and other sources cited therein. A compilation of many of the Agency's statements on the contained-in policy has been placed in the docket for today's rulemaking.

The land disposal restriction treatment standards for contaminated soil promulgated today do not affect implementation of the contained-in policy. They are not considered, and should not be used, as de facto ''contained-out'' concentrations although, in some cases, it may be appropriate to determine that soil treated to the soil treatment standards no longer contains hazardous waste. Remediation project managers should continue to make contained-in decisions based on site-specific conditions and by considering the risks posed by any given contaminated media.

2. Relationship of the Contained-In Policy to Site-Specific, Risk-Based Minimize Threat Determinations

As discussed above, the D.C. Circuit held in the Chemical Waste opinion that the RCRA Section 3004(m) obligation to minimize threats can continue even after a waste would no longer be identified as ''hazardous.'' Chemical Waste Management v. EPA, 976 F.2d at 13–16. The Agency believes that it is prudent to apply the logic of the Chemical Waste opinion to contaminated soil. Therefore, when the contained-in policy is applied to soil that is already subject to a land disposal prohibition, the Agency is compelled to decide if a determination that soil does not or no longer ''contains'' hazardous waste is sufficient to determine that threats posed by subsequent land disposal of those soils have been minimized. As discussed earlier in today's preamble, EPA is not, at this time, able to make a generic finding that all contained-in determinations will automatically satisfy this standard. This is largely because, for reasons of needed administrative flexibility and because we believe legislation is needed, EPA has not codified standards for approving contained-in determinations and has not codified procedures for making such determinations. Absent such standards and procedures, the Agency cannot, at this time, make a generic finding that all contained-in determinations will result in constituent concentrations that also minimize threats within the meaning of RCRA Section 3004(m). These decisions, of course, could be made on a site-specific basis, by applying the standards and procedures for site-specific, risk-based minimize threat variances, promulgated today.

The regulations governing site-specific, risk-based minimize threat determinations promulgated today are, essentially, the same as the Agency's guidance for making contained-in determinations. See, for example, 61 FR 18795 (April 29, 1996) and other sources cited therein. That is, decisions should be made by considering the inherent risks posed by any given soil, assuming direct exposure (i.e., no post-land disposal controls) and applying conservative information to calculate risk. Therefore, the Agency expects that, in most cases, a determination that soils do not (or no longer) contain hazardous waste will equate with minimize threat levels and, therefore, encourages program implementors to combine contained-in determinations, as appropriate, with site-specific, risk-based minimize threat variances.

F. Relationship of Soil Treatment Standards to the Final HWIR-Media Rule

In the April 29, 1996 HWIR-Media proposal, EPA proposed to establish a comprehensive alternative management regime for hazardous contaminated media, of which the treatment standards for contaminated soil would have been a small part. The HWIR-Media proposal discussed a number of options for comprehensive management standards for hazardous contaminated media.

Today's action resolves and finalizes the portion of the HWIR-Media proposal that addressed land disposal restriction treatment standards for contaminated soil. See 61 FR 18805–18814, April 29, 1996. Other portions of the proposal are not resolved by this action and will be addressed by EPA in future actions. EPA continues to emphasize that, while the soil-specific LDR treatment standards will improve contaminated soil management and expedite cleanups, the Agency also recognizes that additional reform is needed, especially for management of non-media remediation wastes like remedial sludges. The Agency will continue to participate in discussions on potential legislation to promote this additional needed reform.

VIII. Improvements and Corrections to LDR Regulations

Summary: The regulated community has pointed out several examples of the LDR regulations that were unclear or had typographical errors. These sections are clarified and corrected below.

A. Typographical Error in Section 261.1(c)(10)

A typographical error was found in the cross reference in the note in § 261.1(c)(10). The first Phase IV final rule (''Minirule,'' 62 FR 25998) said ''They are covered under the exclusion from the definition of solid waste for shredded circuit boards being recycled (261.4(a)(13)).'' The correct cross reference is to ''(261.4(a)(14).'' This typographical error is corrected in this final rule.

B. Typographical Error in Section 268.4(a)(2)(ii) and (a)(2)(iii)

These paragraphs have referred to § 268.8 for some time. Section 268.8 was where the so called ''soft hammer'' provisions were once found in the regulations. These provisions expired in 1990, and the provisions have been removed from the regulations; thus there is no need to continue to include references to § 268.8.

C. Clarifying Language Added to Section 268.7

The first item in the paperwork tables requires that the EPA Hazardous Waste and Manifest numbers be placed on the notification forms. Today's changes clarify that the manifest number required to be placed on the notification form is that of the first shipment of waste to the treatment or disposal facility.

The tables of paperwork requirements found at § 268.7(a)(4) and (b)(3) have entries that describe what waste constituents have to be identified on the one-time LDR notification (see item 3 in the generator table at § 268.7(a)(4), and item 2 in the treatment and storage facility table at § 268.7(b)(3)). The language of these items has been changed to avoid confusion about whether wastes managed at facilities subject to the Clean Water Act (CWA), CWA-equivalent facilities, or wastes injected into deepwells subject to the Safe Drinking Water Act (SDWA) are subject to a paperwork requirement (and if so, what requirements). Wastes managed in these facilities are subject to a one-time notification requirement. This notification must be placed in the facility's on site files and must contain the information described in the paperwork tables. Therefore, the parenthetical language that appeared to exclude such facilities from the paperwork requirements has been removed from item 2 in the ''Generator'' table, and item 3 in the ''Treatment Facility'' table.

In addition, these items have been further clarified by adding the language ''in characteristic wastes'' after the clause ''and underlying hazardous constituents,'' to indicate exactly what type of wastes must be considered when determining whether underlying hazardous constituents are present. The title of the paperwork table at § 268.7(b)(3) has been changed to clarify that the requirements apply to storage facilities as well as treatment facilities. A number of certifications were inadvertantly removed from § 268.7(b) through Office of Federal Register drafting errors. Those certifications are reinstated because it was never the intention of the Agency that they were removed.

D. Correction to Section 268.40—Treatment Standards for Hazardous Waste

In the Phase III Final Rule (61 FR 15566), the Agency promulgated a UTS of 12.0 mg/L for 1,4-dioxane wastewaters based on the performance of distillation. At that time, 1,4-dioxane was the only UTS constituent for which EPA had promulgated a nonwastewater standard but not a wastewater standard. However, as part of that rule, the Agency failed to extend the treatment standard to wastewater forms of U108 wastes. Today, the Agency is correcting this oversight in Section 268.40—Treatment Standards for Hazardous Wastes, by replacing the ''NA'' designation under AU108 -1,4-Dioxane wastewaters@ with ''12.0 mg/L.'' As such the 1,4-Dioxane alternate treatment standard now applies to both wastewater and nonwastewaters forms of U108 waste.

E. Removal of California List Requirements and de minimis Provision From Section 268.42

In the Phase IV rule promulgated on May 12, 1997, EPA removed the California List requirements because they have all been superseded by more specific treatment standards. The California List included liquid wastes containing certain metals, cyanide, polychlorinated biphenyls (PCBs) above specified levels, and liquid and nonliquid halogenated organic compounds (HOCs) above specified levels. These wastes were removed from the Table of Treatment Standards in § 268.40; however, the requirements in § 268.42(a)(1) and (a)(2) were overlooked. These paragraphs are removed by today's rule. And because these paragraphs are being removed, it is necessary to revise the language of § 268.42(a) to remove references to these paragraphs.

The de minimis provision of paragraph § 268.42(a)(3) is also being removed by today's rule. The de minimis provision applied to wastewaters regulated under the Clean Water Act (CWA) mixed with high total organic carbon (TOC) ignitable wastes. In the Phase III final rule, however, wastes discharged under the CWA, or in a facility that is CWA-equivalent, are not subject to the LDRs (61 FR 15660, April 8, 1996). Therefore the *de minimis* provision was redundant and has been removed by today's rule.

F. Typographical Errors and Outdated Cross-References in Section 268.45

There is a typographical error in § 268.45(a). The language has referred to § 261.3(c)(2), a section removed from the regulations on September 30, 1992 (57 FR 49278). It should refer to § 261.3(f)(2). The correction is being made in this final rule.

In paragraphs (3) and (4) in § 268.45(d) there are outdated cross references to treatment standards that were once found at § 268.42 and § 268.43 (the treatment standards once found in these sections have been consolidated into the ''Table of Treatment Standards'' at § 268.40). These cross references have been removed from § 268.45(d)(3) and (d)(4).

G. Correction to § 268.48 to Explain That Sulfides are not Regulated as Underlying Hazardous Constituents in Characteristic Wastes

In response to a comment received on the original Phase IV proposal, EPA reviewed the basis for the universal treatment standard for sulfides in the Universal Treatment Standard Table at 40 CFR 268.48. EPA is correcting the table in this rule. Sulfides are regulated only in Waste Code F039 (multi-source leachate), and not as underlying hazardous constituents in characteristic wastes.

H. Cross References in Section 268.50(e)

Erroneous references appeared in this section to §§ 268.41, 268.42, 268.43, and 268.32. They are eliminated in this final rule.

I. Mistakes in Appendices VII and VIII

Table 1 includes entries for F033. There is no hazardous waste with the EPA waste code F033. Therefore, these entries are being removed. The second entry for waste codes F032, the second entry for F034, and the first entry for K088 contained typographical errors that are being revised in today's final rule. In addition, two entries for waste code F035 are being added to the table. Table 2 is amended by revising entry number 9 to change the prohibition date for soil and debris contaminated with K088 wastes.

The title of appendix VIII is revised to clarify that it provides the effective dates for wastes injected into deep wells.

J. Clarification Regarding Point of Generation of Boiler Cleanout Rinses

In the May 12, 1997 final Phase IV rule, EPA included in the preamble an interpretive discussion regarding at what point the Agency considers a waste to be generated when power plant boilers are cleaned out using multiple rinses. 62 FR at 26006. The question is relevant to the issue of whether subtitle C rules apply to such waste, and also, if the waste is to be land disposed, whether LDR prohibitions apply. In essence, the interpretation is that the cleanout of the boiler is to be viewed as a single process, so that if the boiler cleanout liquids are commingled in a single tank system, the hazardousness of the resulting cleanout liquids is to be determined at the end of the cleaning process. *Id.*

Some confusion has arisen regarding whether this interpretation applies to permanent storage tanks, or only to temporary tanks brought on-site to manage the boiler cleanout rinses. The Agency's view is that the interpretation applies to temporary tanks, and also to permanent tanks when such units are used exclusively for the management of boiler cleanout during the boiler cleanout process. (Such tanks could, of course, be engaged in other activities when they are not dedicated to management of boiler cleanout waste during the cleanout process.)

EPA did state in the May 12 notice that ''[t]he interpretation * * * does not apply where there are permanent storage units involved.'' 62 FR at 26007. What the Agency had in mind was a tank already engaged in the permanent storage of hazardous waste. However, so long as a tank is dedicated solely to storage of boiler cleanout rinses during the boiler cleanout process, there is no environmental distinction between whether or not a temporary or permanent tank is used for the purpose. Consequently, the point of generation interpretive principle announced in the May 12 notice applies to both permanent and temporary tanks systems.

IX. Capacity Determination for Phase IV Land Disposal Restrictions

A. Introduction

This section summarizes the results of the capacity analysis for the wastes covered by today's rule. For a detailed discussion of capacity analysis-related data sources, methodology, and response to comments for each group of wastes covered in this rule, see the background document for the capacity analysis and the background document for the comment summary and response for capacity-related issues (i.e., collectively referred to as the Capacity Background Documents).

In general, EPA's capacity analysis focuses on the amount of waste to be restricted from land disposal that is currently managed in land-based units and that will require alternative treatment as a result of the LDRs. The quantity of wastes that are not managed in land-based units (e.g., wastewater managed only in RCRA exempt tanks, with direct discharge to a Publicly Owned Treatment Works (POTW)) is not included in the quantities requiring alternative treatment as a result of the LDRs. Also, wastes that do not require alternative treatment (e.g., those that are currently treated using an appropriate treatment technology) are not included in these quantity estimates.

EPA's decisions on when to establish the effective date of the treatment standards (e.g., by granting a national capacity variance) are based on the availability of alternative treatment or recovery technologies. Consequently, the methodology focuses on deriving estimates of the quantities of waste that will require either commercial treatment or the construction of new on-site treatment as a result of the LDRs. EPA also estimates the quantities of waste that will be treated adequately either on site in existing systems or off site by facilities owned by the same company as the generator (i.e., captive facilities), and attempts to subtract that amount from the overall amount of required capacity.

B. Available Capacity for Surface Disposed Wastes

Available capacity was estimated for four treatment technology categories that are expected to be used for the majority of wastes in today's rule: stabilization (including chemical fixation), vitrification, metal recovery, and thermal treatment. (Numerous other types of treatment also can meet the treatment standards for much of these wastes, although the Agency did not find it necessary to present the estimates of available capacity of these treatments. See the Capacity Background Documents for further information.)

1. Stabilization

EPA estimates that there are at least several million mt/yr of available stabilization capacity, with most of it able to meet the treatment requirements for the TC metal wastes and newly identified mineral processing wastes. Furthermore, the Agency found that currently utilized stabilization capacity can be quickly modified (i.e., in less than 90 days) to meet the new treatment standards by implementing relatively simple changes to formulations. For additional details, see the Capacity Background Documents.

2. Vitrification

EPA has determined that vitrification technology is commercially available for treating limited quantities of Phase IV wastes, such as some arsenic wastes, that are difficult to treat using stabilization and other techniques. EPA estimates that there are approximately 15,000 mt/yr of available vitrification capacity.

3. Metal Recovery

High temperature and other types of metal recovery appears to be the most applicable treatment for certain wastes containing high concentrations of metal constituents. EPA identified and reviewed several metal recovery technologies that are commercially available, and has determined that at least 800,000 mt/yr of metal recovery capacity exists.

EPA recognizes, however, that not all of this capacity will be available for Phase IV wastes. For example, there are technical constraints on the metal recovery systems stemming from metal content limitations of the waste. Nevertheless, the Agency believes that a significant portion of this capacity is amenable to Phase IV wastes. For additional details, see the Capacity Background Documents.

4. Thermal Treatment

EPA estimates that there are approximately 231,000 mt/yr of commercial sludge/solid/soil combustion capacity and 651,000 mt/yr of commercial liquid combustion capacity available for wastes covered by today's rule. Other types of thermal treatment, such as thermal desorption, also are available. For additional details, see the Capacity Background Documents.

C. Required Capacity and Variance Determination for Surface Disposed TC Metal Wastes

EPA estimates that at most, 1.2 million mt/yr of TC metal wastes could require alternative treatment as a result of promulgation of today's rule. This estimate includes both wastes that are newly-identified TC wastes (i.e., wastes that do not fail the EP test, and, consequently, were not part of the Third Third LDR rule) and wastes that fail the EP test (i.e., those wastes that were regulated in the Third Third LDR rule). Although only the newly identified TC wastes are eligible for a national capacity variance, the capacity analysis includes all wastes affected by the rule because estimates for each category are not available, and, furthermore, because all of these wastes need to be assessed to determine the full impact of this rule on the need for a capacity variance. Additionally, the 1.2 million estimated quantity is likely to be an overestimate because most of these wastes are already meeting the new treatment standards. Also, most of these wastes are likely to fail the EP test and, therefore, are no longer eligible for a capacity variance.

The wastes that will require alternative treatment are expected to primarily only require optimization of existing stabilization formulations and systems. Also, sufficient vitrification capacity exists to treat the otherwise difficult-to-treat TC metal wastes, high temperature metal recovery capacity

exists for some of the TC metal wastes, and sufficient and other combustion capacity exists to pre-treat TC metal wastes that contain organic underlying hazardous constituents (UHCs). The Agency has determined that these conclusions also apply to TC metal contaminated debris. In addition, the other debris treatment technologies set out in 268.45 are widely available.

For TC metal contaminated soils, the Agency believes that the treatment standards, ten times UTS or 90% reduction, will not result in any capacity problems for treating metals since most soils are already meeting these standards and, furthermore, there is an excess of stabilization treatment capacity. Additionally, for treating organics to the alternative treatment standards, sufficient treatment capacity exists from use of other technologies (e.g., thermal desorption, soil washing, biotreatment).

To allow facilities time to determine whether their wastes are affected by this rule and identify and locate alternative treatment capacity if necessary, EPA is providing 90 days between the publication of today's rule and the effective date of the treatment standards for the TC metal wastes, including soil and debris, covered by today's rule. For a detailed discussion on data sources, methodology, and comments and responses for these wastes, see the Capacity Background Documents.

D. Required Capacity and Variance Determination for Surface Disposed Mineral Processing Wastes

EPA estimates that the maximum quantity of newly identified mineral processing wastes potentially requiring alternative treatment is approximately 1.9 million mt/yr. Most of these wastes (approximately 1.8 million mt/yr) are already being treated to nonhazardous levels and, therefore, are not expected to require much, if any, additional treatment. The remaining wastes, approximately 71,000 mt/yr, will require treatment to meet the treatment standards. However, adequate on-site and off-site treatment capacity is available for these wastes. The Agency has determined that these conclusions also apply to debris contaminated with mineral processing wastes. In addition, the other debris treatment technologies set out in 268.45 are widely available. For soils contaminated with mineral processing wastes, the Agency believes that the treatment standards, ten times UTS or 90 percent reduction, will not result in any capacity problems. Nevertheless, to allow time for activities such as treatment system modifications or to identify and locate alternative treatment capacity for process wastes, soil, and debris, EPA is providing 90 days between the publication of today's rule and the effective date of the treatment standards for the mineral processing wastes, contaminated soil (including MGP soil; see discussion below), and debris covered by today's rule (one exception is the elemental phosphorus wastes; see discussion below). For a detailed discussion on data sources, methodology, and comments and responses for these wastes, see the Capacity Background Documents.

EPA estimates that up to 1.2 million mt/yr of soil contaminated with ''de-Bevilled'' wastes may be remediated from historic manufactured gas plant (MGP) sites. In response to the first supplemental proposal, several commenters stated that more than 50 percent of the MGP remediation sites are currently co-burning the wastes in on-site coal-fired utility boilers and requested the Agency to allow co-burning of MGP soils in coal-fired utility boilers and exclude them from RCRA requirements. In today's rulemaking, the Agency is confirming its existing (and not reopened) interpretation that residues from co-burning hazardous MGP soils along with coal are covered by the Bevill amendment (assuming the residues are not significantly affected by such burning, as provided in section 266.112). In addition, as discussed elsewhere in this notice, the Agency is promulgating treatment standards (ten times UTS or 90 percent reduction) for contaminated soils. On-site treatment and existing commercially available treatment technologies can readily achieve—and to a large extent are already achieving—the treatment standards for contaminated MGP soil. Therefore, the Agency does not anticipate any capacity problems. To allow facilities time to determine whether their wastes are affected by this rule, to identify alternative treatment capacity if necessary, and to make contractual arrangements for transportation and other logistics, EPA is providing 90 days between the publication of today's rule and the effective date of the treatment standards for MGP soils.

In the first supplemental proposed rule, the Agency identified the following three waste streams generated from elemental phosphorus production as lacking sufficient commercial treatment capacity: Medusa scrubber blowdown, Anderson filter media rinsate, and furnace building washdown. A major generator of these waste streams, the FMC Corporation's Pocatello, Idaho facility, provided a substantial amount of data to show that these waste streams pose unique treatability problems (e.g., due the presence of naturally occurring radioactive materials (NORM)) and that a two-year national capacity variance is needed to develop and construct treatment capacity. After careful review of the data, EPA discussed in the May 10, 1996 Notice of Data Availability, the possibility of a two-year national capacity variance for these three large volume wastewater streams. In May 1997, EPA proposed the second supplemental Phase IV rule (62 FR 26041) and, in response to this proposal, FMC submitted a comment to EPA with new information identifying three other waste streams (NOSAP slurry, precipitator slurry, and phossy water) at its Pocatello, Idaho facility that FMC believes would be subject to Phase IV LDR requirements. FMC requested that a two-year national capacity variance also be granted for these three new waste streams. Like the original waste streams, the three newly identified streams are generated in the elemental phosphorous production process and contain varying amounts of both NORM and elemental phosphorous. FMC also noted that the AFM Rinsate waste stream, for which FMC originally requested a national capacity variance, has been completely eliminated, and that therefore a national capacity variance would no longer be needed for this waste stream. The Agency made these additional data available for public comment in a November 10, 1997 NODA (62 FR 60465). No adverse comments were received. The Agency has decided to grant a two-year capacity variance for all five FMC wastestreams.

Details of the methodology and estimates of affected facilities and waste quantities for the newly identified mineral processing wastes are provided in the Capacity Background Documents.

E. Phase IV Mineral Processing and TC Metal Wastes Injected Into Underground Injection Control (UIC) Class I Wells

Summary: EPA is granting a two-year capacity variance for UIC wells that inject newly identified mineral processing wastes from titanium dioxide production.

There are approximately 272 Class I injection well facilities nationwide. The Agency identified approximately 46 of those facilities as potentially injecting Phase IV wastes. These injected Phase IV wastes account for less than 15 percent of the total injectate being managed by Class I wells annually. Most of these facilities potentially identified already have approved no-migration

petitions. In assessing the impact of the Phase IV rule to operators of UIC facilities, the Agency found that the only potentially affected wells are those injecting newly identified characteristic mineral processing wastes, since other characteristic wastewaters were already prohibited in 1990 and the period for possible capacity extensions for these wastes has run out. (See UIC background document explaining in detail why the other wastes are unaffected.)

For a facility with an existing approved no-migration determination, the facility operator may have already incorporated the subject waste in the original petitions. Any facility with an approved no-migration determination without the waste already incorporated may submit a modified petition (40 CFR Part 148.20 (f)). However, if an injection well has received a no-migration determination, it can inject a newly prohibited waste only if the waste is similar to wastes included in the initial no-migration petition. The new wastes must behave hydraulically and chemically in a similar manner to those already included in the initial petition demonstration such that they will not interfere with the containment capability of the injection zone and the location of the waste plume will not significantly differ from the initial demonstration (See 40 CFR 148.20 (f) & UIC Program Guidance # 74)). Based on this information, promulgation of the Phase IV LDRs should have little impact on any facilities with approved petitions.

EPA estimates that approximately five million tons of mineral processing wastes are being disposed annually in UIC wells. Of these, approximately three million tons are attributable to titanium dioxide production from two DuPont facilities. This volume is a conservative estimate based on highly complex, non-segregable waste stream mixtures. This total volume would be subject to the LDR treatment standards. Titanium dioxide (TiO2) production wastes are either generated onsite at facilities with injection wells, or at facilities without injection. For these DuPont facilities, this waste is generated and disposed onsite by injection wells. In order for these facilities to continue injection of this restricted waste, a no-migration petition must be approved to meet the conditions of 40 CFR Part 148.20 of the UIC regulations.

For those facilities disposing restricted Phase IV TiO2 mineral processing waste, their options may be limited to meeting treatment standards (onsite or offsite), submitting a no-migration petition, transporting their waste to a commercial Class I hazardous disposal well facility, or deactivating (diluting) the waste to make it nonhazardous before injection (see RCRA section 3004 (g) (9), a recent amendment which allows such dilution). All of these options are resource intensive and owners/operators of these facilities will be faced with critical economic and business decisions. These TiO2 facilities do not have immediate capability to treat their waste onsite. If they were to opt for treatment onsite, it would require substantial time and resources to build a treatment facility or to substantially modify their existing facility. It would take at least two years (and possibly longer) to construct such a treatment system. In evaluating various disposal alternatives, one DuPont facility is currently constructing a treatment works that will integrate a neutralization project based on current production. As an alternative to deep well injection disposal, the long term construction at this facility has been costly and operational start-up will require additional time to work out issues. See DuPont letter of Feb. 5, 1998.

With respect to the options of managing the waste water offsite, severe practical constraints limit the availability of capacity to these DuPont Ti02 facilities. A typical volume of Ti02 wastewater is 900,000 Gallons (3,750 tons) per day; and peak production volumes are 1 million Gallons (4,167 tons) per day. DuPont letters of Feb. 5 & 20, 1998. At peak production, this would take 200 tanker trucks per day for each affected facility to ship the volume of waste that is currently injected. Additionally, these trucks must be constructed with fiberglass or titanium tanks to be compatible to the low pH-highly corrosive acid waste (Note from ICF to R. E. Smith to RCRA Docket (Feb. 17, 1998)). Indeed, it is not even certain that existing 10, 000 gallon tanker trucks are compatible with this wastestream, due to its weight (the TDS content is so high that a 10, 000 gallon tanker could only be half full) and corrosivity. Dupont letter of Feb. 20, 1998.

Commercial waste management facilities normally cannot feasibly accommodate this daily volume. There are at least ten operating commercial Class I hazardous waste injection facilities nationwide, it is uncertain whether they have the capacity to accept 3 million tons of TiO2 mineral processing waste annually for disposal because of permitting limitations. These commercial wells also have finite capacity limitations. The Agency studied the operational permit parameters of these commercial facilities and found that individual injection and flow capacity rates (UICWELLS Database) may restrict injection of additional high volumes of waste. Rates are scientifically and mathematically determined to avoid damage to the well and the injection zone. Further study of compatibility requirements for these wells suggest that they have acceptable construction for most wastes disposed but not necessarily for the TiO2 production waste in its present concentration. Without pretreatment, these waste characteristics would require a more exotic well construction that is composed of fiberglass injection tubing, titanium casing and packer, epoxy and acid resistance compatible cement.

EPA has also looked at commercial wastewater treatment capacity in the vicinity of the two DuPont facilities. For one facility, there are no available commercial waste water treatment plants within 200 miles. For the other facility, there are two treatment plants within 75 miles but neither has the capacity to accept the high volumes of waste generated by either DuPont facility (based on BSR data). Commercial waste water treatment facilities generally handle corrosive toxic metal waste waters by stabilization and neutralization techniques. Treatment plants managing the Ti02 production waste waters would have to be specially constructed and equipped not only to be amenable to a high volume of acidic waste but also have the capacity to manage the huge amount of solids that will yield from treatment. Thus, wastewater treatment requires having pre-storage and processing units, adequate chemicals to neutralize the corrosive characteristic of the waste and stabilization technology to immobilize the metals before they are either stored onsite, marketed, or landfilled. While the Agency is satisfied that this treatment technology is applicable to Ti02 waste water, there is much reservation whether DuPont's facilities could realistically mobilize 200 tanker trucks per day per facility to safely ship this waste to these treatment facilities even if treatment capacity were readily available at them.

The statute also allows injection of waste waters which no longer exhibit a characteristic into Class I wells without meeting any other LDR treatment standard, and dilution may be used as a means of decharacterizing the waste. RCRA section 3004 (g) (9). However, deactivation of certain characteristic wastes through dilution is not always practical or even feasible. The whole waste stream process may not be amenable to dilution prior to injection

at the wellhead, and the geologic reservoirs into which the wells inject have a finite capacity. Sometimes filling up reservoirs with huge volumes of additional water shortens the life of the well operation because reservoir pressures build up much more quickly and the injection zone becomes ''overpressurized.'' EPA finds that this is the case for the TiO2 wastewater at issue here. Thus, the dilution option cannot be utilized here to find that there is adequate available treatment capacity for these TiO2 wastes.

Capacity analyses usually focus on the demand for alternative capacity once existing on-site capacity and captive off-site capacity have been accounted for. However, capacity also may be unavailable if there is no practical means of utilizing it due to logistical problems. For example, in the Third Third rule, EPA relied on such logistical factors to determine when capacity was realistically available (see 55 FR 22645–22646, June 1, 1990). The Agency noted that injection wells at on-site facilities are directly connected to the plant operations and that in order to realistically arrange for off-site disposition of the waste, the plant managers will need time to make considerable logistical adjustments such as, repiping, retooling, and development of transportation networks at the plant operations. Similarly, for TiO2 waste facilities, the Agency doesn't believe that treatment capacity is available since there is no feasible way for generators to transport their wastes to the treatment facilities at this time, plus all of the other repiping that would be entailed. The Agency believes that it would take at least two years for the TiO2 facilities to alter their operations to ship wastewater to offsite facilities and for off-site facilities to make corresponding changes to their operations to accommodate the large influx of highly corrosive, high volume, dense wastewater (even if off-site facilities were to be willing to accept the waste, which is quite unclear).

Under these circumstances, the Agency finds that there is inadequate treatment, recovery, or disposal capacity presently available for TiO2 injected waste waters currently being injected into Class I hazardous wells, and therefore is granting a two-year national capacity variance for these wastes. The Agency expects that affected generators will utilize this period for applying for no-migration petitions for their existing wells, or to construct on-site wastewater treatment systems.

EPA estimates that there is approximately 2 million tons of other injected Phase IV mineral processing wastes (i.e. from processes other than TiO2 production). One facility with the largest volume of that injected waste has applied for and received an approved no-migration petition thus meeting the conditions of 40 CFR Part 148.20. The rest of these facilities are either applying dilution as a means of decharacterizing their waste (as allowed under Section 3004(g)(9)), or are treating their waste before disposal. Their waste volumes are much less than the TiO2 production waste being injected. Since the volume of wastes is so much less than TiO2, and the wastes are more amenable to conventional management, EPA does not see the same types of difficulties arising, and is therefore not delaying the effective date of the prohibition for these facilities. (See UIC background document).

F. Mixed Radioactive Wastes

Significant uncertainty exists about quantities of mixed radioactive wastes containing wastes that will require treatment as a result of today's rule. Despite this uncertainty, any new commercial capacity that becomes available will be needed for mixed radioactive wastes that were regulated in previous LDR rulemakings and whose variances have already expired. Thus, EPA has determined that sufficient alternative treatment capacity is not available, and therefore is granting a two-year national capacity variance for mixed RCRA/radioactive TC metal wastes that are newly identified (i.e., wastes, soil, or debris identified as hazardous by the TCLP but not the EP), and newly identified characteristic mineral processing wastes including soil and debris.

G. Summary

Table 1 summarizes the capacity variance determination for each category of Phase IV RCRA wastes for which EPA is promulgating LDR treatment standards.

TABLE OF CAPACITY VARIANCES FOR PHASE IV WASTES

[Note: Capacity variances begin from the publication date]

Waste description	Surface-disposed wastes	Deep well-injected wastes
Newly identified wastes from elemental phosphorus processing	Two years	Not applicable.
Newly identified mineral processing wastes from titanium dioxide production	90 days	Two years.
Newly identified TC metal wastes (i.e., wastes identified as hazardous by the TCLP but not the EP), and newly identified characterisitc mineral processing wastes including soil and debris.	90 days	90 days.
Radioactive wastes mixed with newly identified TC metal wastes (i.e., wastes identified as hazardous by the TCLP but not the EP), and mixed with newly identified characteristic mineral processing wastes, including soil and debris.	Two years	Two years.

X. Change to Definition of Solid Waste To Exclude Wood Preserving Wastewaters and Spent Wood Preserving Solutions From RCRA Jurisdiction

Summary: As proposed on May 12, 1997 (FR 62 26055), EPA is today amending the definition of solid waste to exclude wood preserving wastewaters and spent wood preserving solutions from RCRA jurisdiction provided that certain conditions are met, as specified below.

A. Summary of the Proposal

On May 12, 1997 in the Phase IV LDR second supplemental rulemaking, EPA proposed to amend the RCRA regulations to provide an exclusion from the definition of solid waste for certain materials generated and recycled by the wood preserving industry. Specifically, the proposal would exclude certain wood preserving wastewaters and spent wood preserving solutions from classification as solid waste under RCRA. Any wood preserving plant claiming the exclusion for these wastes would need to manage them according to the following criteria: (1) the materials must be recycled and reused on-site in the production process for their original intended purpose; (2) the materials must be managed to prevent release; (3) the plant must assure that the units managing these materials can be visually or otherwise determined to

prevent releases; and (4) drip pads managing these materials must comply with Subpart W drip pad standards regardless of whether the plant has been classified as a conditionally exempt small quantity generator (CESQG) (see 40 CFR 261.5). For a more detailed discussion of these conditions, please consult the relevant sections in the May 12, 1997 proposed rule.

As noted above, the exclusion was to be limited to wood preserving wastewaters and spent wood preserving solutions that are recycled and reused on-site at wood preserving plants in the production process for their original intended purpose. As EPA explained in the proposal, any listed wastewater or spent solution that is not recycled on-site according to the conditions of the exclusion is not excluded from the definition of solid waste. Moreover, the F032, F034 and F035 listings cover wastestreams other than wastewaters and spent solutions. These other listed wastestreams would not be eligible for exclusion even if recycled. This could include materials associated with wastewaters and spent solutions, such as residues that accumulate in a drip pad sump. EPA affirms this scope of the exclusion for the final rule.

It was neither the Agency's intent nor belief that the proposed exclusion would in any way reduce the obligations that wood preserving plants have under 40 CFR Part 264, Subpart W and Part 265, Subpart W, including the requirements for drip pads and the § 264.570(c) and § 265.440(c) requirements under for response to infrequent and incidental drippage in storage yards. The Agency specifically requested comment on whether the proposed exclusion would reduce these requirements. The Agency also sought comment on whether a plant claiming the proposed exclusion should be required to place a notification form to that effect in its files on-site and/or to submit it to either the EPA Regional Administrator or State Director to allow review. Finally, EPA asked for comment concerning the conditions under which the proposed exclusion, once claimed, would no longer apply.

Of course, this exclusion from the definition of solid waste under the federal RCRA statute does not modify any regulatory requirements that are independently imposed under other environmental statutes.

B. Modifications to the Proposal

The Agency received four sets of comments on the proposed exclusion for wood preserving wastewaters and spent wood preserving solutions. While some comments were supportive of the proposal, others were critical of the Agency for, among other things, relinquishing some regulatory oversight of the wood preserving industry. The comments EPA received on the scope of the proposed exclusion and the Agency's response can be found in the docket for this rulemaking. All comments were carefully considered. This section addresses those changes that EPA made to the proposed rule based on comments the Agency received. The next section (''Other Comments'') addresses those aspects of the proposal that, though they remain unchanged by today's rule, require further clarification based on the comments received.

1. Notification

EPA received two responses to its request for comment on whether it was necessary for a plant claiming the proposed exclusion to provide notice to the appropriate regulatory agency and, if so, what type of notice that should be. One commenter suggested that the publication of the exclusion and its effective date by EPA in this final rule would serve as sufficient notice, and that notification on a plant specific basis is unnecessary. EPA does not consider publication of the final rule to provide adequate notice on the names and locations of wood preserving plants planning to operate under the conditional exclusion. Moreover, EPA is concerned that this commenter may have assumed that the exclusion would take effect nationwide upon publication. As explained below in the section titled ''state authorization,'' this is not correct. The exclusion will not take effect in any authorized state unless and until the state adopts it.

The other commenter suggested that it is appropriate for wood preserving plants claiming an exclusion for their recycled wastewaters and spent solutions to notify the appropriate state agency. EPA considers notification to the appropriate regulatory agency to be essential to the proper implementation of this provision. To allow EPA and authorized states to verify that the conditions placed upon today's exclusion are properly met, it is important that wood preserving plants inform the appropriate Regional Administrator or State Director that they are claiming the exclusion and will therefore be reporting significantly lower waste generation totals. EPA is therefore revising the proposed exclusion to require a plant owner or operator (prior to operating pursuant to this exclusion) to submit to the appropriate Regional Administrator or State Director a one-time notification stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: ''I have read the applicable regulation establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation.'' The plant must maintain a copy of that document in its on-site records for a period of no less than 3 years from the date specified in the notice.

2. Conditions Under Which the Exclusion Would No Longer Apply

EPA requested comment on conditions that void the exclusion. Specifically, EPA asked whether a spill should result in the loss of the exclusion just for the spilled material, or also for the wastewaters and spent solutions generated after the spill occurred. EPA received two comments on conditions under which the exclusion, once claimed, would no longer apply. One commenter stated that RCRA regulation should be required for all materials that are spilled or otherwise exit the recycling loop. The other commenter suggested that ''a simple spill . . . is obviously not related to the normal operation of the drip pad . . .'' and should therefore not void the exclusion for wastewaters and spent solutions that are collected and not spilled or released.

EPA agrees with the commenter who took the position that the spilled material itself should be ineligible for the exclusion. The spilled material inherently fails to meet the condition requiring plant operators to manage wastewaters and solutions so as to prevent releases. Although there could potentially be conditions under which a spilled material could still be eligible for the existing exclusions under § 261.4(a)(9)(i) and (ii) following reclamation, such materials are in all cases ineligible for today's new exclusion under § 261.4(a)(9)(iii).

To respond to the second comment, EPA has decided to clarify the effect of a violation of any condition, including the condition prohibiting spills, on wastewaters and spent solutions generated after a violation occurs. EPA has decided that the exclusion should not be available until the plant owner or operator notifies the appropriate regulatory agency, and the agency determines that the problem has been adequately addressed. It is appropriate to impose this requirement even for spills, because the significance of a spill may vary greatly from plant to plant and from incident to incident. EPA hopes

that a reviewing agency would quickly reinstate the exemption after a one-time spill, particularly if small, and would not require specific actions to correct the problem. In contrast, EPA would expect the reviewing agency to require specific actions (such as creation and implementation of a spill prevention plan) for a plant that experienced repeated spills. EPA believes the severity of any violation and the precise actions needed to return the plant to compliance can best be assessed on a case-by-case basis. EPA has added language to the regulation to clarify this issue. It applies to all of the conditions of the exclusion.

C. Other Comments

A number of comments indicated a need for EPA to clarify other aspects of the proposal that the Agency is finalizing today.

1. Oil Borne Facilities

One commenter suggested that the exclusion that EPA is finalizing today applies not only to water borne wood treating plants but also to oil borne wood treating plants. At the time of proposal, EPA intended to create an exclusion only for plants using water borne preservatives. See, for example, the discussion at 63 FR 26057, col. 1. EPA did not evaluate oil borne plants at the time. It is EPA's general understanding that plants which use oil borne preservatives do not recycle wastewaters and spent solutions by using them in the work tank to treat wood. Rather, they reuse these wastewaters in cooling systems, vacuum seals, and other devices. EPA wants to limit today's exclusion to materials that are reused for their original intended purpose—the treatment of wood. EPA has not had time to investigate the jurisdictional and factual issues posed by the use of wastewaters for other, more ancillary purposes. Consequently, EPA is not expanding the exclusion beyond the proposal. It applies only to water borne processes.

2. Application of the Conditions to Units Other Than the Drip Pad

One commenter expressed opposition to ''any language that would extend the EPA's RCRA authority to devices that have previously not been regulated under RCRA.'' In view of this comment, the Agency is prompted to clarify that the conditions for claiming the exclusion must be met with regard to any unit that comes into contact with the recycled wastewaters and spent wood preserving solutions excluded in today's rule.

Thus, sumps or other units that are arguably part of an exempt wastewater treatment unit and that manage wastewaters and spent solutions are subject to these conditions. EPA has already stated that ''management to prevent releases would include, but not necessarily be limited to, compliance with [Subpart W] and maintenance of the sumps receiving the wastewaters and spent solutions from the drip pad and retort to prevent leaching into land and groundwater.'' (62 FR 26057). The Agency must be able to verify that the excluded materials are being managed to prevent release at every step of the recycling process through reclamation to ensure that the basic technical and policy conditions underlying the exclusion are properly met.

3. Relationship of Today's Exclusion to Previous Industry Exclusions

One commenter wanted to assure that today's exclusion would not now regulate units that transmit or store materials that have been excluded according to other, currently existing regulations. EPA does not intend to use today's exclusion to rescind either of the exclusions that the Agency has previously granted the wood preserving industry under §§ 261.4(a)(9)(i) and (ii).

4. Units That May Be Visually or Otherwise Determined to Prevent Release

One commenter expressed concern that the term ''units'' is an overly broad way to refer to those portions of the system subject to RCRA inspection. EPA will now clarify which ''units'' are subject to inspection under the conditions of this exclusion. As mentioned above, all units that come into contact with the excluded materials prior to reclamation must necessarily be subject to verification that they are able to contain these materials in a manner that prevents their release to the environment. This includes, but is not necessarily limited to, any drip pad, sump, retort or conduit that comes into contact with the wastewaters and spent solutions prior to reclamation. This also includes any unit that is arguably part of a plant's wastewater treatment system but that comes into contact with the wastewaters or spent solutions prior to reclamation. An inspector must be able to determine (by visual or other means) whether these units are managing the wastewaters and spent solutions in a manner that prevents release. When relying on a visual inspection (as opposed to a leak detection system or other means), it may be necessary for an inspector to require these units be drained or cleaned for the inspector to make an informed determination as to whether the unit is cracked or leaking.

5. CESQG Status

One commenter also requested EPA to prevent wood preserving plants from becoming conditionally exempt small quantity generators (CESQGs) after claiming the exemption. The commenter was concerned that other, non-excluded wastestreams generated at these plants that are covered by the listings would no longer be subject to any hazardous waste regulation. As explained in more detail in the response to comment document, EPA lacks sufficient information about the volumes of these other wastes and the risks they pose to promulgate a rule creating an exception to the long-established CESQG exemption for them.

D. State Authorization

Upon promulgation, this exclusion will immediately go into effect only for plants in those states and territories that are not currently authorized to implement the RCRA program (i.e., Alaska, Iowa, Hawaii, American Samoa, Northern Mariana Islands, Puerto Rico and Virgin Islands). Plants in these states are subject to the provisions of the federal program. Conversely, any plant located in a RCRA authorized state will be unable to claim the exclusion we are finalizing today unless and until that state amends its regulations to include the exclusion. Because EPA allows state programs to be more stringent than the federal program, it is not necessarily guaranteed that all authorized states will elect to adopt this exclusion.

XI. Clarification of the RCRA Exclusion of Shredded Circuit Boards

In the May 12, 1997 final rule on Land Disposal Restrictions, the Environmental Protection Agency (EPA) excluded shredded circuit boards from the definition of solid waste conditioned on containerized storage prior to recovery. To be covered by this exclusion shredded circuit boards must be free of mercury switches, mercury relays, nickel-cadmium batteries or lithium batteries. On a related issue, current Agency policy states that *whole* circuit boards may meet the definition of scrap metal and therefore be exempt from hazardous waste regulation. In a parenthetical statement in the May 12, 1997 rule, the Agency asserted that whole used circuit boards which contain mercury switches, mercury relays, nickel-cadmium batteries, or lithium batteries also do not meet the definition of scrap metal because mercury (being a liquid metal) and batteries are not within the scope of the

definition of scrap metal. The preamble cited 50 FR 614, 624 (1985).

Members of the electronics industry expressed concern to the Agency about the preamble statement regarding the regulatory status of whole used circuit boards which contain mercury switches, mercury relays, nickel-cadmium batteries, or lithium batteries. The electronics industry indicated that its member have developed a sophisticated asset/materials recovery system to collect and transport whole used circuit boards to processing facilities. The industry explained that the boards are sent to processing facilities for evaluation (continued use, reuse or reclamation) where the switches and the types of batteries are generally removed by persons with the appropriate knowledge and tools for removing these materials. Once these materials are removed from the boards, they become a newly generated waste subject to a hazardous waste determination. If they fail a hazardous waste characteristic, they are handled as hazardous waste, otherwise they are managed as a solid waste. Information was also provided regarding the quantity of mercury on these switches and on the physical state in which they are found on the boards. The information indicates that the mercury switches and relays on circuit boards from some typical applications contain between 0.02–0.08 grams of mercury and are encased in metal which is then coated in epoxy prior to attachment to the boards.

In today's final rule, the Agency recognizes that the preamble statement in the May 12, 1997 final rule is overly broad in that it suggested that the scrap metal exemption would not apply to whole used circuit boards containing the kind of minor battery or mercury switch components and that are being sent for continued use, reuse, or recovery. It is not the Agency's current intent to regulate under RCRA circuit boards containing minimal quantities of mercury and batteries that are protectively packaged to minimize dispersion of metal constituents. Once these materials are removed from the boards, they become a newly generated waste subject to a hazardous waste determination. If they meet the criteria to be classified as a hazardous waste, they must be handled as hazardous waste, otherwise they must be managed as a solid waste.

XII. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ''significant.'' The Order defines a ''significant'' regulatory action as one that ''is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The Agency estimated the costs of today's final rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considered compliance costs and economic impacts for newly identified wastes affected by this rule, as well as media contaminated with these wastes. In addition, the analysis addresses the cost savings associated with the new soil treatment standards being promulgated in today's rule. Newly identified mineral processing wastes covered under this rule include 118 mineral processing wastes identified as potentially characteristically hazardous. Also covered under this rule are TC metal wastes. Today's final rule also covers treatment standards for contaminated media (i.e., soil and sediment). EPA estimates the total cost of the rule to be a savings of $6 million annually, and concludes that this rule is not economically significant according to the definition in E.O. 12866. However, the Agency does consider this rule to be significant for novel policy reasons. The Office of Management and Budget has reviewed this rule.

Detailed discussions of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's proposed rule for newly identified mineral processing wastes, followed by a presentation of the cost, economic impact and benefit results, may be found in the background documents: (1) ''Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Final Rule for Newly Identified Mineral Processing Wastes,'' (2)''Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Final Rule for TC Metal Wastes,'' and (3) ''Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Final Rule for Contaminated Media,'' which were placed in the docket for today's final rule.

1. Methodology Section

The Agency estimated the volumes of waste and contaminated media affected by today's rule to determine the national level incremental costs (for both the baseline and post-regulatory scenarios), economic impacts (including first-order measures such as the estimated percentage of compliance cost to industry or firm revenues), and benefits or risk-screens used to document the inherent hazard of materials being evaluated.

2. Results

a. Volume Results. EPA estimates that there are 29 mineral commodity sectors potentially affected by today's rule, including an estimated 136 facilities that generate 118 streams of newly identified mineral processing secondary materials. The estimated volume for these potentially affected newly identified mineral processing secondary materials is 22 million tons. Also, approximately 1.3 million tons of contaminated soil containing coal tar and other wastes from manufactured gas plants are potentially affected by this rule. As discussed below, EPA does not believe that any TC metal process wastes are potentially affected by today's final rule. EPA estimates that approximately 165,000 tons per year of soil and sediment contaminated with TC metals and approximately 90,000 tons per year of previously regulated contaminated soils is impacted by today's rule.

b. Cost Results For the part of today's final rule that prohibits land storage of mineral processing residues (below the high volume threshold) prior to being recycled, EPA estimates these expected case annualized compliance costs to be $10 million. The cost results for this part of today's final rule are a function of two factors: (1) the expense associated with purchasing new storage units or upgrading existing storage units, and (2) the transfer of some mineral processing residues either from recycling to disposal resulting in increased costs or from disposal to recycling resulting in a cost savings.

For TC metal wastes the Agency believes that there will be no incremental costs associated with stabilization of these wastes from the promulgation of these treatment standards.[47] In addition, EPA believes

[47] One possible exception to this are producers of hazardous waste-derived fertilizers. This is

that there will be no incremental treatment costs for the treatment of TC metal wastes that contain organic underlying hazardous constituents. Based on public comment and data collected from commercial hazardous waste treaters and generators, EPA believes that TC metal wastes are often already treated to these universal treatment standard levels when waste handlers treat to the current treatment standards using bona fide treatment reagents (e.g., portland cement).[48] Therefore, no additional treatment reagent or capital equipment associated with stabilization is required with these wastes.

Previously, EPA had estimated costs to the nonferrous foundry industry associated with complying with today's treatment standards. This estimate was modeled on trisodium phosphate with a ph buffer. When this type of treatment reagent is used, incremental quantities are required to achieve the universal treatment standards for cadmium promulgated in today's rule. However, based on contacts with trade associations and vendors of stabilization equipment, EPA believes that portland cement is equal to or less than the cost of trisodium phosphate and is therefore a more appropriate choice for modeling a compliance baseline from which to estimate the costs of the rule. Unlike trisodium phosphate, portland cement currently being used to meet existing treatment standards has been shown to meet the universal treatment standards without additional reagent. Accordingly, EPA believes that no incremental costs (or benefits) for stabilization are attributable to the promulgation of the universal treatment standards for TC metal wastes.

Although according to the American Foundrymen's Society iron filings are used by many nonferrous foundries as a treatment reagent, for the reasons discussed above under Section III (f), EPA does not believe that iron filings are a legitimate and effective form of treatment. Therefore, the costs of switching from iron filings to another form of treatment reagent such as portland cement is more appropriately characterized as a cost of coming into compliance with already existing treatment standards rather than an incremental cost attributable to today's rule. Although EPA does not believe the cost of switching from iron filings to another treatment reagent is attributable to today's final rule, the Agency has estimated these compliance costs and included this information in the background document ''Regulatory Impact Analysis of the Phase IV Land Disposal Restrictions Final Rule for TC Metal Wastes,'' which was placed in the docket for today's final rule. EPA estimates that the annual cost to nonferrous foundries to switch from iron to portland cement to stabilize hazardous foundry sands is $11.7 million. Results from the risk screen for nonferrous foundry sands are discussed below.

For TC metal hazardous wastes that contain organic underlying hazardous constituents, one commenter has suggested that the Phase IV final rule would result in costs resulting from changing from stabilization of these wastes to incineration. EPA has evaluated data from the National Hazardous Waste Constituent Survey to assess both the prevalence and level of organic underlying hazardous constituents in TC metal wastes (solid and sludges). The results indicate that organic underlying hazardous constituents are rarely present in these wastes. Only seven of 181 TC metal hazardous wastes examined contained organic underlying hazardous constituents. Of these seven, only three contained organics above the Univeral Treatment Standard. None of the three waste steams that contained organics above the Univeral Treatment Standard was present in concentrations high enough to warrant incineration. In short, it is unlikely that organic underlying hazardous constituents will be present in TC metal wastes. And if present, incineration is unlikely to be used to treat these wastes. For reasons, EPA believes that the Phase IV final rule will not result in incremental costs for TC metal wastes containing organic underlying hazardous constituents.

The Agency is also promulgating new soil treatment standards in today's final rule. As these standards are less stringent than those currently required for previously regulated soils, an estimate of the cost savings associated with these standards has been prepared. The total incremental savings estimated for the new soil treatment standards is $25 million per year.

For contaminated soils which exhibit a characteristic for TC metals (including soils containing newly identified mineral processing wastes) but do not contain organic underlying hazardous constituents, there is no incremental cost expected from today's rule. These soils are subject to the new treatment standards which are less stringent than current LDR treatment standards for contaminated soils. The one category of TC hazardous metal contaminated soil that is potentially impacted by today's rule is TC hazardous metal contaminated soil which contains organic underlying hazardous constituents. These soils require additional treatment over that received in the baseline to effectively treat the organic constituents of concern. The Agency estimates that this additional requirement will result in a $3 million per year cost for these wastes, occurring mainly at voluntary cleanups and Superfund sites.

Manufactured gas plant contaminated soils (MGP) are a class of contaminated media that has heretofore not been subject to LDR treatment standards. EPA believes that some incremental costs may result from today's final rule to MGP clean ups involving the use of MGP soils in land applied recycling such as hot or cold mix asphalt, brick and concrete. It is possible that some of these soils will not meet the conditional exemption for waste-derived products that are used in a manner constituting disposal. 40 CFR § 266.20(b). For this reason, it is also possible that owner/operators of these sites may select an alternative remedy such as in-situ treatment or co-burning which are not affected by today's rule. On balance, EPA still believes that the promulgation of new treatment standards will encourage remediation of hazardous soils. The estimated annual costs to owner/operators of MGP sites for selecting remedies that are alternatives to asphalt, brick or concrete recycling are $6.2 million.

c. Economic Impact Results. To estimate potential economic impacts resulting from today's final rule, EPA has used first order economic impacts measures such as the estimated compliance cost of the rule as a percentage of sales/revenues, value added (sales less and material cost) and profit or return on capital. EPA has applied these measures to newly identified mineral processing hazardous wastes.

For recycled mineral processing secondary materials, EPA has evaluated the estimated compliance costs as a percentage of value (i.e. sales), value added and profits of the mineral commodities produced in each sector. In addition EPA has compared estimated compliance costs as a percentage of revenues to specific mineral processing firms to provide additional information on potential impacts.

discussed below under the Regulatory Flexibility section.

[48] December 19, 1996 letter to Anita Cummings, USEPA Office of Solid Waste from Michael G. Fusco, Director of Regulatory Analysis, Rollins Environmental Inc., p.4 of edited draft EPA trip report letter to Rollins Highway 36 facility in Colorado.

Economic impacts from today's rule for mineral processing facilities may or may not be substantial for selected mineral processing sectors depending on the actual storage and management of mineral processing residues prior to being recycled. In the expected case scenario up to 5 of the 29 commodity sectors are expected to incur compliance costs equal to or greater than 1 percent of the economic value of the mineral commodities produced under the Agency's proposed option in today's rule. These sectors include: cadmium, fluorspar and hydrofluoric acid, mercury, selenium and tungsten. The range of percentages in these sectors is between 2 percent (cadmium) and 36 percent (mercury). Because many of these sectors are actually co-processed with other mineral commodity sectors, these impacts may be distributed over the economic value of the other minerals, rather than concentrated solely on the mineral commodity associated with generating the secondary materials. For example, EPA has estimated that today's final rule may affect the cadmium and selenium sectors by imposing incremental costs equal to 18 percent of the value added of those minerals. The value added is equal to the market value of the minerals less the cost of the raw materials (i.e., ore concentrate). Cadmium is a co-product of zinc production and selenium is co-product of copper production; hence, these economic impacts are expected primarily to affect the production of these co-products and the reclamation of their residuals rather than the mineral processing operation as a whole. Because recovery for these co-product residuals is generally less expensive than treatment and disposal, EPA believes that the costs for these residuals will not significantly decrease their recovery although the storage costs could add to the expense.

As stated above, the Agency believes that there are no incremental costs associated with today's final rule for stabilization for handlers of TC metal hazardous wastes. Moreover, the Agency believes that there are no incremental costs associated with TC metal wastes containing organic underlying hazardous constituents may incur costs as described above and corresponding impacts. Accordingly, there is no economic impact for waste handlers managing TC metal wastes.

For TC hazardous foundry sands, EPA also believes that there is no economic impact attributable to today's final rule. As stated above, EPA views the cost associated from switching from iron filings to cement or other treatment reagent are not properly considered attributable to this rulemaking but rather a cost of coming into compliance with existing regulations. Moreover, even if these costs were attributable to this rulemaking, EPA estimates that incremental costs attributable to this switching from iron filings to portland cement are less than one percent of industry revenues and six percent of industry profits and therefore would not create a significant impact to these facilities. More detailed information on this estimate can be found in the regulatory impact analysis placed into today's docket.

As previously stated, EPA does not believe there are incremental costs associated with today's rule for TC hazardous metal contaminated soils except for TC hazardous metal contaminated soils that contain organic underlying hazardous constituents. EPA has evaluated the industries generating these TC metal organometallic soils and has determined that incremental costs from today's final rule do not impose a significant impact.

Similarly, EPA has determined for MGP site clean ups that the economic impact of today's rule is not a significant impact. The estimated percentage of compliance costs to firm sales is less than 1 percent.

d. Individual Risk Estimate Results. The Agency has performed an individual risk analysis to estimate the quantifiable central tendency and high-end hypothetical individual risk for mineral processing secondary materials associated with today's final rule to be above levels of concern for cancer and noncancer risks for specific mineral processing streams in both groundwater and nongroundwater pathways. Results suggest that central tendency and high-end hypothetical individual cancer and non-cancer risks may be decreased below 1×10^{-5} and below a reference dose ratio of 1 in a number of mineral processing facilities. These results are linked primarily with mineral processing liquid secondary materials stored in surface impoundments prior to reuse. The data used to calculate these results are based on the groundwater pathway as well as other potential routes of exposure such as air or surface water. The risk results indicate that the highest individual risks are associated with exposure through groundwater and surface water pathways. These results are also limited to a subset of the mineral processing universe being regulated today where the Agency has collected data from individual mineral processing facilities. EPA also notes that in completing these individual risk results that the entire mass of hazardous constituents available for release in the waste management unit was available for release through each pathway. This could result in overestimation in risks due to double counting of constituent mass. To address this factor, EPA conducted mass balance calculations for all non-groundwater release pathways. These calculations indicate that this potential overestimate would result in negligible bias because only a very small percentage of hazardous constituents in the waste mass is available for release. In addition, EPA did not conduct these mass balance calculations for the groundwater pathway because of limitations in the methodology for which individual groundwater risks were calculated. The Agency believes that the potential bias in risk results for both surface impoundments and waste piles is low.

As stated above the Agency's efforts to evaluate benefits for mineral processing secondary materials were limited to calculations for central tendency and high-end individual risk. However, due to data limitations, the Agency has been unable to evaluate additional more explicit risk-reduction benefits, including populations benefits. In general, the Agency's experience has been that it is unusual to predict high population risks, unless there is an unusually large water well supply impacted by the facility, because ground water contamination generally moves slowly and locally.

Although the regulatory impact analysis completed for today's rule does not address benefits associated with ecological risk reduction and a decrease in natural resource damages, based on a review of available information on damage incidents associated with mining and mineral processing operations [49], the Agency's experience is that, while these types of benefits are extremely difficult to quantify, this rule may produce benefits in the area of ecological risk reduction and reduced natural resource damage.

For TC metals, because the analysis shows that many handlers of TC metal wastes are already meeting the universal treatment standards being promulgated

[49] See Human Health and Environmental Damages from Mining and Mineral Processing Wastes, Technical Background Document Supporting the Supplemental Proposed Rule Applying Phase IV Land disposal Restrictions to Newly Identified Mineral Processing Wastes, U.S. Office of Solid Waste, U.S. Environmental Protection Agency, December 1995; Ecological Risk Assessment Southshore Wetlands for the Kennecott Utah Copper Salt Lake City, Utah. Working Draft March 4, 1996; May 7, 1996 letter from Max H. Dodson, Assistant Regional Administrator for Ecosytem Protection and Remediation, U.S.E.P.A, Region VIII to Michael Sahpiro, Director, Office of Solid Waste, U.S.E.P.A.

in today's rule, EPA does not believe that there are either incremental costs or benefits associated with stabilization of these wastes. However, for TC hazardous nonferrous foundry sands, the Agency has completed a risk screening for groundwater releases of lead and cadmium resulting from the disposal of untreated or poorly treated sands in municipal solid waste landfills. The results of the screen indicate that the probability the lead and cadmium would exceed the action level for lead of 0.015 mg/l or the drinking water standard for cadmium of 0.005 mg/l for untreated foundry sands was approximately 9 percent for lead and 14 percent for cadmium. The risk results also showed that the probability for hazardous foundry sands treated to the universal treatment standard to exceed these standards were approximately 2 percent for lead and 7 percent for cadmium. Because of data limitations, EPA is not able to demonstrate population benefits associated with effective treatment of foundry sands. These risk results do, however, document the intrinsic hazard of the sands and the need for effective treatment of these sands. However, as indicated above, EPA would attribute any public health benefits associated with decreasing lead and cadmium concentrations from foundry sands leachate to coming into compliance with existing regulations rather than promulgation of today's universal treatment standards.

B. Regulatory Flexibility

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. Based on the following discussion, this final rule will not have a significant impact on a substantial number of small entities.

With respect to mineral processing facilities that are small entities, EPA believes that today's final rule will not pose a significant impact to a substantial number of these facilities. EPA identified 22 firms owning 24 mineral processing facilities that are small businesses based on the number of employees in each firm. Under the Agency's proposed option, zero firms out of the 24 identified incurred estimated compliance costs that exceed 1 percent of reported firm revenues.

As discussed above in the cost and economic impact section on TC metal wastes, EPA has determined that treating TC metal wastes will not result in incremental costs to the regulated community. As stated above, data from commercial treaters and generators of TC metal wastes indicate that the wastes are already treated to below UTS levels. Moreover, today's rule will not result in increased costs from incinerating TC metal wastes with organic underlying hazardous constituents. EPA's review of data from commercial hazardous wastes treatment facilities indicates that TC metal wastes with organic underlying hazardous constituents are not prevalent and when present would rarely require incineration.

Finally, after the close of the public comment period, representatives of small business hazardous waste-derived fertilizer producers met with the Agency claiming economic hardship resulting from the Agency's proposed UTS for metal wastes. Under existing 40 CFR § 266.20(b) commercial fertilizers sold for public use must meet treatment standards in order to be placed on the land. Currently all such hazardous waste fertilizers (except for K061–derived fertilizers) are subject to treatment standards for metals at the characteristic level. Based on available information, the Agency has found that out of 10 secondary small business zinc fertilizer producers only two firms in the United States produce a hazardous waste-derived fertilizer, meet the definition of a small business and are subject to this today's rule. Considering a limited range of regulatory responses (such as switching from a hazardous to a non-hazardous source of zinc waste), EPA believes that only one of the two firms could potentially incur a significant economic impact. Because only one firm in this industry is potentially affected by today's rule, EPA does not consider this to be a substantial number of small entitities.

Additionally, there are incremental costs estimated to result from today's rule to facilities undergoing remediation of TC metal contaminated soils and sediments with organic underlying hazardous constituents. EPA estimates that between 34 and 93 small entities would be impacted by these costs. Two firms out of the 93 identified as an upper bound estimate incurred estimated compliance costs that exceed 1 percent of reported firm revenues. Therefore, I certify that this action will not have a significant economic impact on a substantial number of small entities.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), P.L. 104–4, establishes requirements for Federal Agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under Section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate. The rule would not impose any federal intergovernmental mandate because it imposes no enforceable duty upon State, tribal or local governments. States, tribes and local governments would have no compliance costs under this rule. It is expected that states will adopt similar rules, and submit those rules for inclusion in their authorized RCRA programs, but they have no legally enforceable duty to do so. For the same reasons, EPA also has determined that this rule contains no regulatory

requirements that might significantly or uniquely affect small governments. In addition, as discussed above, the private sector is not expected to incur costs exceeding $100 million. EPA has fulfilled the requirement for analysis under the Unfunded Mandates Reform Act.

D. Paperwork Reduction Act

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. EPA has prepared an Information Collection Request (ICR) document: OSWER ICR No. 1442.15 would amend the existing ICR approved under OMB Control No. 2050–0085. This ICR has not been approved by OMB and the information collection requirements, although they are less stringent than those previously required by the EPA, are not enforceable until OMB approves the ICR. EPA will publish a document in the **Federal Register** when OMB approves the information collection requirements showing the valid OMB control number. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

Copies of this ICR may be obtained from Sandy Farmer, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, D.C. 20460 or by calling (202) 260–2740. Include the ICR number in any request.

The Agency has estimated the average information collection burden of this final Phase IV rule to the private sector and the government. The burden of this final rule to the private sector is approximately 4,880 hours over three years, at a cost of $943,942. The burden to EPA is approximately 787 hours over three years, at a cost of $29,841. The term ''burden'means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information; process and maintain information and comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

Send comments on the Agency's burden reduction, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection of techniques to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, D.C. 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence.

XIII. Environmental Justice

A. Applicability of Executive Order 12898

EPA is committed to address environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agencies goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities, and all people live in clean and sustainable communities.

B. Potential Effects

Today's rule covers high-metal wastes (''TC metal wastes,'' hazardous mineral processing wastes, and mineral processing materials). The rule will possibly affect many facilities nationwide, with the potential for impacts to minority or low-income communities. Today's rule is intended to reduce risks to human health and the environment, and to benefit all populations. It is not expected to cause any disproportionate impacts to minority or low income communities versus affluent or non-minority communities.

XIV. State Authority

A. Statutory Authority

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA hazardous waste program within the State. Following authorization, EPA retains enforcement authority under sections 3008 (a)(2), 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR Part 271.

Prior to the Hazardous and Solid Waste Amendments of 1984 (HSWA), a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)) new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. Although States are still required to update their hazardous waste programs, EPA is directed to carry out the HSWA requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization.

Authorized States are required to modify their programs only when EPA promulgates Federal requirements that are more stringent or broader in scope than existing Federal requirements. RCRA section 3009 allows the States to impose standards more stringent than those in the Federal program. See also 40 CFR 271.1(i). Therefore, authorized States can, but do not have to, adopt Federal regulations, both HSWA and non-HSWA, that are considered less stringent. Less stringent regulations, promulgated under both HSWA and non-HSWA authority, do not go into effect in authorized States until those States adopt them and are authorized to implement them.

B. Effect on State Authorization

Today's rule is promulgated in part pursuant to non-HSWA authority, and in part pursuant to HSWA. The more stringent HSWA portions of this rule will become effective at the same time in all states. The new LDR treatment standards for metal-bearing and mineral processing wastes are being promulgated pursuant to section 3004 (g)(4) and (m), provisions added by HSWA. (Note, however, that the treatment standards, even though they are promulgated pursuant to HSWA, will not apply to mineral processing wastes unless the wastes are currently included in the authorized State's

definition of solid waste.) The application of the TCLP to mineral processing wastes likewise implements a HSWA provision, section 3001(g). These requirements are being added to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA, and would take effect in all States, regardless of authorization status. States may apply for final or interim authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble. Table 2 in 40 CFR 271.1(j) is also modified to indicate those provisions of this rule that are self-implementing provisions of HSWA. Note that there are other HSWA provisions that are not more stringent than the current program, such as the revisions to certain of the existing LDR treatment standards. These would not be implemented by EPA in those states authorized for the existing provisions prior to a State being authorized for them. These provisions are further discussed below.

Today's rule contains provisions, both under HSWA and non-HSWA authority, that are less stringent than the current Federal program. First is the non-HSWA provision which would allow mineral processing spent materials being reclaimed within the mineral processing industry sector, or in beneficiation processes, to be excluded from the definition of solid waste. This provision can be adopted at the States' option, although EPA strongly encourages States to adopt this provision. As stated earlier in the preamble, part of the purpose of this rule is to eliminate distinctions among reclaimed spent materials, by-products, and sludges within this industry. This change, in combination with the conditioned exclusion for the reclaimed byproducts and sludges, will result in more control over land-based mineral processing units than exists presently, encourage additional material recovery within the industry, properly control land-based storage of mineral processing industry secondary materials awaiting intra-industry recovery, and also simplify the solid waste regulatory classification scheme. In addition, State adoption of these provisions will provide national consistency.

Similarly, another less stringent non-HSWA provision in this rule excludes from RCRA regulation certain recycled wood preserving wastewaters and spent wood preserving solutions. The exclusion will not be effective in authorized States until they amend their regulations and received authorization. Although the States do not have to adopt these provisions, EPA strongly encourage them to do so, because the exclusion encourages properly conducted material recovery in the wood preserving industry.

Last, the treatment standards for soil contaminated with hazardous waste (and the associated site-specific risk based variance provision for contaminated soils), promulgated under HSWA, are less stringent than the existing treatment standards. Although the authority for these standards is under HSWA, EPA will not implement them in those States that are authorized for the existing standards because they are less stringent. EPA will implement them in those States that are unauthorized for the applicable existing treatment standards. However, EPA strongly encourages States to seek authorization for these standards in order to encourage and speed up cleanups of contaminated sites based on remedies involving treatment of contaminated soils, thus providing more permanent remedial solutions.

Some of today's regulatory amendments are neither more or less stringent than the existing Federal requirements. These are the revisions to the existing UTS numbers. EPA clarified in a December 19, 1994, memorandum (which is in the docket for today's rule) that EPA would not implement the Universal Treatment Standards (promulgated under HSWA authority in the Phase II LDR rule) separately for those States for which the State has received LDR authorization. EPA views changes from the existing limits to be neither more or less stringent since the technology basis of the standards has not changed. Accordingly, EPA will not implement today's amendments to the UTS in those States with authorization for the treatment standards.

Today's rule also clarifies the scrap metal exemption from solid waste as it applies to whole circuit boards. This part of the preamble simply clarifies the Agency's interpretation of the existing rules. If authorized for the scrap metal exemption, States do not need further authorization to interpret their rules in conformity with this interpretation.

C. Authorization Procedures

Because portions of today's rule are promulgated pursuant to HSWA, a State submitting a program modification for those portions may apply to receive interim authorization under RCRA section 3006(g)(2) or final authorization under RCRA section 3006(b), on the basis of requirements that are, respectively, substantially equivalent or equivalent to EPA's. For program modifications for the non-HSWA portions of this rule, States can received final authorization only. The procedures and schedule for final authorization of State program modifications are described in 40 CFR 271.21. It should be noted that all HSWA interim authorizations will expire January 1, 2003. (See 40 CFR 271.24(c) and 57 FR 60132, December 18, 1992.)

Section 271.21(e)(2) requires that States with final authorization modify their programs to reflect Federal program changes and subsequently submit the modification to EPA for approval. The deadline by which the State would have to modify its program to adopt these regulations is specified in section 271.21(e). This deadline can be extended in certain cases (see section 271.21(e)(3)). Once EPA approves the modification, the State requirements become Subtitle C RCRA requirements.

States with authorized RCRA programs may already have requirements similar to those in today's rule. These State regulations have not been assessed against the Federal regulations being promulgated today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, States with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts.

D. Streamlined Authorization Procedures

It is EPA's policy to provide as much flexibility as possible to encourage States to become authorized for rules under the hazardous waste program. EPA discussed an expedited authorization approach in the proposed Phase IV LDR rule (60 FR 43688, August 22, 1995), and the supplemental proposal (61 FR 2338, January 25, 1996). EPA also discussed streamlined authorization procedures in a more comprehensive fashion in the proposed HWIR-media rule (61 FR 18780, April 29, 1996). This expedited approach would apply to those minor or routine changes to the existing program that do not expand the scope of the program in significant ways, and was called Category 1. EPA has decided to address this proposed authorization procedure in the upcoming HWIR-Media rule rather than here, so that the expedited authorization approaches can be dealt with in a comprehensive manner.

XV. Submission to Congress and General Accounting Office

The Congressional Review Act, 5 U.S.C. § 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. § 804(2).

XVI. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045: The Executive Order 13045 applies to any rule that EPA determines (1) ''economically significant'' as defined under Executive Order 12866, and (2) the environmental health or safety risk addressed by the rule has a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This final rule is not subject to E.O. 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks (62FR19885, April 23, 1997), because this is not an economically significant regulatory action as defined by E.O. 12866.

XVII. National Technology Transfer and Advancement Act

Under § 12(d) of the National Technology Transfer and Advancement Act, the Agency is directed to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices, etc.) that are developed or adopted by voluntary consensus standard bodies. Where available and potentially applicable voluntary consensus standards are not used by EPA, the Act requires the Agency to provide Congress, through the Office of Management and Budget, an explanation of the reasons for not using such standards.

EPA is not proposing any new test methods or other technical standards as part of today's final rule. Thus, the Agency has no need to consider the use of voluntary consensus standards in developing this proposed rule.

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 266

Energy, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: April 30, 1998.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, Title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for Part 148 continues to read as follows:

Authority: Secs. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et seq.*

2. Section 148.18 is amended by redesignating paragraphs (a) through (f) as (c) through (h) respectively, and by adding paragraphs (a) and (b) to read as follows:

§ 148.18 Waste specific prohibitions—newly listed and identified wastes.

(a) Effective August 24, 1998, all newly identified D004–D011 wastes and characteristic mineral processing wastes, except those identified in paragraph (b) of this section, are prohibited from underground injection.

(b) Effective May 26, 2000, characteristic hazardous wastes from titanium dioxide mineral processing, and radioactive wastes mixed with newly identified D004–D011 or mixed with newly identified characteristic mineral processing wastes, are prohibited from underground injection.

* * * * *

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Subpart A—General

3. The authority citation for Part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

4. Section 261.2 is amended by revising Table 1 in paragraph (c)(4), paragraph (c)(3) and (e)(1)(iii) to read as follows:

§ 261.2 Definition of solid waste.

* * * * *

(c) * * *

(3) *Reclaimed.* Materials noted with a ''*'' in column 3 of Table 1 are solid wastes when reclaimed (except as provided under 40 CFR 261.4(a)(15)). Materials noted with a ''—'' in column 3 of Table 1 are not solid wastes when reclaimed (except as provided under 40 CFR 261.4(a)(15)).

* * * * *

(4) * * *

TABLE 1

	Use constituting disposal (§ 261.2(c)(1))	Energy recovery/ fuel (§ 261.2(c)(2))	Reclamation (§ 261.2(c)(3)) (except as provided in 261.4(a)(15) for mineral processing secondary materials)	Speculative accumulation (§ 261.2(c)(4))
	1	2	3	4
Spent Materials	(*)	(*)	(*)	(*)
Sludges (listed in 40 CFR Part 261.31 or 261.32	(*)	(*)	(*)	(*)
Sludges exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
By-products (listed in 40 CFR 261.31 or 261.32)	(*)	(*)	(*)	(*)
By-products exhibiting a characteristic of hazardous waste	(*)	(*)	—	(*)
Commercial chemical products listed in 40 CFR 261.33	(*)	(*)	—	—
Scrap metal other than excluded scrap metal (see 261.1(c)(9))	(*)	(*)	(*)	(*)

Note: The terms ''spent materials,'' ''sludges,'' ''by-products,'' and ''scrap metal'' and ''processed scrap metal'' are defined in § 261.1.

* * * * *

(e) * * *

(1) * * *

(iii) In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at § 261.4(a)(15) apply rather than this provision.

* * * * *

5. Section 261.3 is amended by revising paragraphs (a)(2)(i) and (a)(2)(iii) to read as follows:

§ 261.3 Definition of hazardous waste.

(a) * * *

(2) * * *

(i) It exhibits any of the characteristics of hazardous waste identified in subpart C of this part. However, any mixture of a waste from the extraction, beneficiation, and processing of ores and minerals excluded under § 261.4(b)(7) and any other solid waste exhibiting a characteristic of hazardous waste under subpart C is a hazardous waste only if it exhibits a characteristic that would not have been exhibited by the excluded waste alone if such mixture had not occurred, or if it continues to exhibit any of the characteristics exhibited by the non-excluded wastes prior to mixture. Further, for the purposes of applying the Toxicity Characteristic to such mixtures, the mixture is also a hazardous waste if it exceeds the maximum concentration for any contaminant listed in table I to § 261.24 that would not have been exceeded by the excluded waste alone if the mixture had not occurred or if it continues to exceed the maximum concentration for any contaminant exceeded by the nonexempt waste prior to mixture.

* * * * *

(iii) It is a mixture of a solid waste and a hazardous waste that is listed in subpart D of this part solely because it exhibits one or more of the characteristics of hazardous waste identified in subpart C of this part, unless the resultant mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part, or unless the solid waste is excluded from regulation under § 261.4(b)(7) and the resultant mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part for which the hazardous waste listed in subpart D of this part was listed. (However, nonwastewater mixtures are still subject to the requirements of part 268 of this chapter, even if they no longer exhibit a characteristic at the point of land disposal).

* * * * *

6. Section 261.4 is amended by adding paragraphs (a)(9)(iii) and (a)(16) and by revising paragraph (b)(7) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(9) * * *

(iii) Prior to reuse, the wood preserving wastewaters and spent wood preserving solutions described in paragraphs (a)(9)(i) and (a)(9)(ii) of this section, so long as they meet all of the following conditions:

(A) The wood preserving wastewaters and spent wood preserving solutions are reused on-site at water borne plants in the production process for their original intended purpose;

(B) Prior to reuse, the wastewaters and spent wood preserving solutions are managed to prevent release to either land or groundwater or both;

(C) Any unit used to manage wastewaters and/or spent wood preserving solutions prior to reuse can be visually or otherwise determined to prevent such releases;

(D) Any drip pad used to manage the wastewaters and/or spent wood preserving solutions prior to reuse complies with the standards in part 265, subpart W of this chapter, regardless of whether the plant generates a total of less than 100 kg/month of hazardous waste; and

(E) Prior to operating pursuant to this exclusion, the plant owner or operator submits to the appropriate Regional Administrator or State Director a one-time notification stating that the plant intends to claim the exclusion, giving the date on which the plant intends to begin operating under the exclusion, and containing the following language: ''I have read the applicable regulation establishing an exclusion for wood preserving wastewaters and spent wood preserving solutions and understand it requires me to comply at all times with the conditions set out in the regulation.'' The plant must maintain a copy of that document in its on-site records for a period of no less than 3 years from the date specified in the notice. The exclusion applies only so long as the plant meets all of the conditions. If the plant goes out of compliance with any condition, it may apply to the appropriate Regional Administrator or State Director for reinstatement. The Regional Administrator or State Director may reinstate the exclusion upon finding that the plant has returned to compliance with all conditions and that violations are not likely to recur.

* * * * *

(16) Secondary materials (i.e., sludges, by-products, and spent materials as defined in § 261.1) (other than

hazardous wastes listed in subpart D of this part) generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing, provided that:

(i) The secondary material is legitimately recycled to recover minerals, acids, cyanide, water or other values;

(ii) The secondary material is not accumulated speculatively;

(iii) Except as provided in paragraph (a)(15)(iv) of this section, the secondary material is stored in tanks, containers, or buildings meeting the following minimum integrity standards: a building must be an engineered structure with a floor, walls, and a roof all of which are made of non-earthen materials providing structural support (except smelter buildings may have partially earthen floors provided the secondary material is stored on the non-earthen portion), and have a roof suitable for diverting rainwater away from the foundation; a tank must be free standing, not be a surface impoundment (as defined in 40 CFR 260.10), and be manufactured of a material suitable for containment of its contents; a container must be free standing and be manufactured of a material suitable for containment of its contents. If tanks or containers contain any particulate which may be subject to wind dispersal, the owner/operator must operate these units in a manner which controls fugitive dust. Tanks, containers, and buildings must be designed, constructed and operated to prevent significant releases to the environment of these materials.

(iv) The Regional Administrator or the State Director may make a site-specific determination, after public review and comment, that only solid mineral processing secondary materials may be placed on pads, rather than in tanks, containers, or buildings. Solid mineral processing secondary materials do not contain any free liquid. The decision-maker must affirm that pads are designed, constructed and operated to prevent significant releases of the secondary material into the environment. Pads must provide the same degree of containment afforded by the non-RCRA tanks, containers and buildings eligible for exclusion.

(A) The decision-maker must also consider if storage on pads poses the potential for significant releases via groundwater, surface water, and air exposure pathways. Factors to be considered for assessing the groundwater, surface water, air exposure pathways are: the volume and physical and chemical properties of the secondary material, including its potential for migration off the pad; the potential for human or environmental exposure to hazardous constituents migrating from the pad via each exposure pathway, and the possibility and extent of harm to human and environmental receptors via each exposure pathway.

(B) Pads must meet the following minimum standards: be designed of non-earthen material that is compatible with the chemical nature of the mineral processing secondary material, capable of withstanding physical stresses associated with placement and removal, have run on/runoff controls, be operated in a manner which controls fugitive dust, and have integrity assurance through inspections and maintenance programs.

(C) Before making a determination under this paragraph, the Regional Administrator or State Director must provide notice and the opportunity for comment to all persons potentially interested in the determination. This can be accomplished by placing notice of this action in major local newspapers, or broadcasting notice over local radio stations.

(v) The owner or operator provides a notice to the Regional Administrator or State Director, identifying the following information: the types of materials to be recycled; the type and location of the storage units and recycling processes; and the annual quantities expected to be placed in land-based units. This notification must be updated when there is a change in the type of materials recycled or the location of the recycling process.

(vi) For purposes of § 261.4(b)(7), mineral processing secondary materials must be the result of mineral processing and may not include any listed hazardous wastes. Listed hazardous wastes and characteristic hazardous wastes generated by non-mineral processing industries are not eligible for the conditional exclusion from the definition of solid waste.

(b) * * *

(7) Solid waste from the extraction, beneficiation, and processing of ores and minerals (including coal, phosphate rock, and overburden from the mining of uranium ore), except as provided by § 266.112 of this chapter for facilities that burn or process hazardous waste.

(i) For purposes of § 261.4(b)(7) beneficiation of ores and minerals is restricted to the following activities; crushing; grinding; washing; dissolution; crystallization; filtration; sorting; sizing; drying; sintering; pelletizing; briquetting; calcining to remove water and/or carbon dioxide; roasting, autoclaving, and/or chlorination in preparation for leaching (except where the roasting (and/or autoclaving and/or chlorination)/ leaching sequence produces a final or intermediate product that does not undergo further beneficiation or processing); gravity concentration; magnetic separation; electrostatic separation; flotation; ion exchange; solvent extraction; electrowinning; precipitation; amalgamation; and heap, dump, vat, tank, and in situ leaching.

(ii) For the purposes of § 261.4(b)(7), solid waste from the processing of ores and minerals includes only the following wastes as generated:

(A) Slag from primary copper processing;

(B) Slag from primary lead processing;

(C) Red and brown muds from bauxite refining;

(D) Phosphogypsum from phosphoric acid production;

(E) Slag from elemental phosphorus production;

(F) Gasifier ash from coal gasification;

(G) Process wastewater from coal gasification;

(H) Calcium sulfate wastewater treatment plant sludge from primary copper processing;

(I) Slag tailings from primary copper processing;

(J) Fluorogypsum from hydrofluoric acid production;

(K) Process wastewater from hydrofluoric acid production;

(L) Air pollution control dust/sludge from iron blast furnaces;

(M) Iron blast furnace slag;

(N) Treated residue from roasting/ leaching of chrome ore;

(O) Process wastewater from primary magnesium processing by the anhydrous process;

(P) Process wastewater from phosphoric acid production;

(Q) Basic oxygen furnace and open hearth furnace air pollution control dust/sludge from carbon steel production;

(R) Basic oxygen furnace and open hearth furnace slag from carbon steel production;

(S) Chloride process waste solids from titanium tetrachloride production;

(T) Slag from primary zinc processing.

(iii) A residue derived from co-processing mineral processing secondary materials with normal beneficiation raw materials remains excluded under paragraph (b) of this section if the owner or operator:

(A) Processes at least 50 percent by weight normal beneficiation raw materials; and,

(B) Legitimately reclaims the secondary mineral processing materials.

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

7. The authority citation for Part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

8. Section 268.2 is amended by revising paragraph (i) and adding paragraph (k) to read as follows:

§ 268.2 Definitions applicable in this part.

* * * * *

(i) Underlying hazardous constituent means any constituent listed in § 268.48, Table UTS—Universal Treatment Standards, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards.

* * * * *

(k) Soil means unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the U.S. Soil Conservation Service, or a mixture of such materials with liquids, sludges or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil by volume based on visual inspection.

9. Section 268.3 is amended by adding paragraph (d) to read as follows:

§ 268.3 Dilution prohibited as a substitute for treatment.

* * * * *

(d) It is a form of impermissible dilution, and therefore prohibited, to add iron filings or other metallic forms of iron to lead-containing hazardous wastes in order to achieve any land disposal restriction treatment standard for lead. Lead-containing wastes include D008 wastes (wastes exhibiting a characteristic due to the presence of lead), all characteristic wastes containing lead as an underlying hazardous constituent, listed wastes containing lead as a regulated constitutent, and hazardous media containing any of the aforementioned lead-containing wastes.

10. Section 268.4 is amended by revising paragraphs (a)(2)(ii) and (a)(2)(iii) to read as follows:

§ 268.4 Treatment surface impoundment exemption.

(a) * * *

(2) * * *

(ii) Removal. The following treatment residues (including any liquid waste) must be removed at least annually; residues which do not meet the treatment standards promulgated under subpart D of this part; residues which do not meet the prohibition levels established under subpart C of this part or imposed by statute (where no treatment standards have been established); residues which are from the treatment of wastes prohibited from land disposal under subpart C of this part (where no treatment standards have been established and no prohibition levels apply); or residues from managing listed wastes which are not delisted under § 260.22 of this chapter. If the volume of liquid flowing through the impoundment or series of impoundments annually is greater than the volume of the impoundment or impoundments, this flow-through constitutes removal of the supernatant for the purpose of this requirement.

(iii) Subsequent management. Treatment residues may not be placed in any other surface impoundment for subsequent management.

* * * * *

11. Section 268.7 is amended by revising paragraphs (a)(1), (a)(3)(ii), (a)(7), (b)(1), (b)(2), (b)(5) and (b)(6); by revising the first sentence of the paragraphs (a)(2), (a)(3) introductory text, (a)(4), (a)(5) introductory text, (a)(6), and (b)(3) introductory text; by adding paragraph (a)(2)(i) and three sentences to the end of paragraph (b)(4) introductory text and adding paragraphs (b)(4)(iv), (b)(4)(v), and (e) and adding and reserving paragraph (a)(2)(ii); and by revising entries 1 and 3, designating entry 8 as 9, and adding entry 8 in the table entitled ''Generator Paperwork Requirements Table'' in paragraph (a)(4), and by revising entries 1 and 2 designating entry 5 as 6, and adding entry 5 in the table entitled ''Treatment Facility Paperwork Requirements Table'' in paragraph (b)(3)(ii) to read as follows:

§ 268.7 Testing, tracking, and recordkeeping requirements for generators, treaters, and disposal facilities.

(a) * * *

(1) A generator of hazardous waste must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in § 268.40, § 268.45, or § 268.49. This determination can be made in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using test method 1311 in ''Test Methods of Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, as referenced in § 260.11 of this chapter, depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste's extract. In addition, some hazardous wastes must be treated by particular treatment methods before they can be land disposed and some soils are contaminated by such hazardous wastes. These treatment standards are also found in § 268.40, and are described in detail in § 268.42, Table 1. These wastes, and soils contaminated with such wastes, do not need to be tested (however, if they are in a waste mixture, other wastes with concentration level treatment standards would have to be tested). If a generator determines they are managing a waste or soil contaminated with a waste, that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of § 268.9 of this part in addition to any applicable requirements in this section.

(2) If the waste or contaminated soil does not meet the treatment standard: With the initial shipment of waste to each treatment or storage facility, the generator must send a one-time written notice to each treatment or storage facility receiving the waste, and place a copy in the file. * * *

(i) For contaminated soil, the following certification statement should be included, signed by an authorized representative:

I certify under penalty of law that I personally have examined this contaminated soil and it [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

(ii) [Reserved]

(3) If the waste or contaminated soil meets the treatment standard at the original point of generation:

* * * * *

(ii) For contaminated soil, with the initial shipment of wastes to each treatment, storage, or disposal facility, the generator must send a one-time written notice to each facility receiving the waste and place a copy in the file. The notice must include the information in ''268.7(a)(3) of the Generator Paperwork Requirements Table in § 268.7(a)(4).

(4) For reporting, tracking, and recordkeeping when exceptions allow certain wastes or contaminated soil that

do not meet the treatment standards to be land disposed: There are certain exemptions from the requirement that hazardous wastes or contaminated soil meet treatment standards before they can be land disposed. * * *

* * * * *

GENERATOR PAPERWORK REQUIREMENTS TABLE

Required information	§ 268.7 (a)(2)	§ 268.7 (a)(3)	§ 268.7 (a)(4)	§ 268.7 (a)(9)
1. EPA Hazardous Waste Numbers and Manifest Number of first shipment.				
* * * *	*	*		*
3. The waste is subject to the LDRs. The constituents of concern for F001–F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice	✔	.....	.....	.....
* * * *	*	*		*
8. For contaminated soil subject to LDRs as provided in 268.49(a), the constituents subject to treatment as described in 268.49(d), and the following statement: This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with' the soil treatment standards as provided by 268.49(c) or the universal treatment standards.	✔	.....	.....	.....
* * * *	*	*		*

(5) If a generator is managing and treating prohibited waste or contaminated soil in tanks, containers, or containment buildings regulated under 40 CFR 262.34 to meet applicable LDR treatment standards found at § 268.40, the generator must develop and follow a written waste analysis plan which describes the procedures they will carry out to comply with the treatment standards. * * *

* * * * *

(6) If a generator determines that the waste or contaminated soil is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. * * *

(7) If a generator determines that he is managing a prohibited waste that is excluded from the definition of hazardous or solid waste or is exempted from Subtitle C regulation under 40 CFR 261.2 through 261.6 subsequent to the point of generation (including deactivated characteristic hazardous wastes managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified at 40 CFR 261.4(a)(2) or that are CWA-equivalent, or are managed in an underground injection well regulated by the SDWA), he must place a one-time notice describing such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from RCRA Subtitle C regulation, and the disposition of the waste, in the facility's on-site files.

* * * * *

(b) * * *

(1) For wastes or contaminated soil with treatment standards expressed in the waste extract (TCLP), the owner or operator of the treatment facility must test an extract of the treatment residues, using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 as incorporated by reference in § 260.11 of this chapter) to assure that the treatment residues extract meet the applicable treatment standards.

(2) For wastes or contaminated soil with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to assure that they meet the applicable treatment standards.

(3) A one-time notice must be sent with the initial shipment of waste or contaminated soil to the land disposal facility. * * *

* * * * *

(ii) * * *

TREATMENT FACILITY PAPERWORK REQUIREMENTS TABLE

Required information	§ 268.7(b)
1. EPA Hazardous Waste Numbers and Manifest Number of first shipment.	
2. The waste is subject to the LDRs. The constituents of concern for F001–F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.	✔
* * * * * * *	
5. For contaminated soil subject to LDRs as provided in 268.49(a), the constituents subject to treatment as described in 268.49(d) and the following statement, ''this contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit acharacteristic of hazardous waste and [is subject to/complies with] the soil treatment standards as provided by 268.49(c).	✔
* * * * * * *	

(4) * * * A certification is also necessary for contaminated soil and it must state:

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to

comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

* * * * *

(iv) For characteristic wastes that are subject to the treatment standards in § 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in § 268.2(i); are treated on-site to remove the hazardous characteristic; and are then sent off-site for treatment of underlying hazardous constituents, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(v) For characteristic wastes that contain underlying hazardous constituents as defined § 268.2(i) that are treated on-site to remove the hazardous characteristic to treat underlying hazardous constituents to levels in § 268.48 Universal Treatment Standards, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic and that underlying hazardous constituents, as defined in § 268.2(i) have been treated on-site to meet the § 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(5) If the waste or treatment residue will be further managed at a different treatment, storage, or disposal facility, the treatment, storage, or disposal facility sending the waste or treatment residue off-site must comply with the notice and certification requirements applicable to generators under this section.

(6) Where the wastes are recyclable materials used in a manner constituting disposal subject to the provisions of § 268.20(b) regarding treatment standards and prohibition levels, the owner or operator of a treatment facility (i.e., the recycler) is not required to notify the receiving facility, pursuant to paragraph (b)(3) of this section. With each shipment of such wastes the owner or operator of the recycling facility must submit a certification described in paragraph (b)(4) of this section, and a notice which includes the information listed in paragraph (b)(3) of this section (except the manifest number) to the Regional Administrator, or his delegated representative. The recycling facility also must keep records of the name and location of each entity receiving the hazardous waste-derived product.

* * * * *

(e) Generators and treaters who first receive from EPA or an authorized state a determination that a given contaminated soil subject to LDRs as provided in § 268.49(a) no longer contains a listed hazardous waste and generators and treaters who first determine that a contaminated soil subject to LDRs as provided in § 268.49(a) no longer exhibits a characteristic of hazardous waste must:

(1) Prepare a one-time only documentation of these determinations including all supporting information; and,

(2) Maintain that information in the facility files and other records for a minimum of three years.

Subpart C—Prohibitions on Land Disposal

12. Section § 268.34 is revised to read as follows:

§ 268.34 Waste specific prohibitions—toxicity characteristic metal wastes.

(a) Effective August 24, 1998, the following wastes are prohibited from land disposal: the wastes specified in 40 CFR Part 261 as EPA Hazardous Waste numbers D004—D011 that are newly identified (i.e. wastes, soil, or debris identified as hazardous by the Toxic Characteristic Leaching Procedure but not the Extraction Procedure), and waste, soil, or debris from mineral processing operations that is identified as hazardous by the specifications at 40 CFR Part 261.

(b) Effective May 26, 2000, the following wastes are prohibited from land disposal: newly identified characteristic wastes from elemental phosphorus processing; radioactive wastes mixed with EPA Hazardous wastes D004—D011 that are newly identified (i.e. wastes, soil, or debris identified as hazardous by the Toxic Characteristic Leaching Procedure but not the Extraction Procedure); or mixed with newly identified characteristic mineral processing wastes, soil, or debris.

(c) Between May 26, 1998 and May 26, 2000, newly identified characteristic wastes from elemental phosphorus processing, radioactive waste mixed with D004—D011 wastes that are newly identified (i.e. wastes, soil, or debris identified as hazardous by the Toxic Characteristic Leaching Procedure but not the Extraction Procedure), or mixed with newly identified characteristic mineral processing wastes, soil, or debris may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in § 268.5(h)(2) of this part.

(d) The requirements of paragraphs (a) and (b) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under § 268.44; or

(4) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to these wastes covered by the extension.

(e) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents (including underlying hazardous constituents in characteristic wastes) in excess of the applicable Universal Treatment Standard levels of § 268.48 of this part, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.

Subpart D—Treatment Standards

13. Section 268.40 is amended by revising paragraph (e), adding paragraph (h), and revising the Table of Treatment Standards to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

(e) For characteristic wastes (D001—D043) that are subject to treatment standards in the following table ''Treatment Standards for Hazardous Wastes,'' and are not managed in a wastewater treatment system that is regulated under the Clean Water Act (CWA), that is CWA-equivalent, or that is injected into a Class I nonhazardous

deep injection well, all underlying hazardous constituents (as defined in § 268.2(i)) must meet Universal Treatment Standards, found in § 268.48, Table Universal Treatment Standards, prior to land disposal as defined in § 268.2(c) of this part.

* * * * *

(h) Prohibited D004–D011 mixed radioactive wastes and mixed radioactive listed wastes containing metal constituents, that were previously treated by stabilization to the treatment standards in effect at that time and then put into storage, do not have to be re-treated to meet treatment standards in this section prior to land disposal.

BILLING CODE 6560–50–P

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D001 [9]	Ignitable Characteristic Wastes, except for the §261.21(a)(1) High TOC Subcategory.	NA	NA	DEACT and meet §268.48 standards[6]; or RORGS; or CMBST	DEACT and meet §268.48 standards[6]; or RORGS; or CMBST
	High TOC Ignitable Characteristic Liquids Subcategory based on 40 CFR 261.21(a)(1) - Greater than or equal to 10% total organic carbon. (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	RORGS; CMBST; or POLYM
D002 [9]	Corrosive Characteristic Wastes.	NA	NA	DEACT and meet §268.48 standards[6]	DEACT and meet §268.48 standards[6]
D002, D004, D005, D006, D007, D008, D009, D010, D011	Radioactive high level wastes generated during the reprocessing of fuel rods. (Note: This subcategory consists of nonwastewaters only.)	Corrosivity (pH)	NA	NA	HLVIT
		Arsenic	7440-38-2	NA	HLVIT
		Barium	7440-39-3	NA	HLVIT
		Cadmium	7440-43-9	NA	HLVIT
		Chromium (Total)	7440-47-3	NA	HLVIT
		Lead	7439-92-1	NA	HLVIT
		Mercury	7439-97-6	NA	HLVIT
		Selenium	7782-49-2	NA	HLVIT
		Silver	7440-22-4	NA	HLVIT
D003 [9]	Reactive Sulfides Subcategory based on 261.23(a)(5).	NA	NA	DEACT	DEACT
	Explosives Subcategory based on 261.23(a)(6), (7), and (8).	NA	NA	DEACT and meet §268.48 standards[6]	DEACT and meet §268.48 standards[6]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	Unexploded ordnance and other explosive devices which have been the subject of an emergency response.	NA	NA	DEACT	DEACT
	Other Reactives Subcategory based on 261.23(a)(1).	NA	NA	DEACT and meet §268.48 standards[8]	DEACT and meet §268.48 standards[8]
	Water Reactive Subcategory based on 261.23(a)(2), (3), and (4). (Note: This subcategory consists of nonwastewaters only.)	NA	NA	NA	DEACT and meet §268.48 standards[8]
	Reactive Cyanides Subcategory based on 261.23(a)(5).	Cyanides (Total)[7]	57-12-5	Reserved	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
D004 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for arsenic based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Arsenic	7440-38-2	1.4 and meet §268.48 standards[8]	5.0 mg/l TCLP and meet §268.48 standards[8]
D005 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for barium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Barium	7440-39-3	1.2 and meet §268.48 standards[8]	21 mg/l TCLP and meet §268.48 standards[8]
D006 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for cadmium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Cadmium	7440-43-9	0.69 and meet §268.48 standards[8]	0.11 mg/l TCLP and meet §268.48 standards[8]
	Cadmium Containing Batteries Subcategory. (Note: This subcategory consists of nonwastewaters only.)	Cadmium	7440-43-9	NA	RTHRM

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D007 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for chromium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Chromium (Total)	7440-47-3	2.77 and meet §268.48 standards[8]	0.60 mg/l TCLP and meet §268.48 standards[8]
D008 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for lead based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Lead	7439-92-1	0.69 and meet §268.48 standards[8]	0.75 mg/l TCLP and meet §268.48 standards[8]
	Lead Acid Batteries Subcategory (Note: This standard only applies to lead acid batteries that are identified as RCRA hazardous wastes and that are not excluded elsewhere from regulation under the land disposal restrictions of 40 CFR 268 or exempted under other EPA regulations (see 40 CFR 266.80). This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	RLEAD
	Radioactive Lead Solids Subcategory (Note: these lead solids include, but are not limited to, all forms of lead shielding and other elemental forms of lead. These lead solids do not include treatment residuals such as hydroxide sludges, other wastewater treatment residuals, or incinerator ashes that can undergo conventional pozzolanic stabilization, nor do they include organo-lead materials that can be incinerated and stabilized as ash. This subcategory consists of nonwastewaters only.)	Lead	7439-92-1	NA	MACRO
D009 [9]	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that also contain organics and are not incinerator residues. (High Mercury-Organic Subcategory)	Mercury	7439-97-6	NA	IMERC; OR RMERC

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain greater than or equal to 260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC. (High Mercury-Inorganic Subcategory)	Mercury	7439-97-6	NA	RMERC
	Nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are residues from RMERC only. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.20 mg/l TCLP and meet §268.48 standards[8]
	All other nonwastewaters that exhibit, or are expected to exhibit, the characteristic of toxicity for mercury based on the toxicity characteristic leaching procedure (TCLP) in SW846; and contain less than 260 mg/kg total mercury and that are not residues from RMERC. (Low Mercury Subcategory)	Mercury	7439-97-6	NA	0.025 mg/l TCLP and meet §268.48 standards[8]
	All D009 wastewaters.	Mercury	7439-97-6	0.15 and meet §268.48 standards[8]	NA
	Elemental mercury contaminated with radioactive materials. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	AMLGM
	Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory. (Note: This subcategory consists of nonwastewaters only.)	Mercury	7439-97-6	NA	IMERC

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D010 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for selenium based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Selenium	7782-49-2	0.82 and meet §268.48 standards[8]	5.7 mg/l TCLP and meet §268.48 standards[8]
D011 [9]	Wastes that exhibit, or are expected to exhibit, the characteristic of toxicity for silver based on the toxicity characteristic leaching procedure (TCLP) in SW846.	Silver	7440-22-4	0.43 and meet §268.48 standards[8]	0.14 mg/l TCLP and meet §268.48 standards[8]
D012 [9]	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.	Endrin	72-20-8	BIODG; or CMBST	0.13 and meet §268.48 standards[8]
		Endrin aldehyde	7421-93-4	BIODG; or CMBST	0.13 and meet §268.48 standards[8]
D013 [9]	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.	alpha-BHC	319-84-6	CARBN; or CMBST	0.066 and meet §268.48 standards[8]
		beta-BHC	319-85-7	CARBN; or CMBST	0.066 and meet §268.48 standards[8]
		delta-BHC	319-86-8	CARBN; or CMBST	0.066 and meet §268.48 standards[8]
		gamma-BHC (Lindane)	58-89-9	CARBN; or CMBST	0.066 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D014 [9]	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.	Methoxychlor	72-43-5	WETOX or CMBST	0.18 and meet §268.48 standards[8]
D015 [9]	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.	Toxaphene	8001-35-2	BIODG or CMBST	2.6 and meet §268.48 standards[8]
D016 [9]	Wastes that are TC for 2,4-D (2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.	2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	CHOXD, BIODG, or CMBST	10 and meet §268.48 standards[8]
D017 [9]	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.	2,4,5-TP (Silvex)	93-72-1	CHOXD or CMBST	7.9 and meet §268.48 standards[8]
D018 [9]	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.	Benzene	71-43-2	0.14 and meet §268.48 standards[8]	10 and meet §268.48 standards[8]
D019 [9]	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.	Carbon tetrachloride	56-23-5	0.057 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D020 [9]	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033 and meet §268.48 standards[8]	0.26 and meet §268.48 standards[8]
D021 [9]	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.	Chlorobenzene	108-90-7	0.057 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D022 [9]	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.	Chloroform	67-66-3	0.046 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D023 [9]	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.	o-Cresol	95-48-7	0.11 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D024 [9]	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.	m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D025 [9]	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.	p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D026 [9]	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.	Cresol-mixed isomers (Cresylic acid)(sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88 and meet §268.48 standards[8]	11.2 and meet §268.48 standards[8]
D027 [9]	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311.	p-Dichlorobenzene (1,4-Dichlorobenzene)	106-46-7	0.090 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D028 [9]	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.	1,2-Dichloroethane	107-06-2	0.21 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D029 [9]	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.	1,1-Dichloroethylene	75-35-4	0.025 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D030 [9]	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.	2,4-Dinitrotoluene	121-14-2	0.32 and meet §268.48 standards[8]	140 and meet §268.48 standards[8]
D031 [9]	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.	Heptachlor	76-44-8	0.0012 and meet §268.48 standards[8]	0.066 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Heptachlor epoxide	1024-57-3	0.016 and meet §268.48 standards[8]	0.066 and meet §268.48 standards[8]
D032 [9]	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311.	Hexachlorobenzene	118-74-1	0.055 and meet §268.48 standards[8]	10 and meet §268.48 standards[8]
D033 [9]	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.	Hexachlorobutadiene	87-68-3	0.055 and meet §268.48 standards[8]	5.6 and meet §268.48 standards[8]
D034 [9]	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.	Hexachloroethane	67-72-1	0.055 and meet §268.48 standards[8]	30 and meet §268.48 standards[8]
D035 [9]	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.	Methyl ethyl ketone	78-93-3	0.28 and meet §268.48 standards[8]	36 and meet §268.48 standards[8]
D036 [9]	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.	Nitrobenzene	98-95-3	0.068 and meet §268.48 standards[8]	14 and meet §268.48 standards[8]
D037 [9]	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.	Pentachlorophenol	87-86-5	0.089 and meet §268.48 standards[8]	7.4 and meet §268.48 standards[8]
D038 [9]	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.	Pyridine	110-86-1	0.014 and meet §268.48 standards[8]	16 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
D039 [9]	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.	Tetrachloroethylene	127-18-4	0.056 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D040 [9]	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.	Trichloroethylene	79-01-6	0.054 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]
D041 [9]	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,5-Trichlorophenol	95-95-4	0.18 and meet §268.48 standards[8]	7.4 and meet §268.48 standards[8]
D042 [9]	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.	2,4,6-Trichlorophenol	88-06-2	0.035 and meet §268.48 standards[8]	7.4 and meet §268.48 standards[8]
D043 [9]	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.	Vinyl chloride	75-01-4	0.27 and meet §268.48 standards[8]	6.0 and meet §268.48 standards[8]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F001, F002, F003, F004, & F005	F001, F002, F003, F004 and/or F005 solvent wastes that contain any combination of one or more of the following spent solvents: acetone, benzene, n-butyl alcohol, carbon disulfide, carbon tetrachloride, chlorinated fluorocarbons, chlorobenzene, o-cresol, m-cresol, p-cresol, cyclohexanone, o-dichlorobenzene, 2-ethoxyethanol, ethyl acetate, ethyl benzene, ethyl ether, isobutyl alcohol, methanol, methylene chloride, methyl ethyl ketone, methyl isobutyl ketone, nitrobenzene, 2-nitropropane, pyridine, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethylene, trichloromonofluoromethane, and/or xylenes [except as specifically noted in other subcategories]. See further details of these listings in § 261.31	Acetone	67-64-1	0.28	160
		Benzene	71-43-2	0.14	10
		n-Butyl alcohol	71-36-3	5.6	2.6
		Carbon disulfide	75-15-0	3.8	NA
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chlorobenzene	108-90-7	0.057	6.0
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88	11.2
		Cyclohexanone	108-94-1	0.36	NA
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Ethyl acetate	141-78-6	0.34	33
		Ethyl benzene	100-41-4	0.057	10
		Ethyl ether	60-29-7	0.12	160
		Isobutyl alcohol	78-83-1	5.6	170
		Methanol	67-56-1	5.6	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Methylene chloride	75-9-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Nitrobenzene	98-95-3	0.068	14
		Pyridine	110-86-1	0.014	16
		Tetrachloroethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
		Trichloroethylene	79-01-6	0.054	6.0
		Trichloromonofluoromethane	75-69-4	0.020	30
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
	F003 and/or F005 solvent wastes that contain any combination of one or more of the following three solvents as the only listed F001-5 solvents: carbon disulfide, cyclohexanone, and/or methanol. (formerly 268.41(c))	Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
		Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
		Methanol	67-56-1	5.6	0.75 mg/l TCLP
	F005 solvent waste containing 2-Nitropropane as the only listed F001-5 solvent.	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
	F005 solvent waste containing 2-Ethoxyethanol as the only listed F001-5 solvent.	2-Ethoxyethanol	110-80-5	BIODG: or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F007	Spent cyanide plating bath solutions from electroplating operations.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	NA
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process.	Cadmium	7440-43-9	NA	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
F020, F021, F022, F023, F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives, excluding wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F020); (2) pentachlorophenol, or of intermediates used to produce its derivatives (i.e., F021); (3) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F022); and from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of: (1) tri- or tetrachlorophenols, excluding wastes from equipment used only for the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol (F023); (2) tetra-, penta-, or hexachlorobenzenes under alkaline conditions (i.e., F026).	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in §261.31 or §261.32.).	All F024 wastes	NA	CMBST[11]	CMBST[11]
		2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
		3-Chloropropylene	107-05-1	0.036	30
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Hexachloroethane	67-72-1	0.055	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
F025	Condensed light ends from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025 - Light Ends Subcategory	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	Spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. F025 - Spent Filters/Aids and Desiccants Subcategory	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Methylene chloride	75-9-2	0.089	30
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chlorophenols. (This listing does not include formulations containing hexachlorophene synthesized from prepurified 2,4,5-trichlorophenol as the sole component.).	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Wastes Nos. F020, F021, F023, F026, and F027.	HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachlorophenol	87-86-5	0.089	7.4
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with §261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or penta-chlorophenol.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		2-4-Dimethyl phenol	105-67-9	0.036	14
		Fluorene	86-73-7	0.059	3.4
		Hexachlorodibenzo-p-dioxins	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		Hexachlorodibenzofurans	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Pentachlorodibenzo-p-dioxins	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Pentachlorodibenzofurans	NA	0.000035, or CMBST[11]	0.001, or CMBST[11]
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Tetrachlorodibenzo-p-dioxins	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		Tetrachlorodibenzofurans	NA	0.000063, or CMBST[11]	0.001, or CMBST[11]
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Benzo(a)pyrene	50-32-8	0.061	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Fluorene	86-73-7	0.059	3.4
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F037	Petroleum refinery primary oil/water/solids separation sludge-Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air floatation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in §261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological units) and F037, K048, and K051 are not included in this listing.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).	Acenaphthylene	208-96-8	0.059	3.4
		Acenaphthene	83-32-9	0.059	3.4
		Acetone	67-64-1	0.28	160
		Acetonitrile	75-05-8	5.6	NA
		Acetophenone	96-86-2	0.010	9.7
		2-Acetylaminofluorene	53-96-3	0.059	140
		Acrolein	107-02-8	0.29	NA
		Acrylonitrile	107-13-1	0.24	84
		Aldrin	309-00-2	0.021	0.066
		4-Aminobiphenyl	92-67-1	0.13	NA
		Aniline	62-53-3	0.81	14
		Anthracene	120-12-7	0.059	3.4
		Aramite	140-57-8	0.36	NA
		alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.066
		gamma-BHC	58-89-9	0.0017	0.066
		Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Bromodichloromethane	75-27-4	0.35	15
		Methyl bromide (Bromomethane)	74-83-9	0.11	15
		4-Bromophenyl phenyl ether	101-55-3	0.055	15
		n-Butyl alcohol	71-36-3	5.6	2.6
		Butyl benzyl phthalate	85-68-7	0.017	28
		2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
		Carbon disulfide	75-15-0	3.8	NA
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		p-Chloroaniline	106-47-8	0.46	16
		Chlorobenzene	108-90-7	0.057	6.0
		Chlorobenzilate	510-15-6	0.10	NA
		2-Chloro-1,3-butadiene	126-99-8	0.057	NA
		Chlorodibromomethane	124-48-1	0.057	15
		Chloroethane	75-00-3	0.27	6.0
		bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		Chloroform	67-66-3	0.046	6.0
		bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
		p-Chloro-m-cresol	59-50-7	0.018	14
		Chloromethane (Methyl chloride)	74-87-3	0.19	30
		2-Chloronaphthalene	91-58-7	0.055	5.6
		2-Chlorophenol	95-57-8	0.044	5.7
		3-Chloropropylene	107-05-1	0.036	30
		Chrysene	218-01-9	0.059	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cyclohexanone	108-94-1	0.36	NA
		1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
		Dibromomethane	74-95-3	0.11	15

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10
		o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
		o,p'-DDE	3424-82-6	0.031	0.087
		p,p'-DDE	72-55-9	0.031	0.087
		o,p'-DDT	789-02-6	0.0039	0.087
		p,p'-DDT	50-29-3	0.0039	0.087
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Dibenz(a,e)pyrene	192-65-4	0.061	NA
		m-Dichlorobenzene	541-73-1	0.036	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Dichlorodifluoromethane	75-71-8	0.23	7.2
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		trans-1,2-Dichloroethylene	156-60-5	0.054	30
		2,4-Dichlorophenol	120-83-2	0.044	14
		2,6-Dichlorophenol	87-65-0	0.044	14
		1,2-Dichloropropane	78-87-5	0.85	18

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
		Dieldrin	60-57-1	0.017	0.13
		Diethyl phthalate	84-66-2	0.20	28
		2-4-Dimethyl phenol	105-67-9	0.036	14
		Dimethyl phthalate	131-11-3	0.047	28
		Di-n-butyl phthalate	84-74-2	0.057	28
		1,4-Dinitrobenzene	100-25-4	0.32	2.3
		4,6-Dinitro-o-cresol	534-52-1	0.28	160
		2,4-Dinitrophenol	51-28-5	0.12	160
		2,4-Dinitrotoluene	121-14-2	0.32	140
		2,6-Dinitrotoluene	606-20-2	0.55	28
		Di-n-octyl phthalate	117-84-0	0.017	28
		Di-n-propylnitrosamine	621-64-7	0.40	14
		1,4-Dioxane	123-91-1	12.0	170
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	NA
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	NA
		1,2-Diphenylhydrazine	122-66-7	0.087	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Disulfoton	298-04-4	0.017	6.2
		Endosulfan I	939-98-8	0.023	0.066
		Endosulfan II	33213-6-5	0.029	0.13
		Endosulfan sulfate	1031-07-8	0.029	0.13
		Endrin	72-20-8	0.0028	0.13
		Endrin aldehyde	7421-93-4	0.025	0.13
		Ethyl acetate	141-78-6	0.34	33
		Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
		Ethyl benzene	100-41-4	0.057	10
		Ethyl ether	60-29-7	0.12	160
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Ethyl methacrylate	97-63-2	0.14	160
		Ethylene oxide	75-21-8	0.12	NA
		Famphur	52-85-7	0.017	15
		Fluoranthene	206-44-0	0.068	3.4
		Fluorene	86-73-7	0.059	3.4
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
		Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		Hexachloroethane	67-72-1	0.055	30
		Hexachloropropylene	1888-71-7	0.035	30
		Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
		Iodomethane	74-88-4	0.19	65
		Isobutyl alcohol	78-83-1	5.6	170
		Isodrin	465-73-6	0.021	0.066
		Isosafrole	120-58-1	0.081	2.6
		Kepone	143-50-8	0.0011	0.13
		Methacrylonitrile	126-98-7	0.24	84
		Methanol	67-56-1	5.6	NA
		Methapyrilene	91-80-5	0.081	1.5
		Methoxychlor	72-43-5	0.25	0.18
		3-Methylcholanthrene	56-49-5	0.0055	15
		4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Methyl methacrylate	80-62-6	0.14	160
		Methyl methansulfonate	66-27-3	0.018	NA
		Methyl parathion	298-00-0	0.014	4.6
		Naphthalene	91-20-3	0.059	5.6
		2-Naphthylamine	91-59-8	0.52	NA
		p-Nitroaniline	100-01-6	0.028	28
		Nitrobenzene	98-95-3	0.068	14
		5-Nitro-o-toluidine	99-55-8	0.32	28
		p-Nitrophenol	100-02-7	0.12	29
		N-Nitrosodiethylamine	55-18-5	0.40	28
		N-Nitrosodimethylamine	62-75-9	0.40	NA
		N-Nitroso-di-n-butylamine	924-16-3	0.40	17
		N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
		N-Nitrosomorpholine	59-89-2	0.40	2.3
		N-Nitrosopiperidine	100-75-4	0.013	35
		N-Nitrosopyrrolidine	930-55-2	0.013	35
		Parathion	56-38-2	0.014	4.6
		Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
		Pentachlorobenzene	608-93-5	0.055	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		Pentachloronitrobenzene	82-68-8	0.055	4.8
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenacetin	62-44-2	0.081	16
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Phorate	298-02-2	0.021	4.6
		Phthalic anhydride	85-44-9	0.055	NA
		Pronamide	23950-58-5	0.093	1.5
		Pyrene	129-00-0	0.067	8.2
		Pyridine	110-86-1	0.014	16
		Safrole	94-59-7	0.081	22
		Silvex (2,4,5-TP)	93-72-1	0.72	7.9
		2,4,5-T	93-76-5	0.72	7.9
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
		Toluene	108-88-3	0.080	10
		Toxaphene	8001-35-2	0.0095	2.6
		Bromoform (Tribromomethane)	75-25-2	0.63	15
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
		Trichloromonofluoromethane	75-69-4	0.020	30
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		1,2,3-Trichloropropane	96-18-4	0.85	30
		1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
		tris(2,3-Dibromopropyl) phosphate	126-72-7	0.11	NA
		Vinyl chloride	75-01-4	0.27	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Barium	7440-39-3	1.2	21 mg/l TCLP
		Beryllium	7440-41-7	0.82	NA
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	NA
		Fluoride	16964-48-8	35	NA
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
		Sulfide	8496-25-8	14	NA
		Thallium	7440-28-0	1.4	NA
		Vanadium	7440-62-2	4.3	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K005	Wastewater treatment sludge from the production of chrome green pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
	Wastewater treatment sludge from the production of chrome oxide green pigments (hydrated).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K007	Wastewater treatment sludge from the production of iron blue pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
K008	Oven residue from the production of chrome oxide green pigments.	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	Chloroform	67-66-3	0.046	6.0
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Acetonitrile	75-05-8	5.6	38
		Acrylonitrile	107-13-1	0.24	84
		Acrylamide	79-06-1	19	23

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzene	71-43-2	0.14	10
		Cyanide (Total)	57-12-5	1.2	590
K015	Still bottoms from the distillation of benzyl chloride.	Anthracene	120-12-7	0.059	3.4
		Benzal chloride	98-87-3	0.055	6.0
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Phenanthrene	85-01-8	0.059	5.6
		Toluene	108-88-3	0.080	10
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		1,2-Dichloropropane	78-87-5	0.85	18
		1,2,3-Trichloropropane	96-18-4	0.85	30
K018	Heavy ends from the fractionation column in ethyl chloride production.	Chloroethane	75-00-3	0.27	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Chloromethane	74-87-3	0.19	NA
		1,1-Dichloroethane	75-34-3	0.059	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		p-Dichlorobenzene	106-46-7	0.090	NA
		1,2-Dichloroethane	107-06-2	0.21	6.0
		Fluorene	86-73-7	0.059	NA
		Hexachloroethane	67-72-1	0.055	30
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	NA
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,1-Trichloroethane	71-55-6	0.054	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	Toluene	108-88-3	0.080	10
		Acetophenone	96-86-2	0.010	9.7
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		Phenol	108-95-2	0.039	6.2
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	NA	NA	LLEXT fb SSTRP fb CARBN; or CMBST	CMBST
K026	Stripping still tails from the production of methyl ethyl pyridines.	NA	NA	CMBST	CMBST
K027	Centrifuge and distillation residues from toluene diisocyanate production.	NA	NA	CARBN; or CMBST	CMBST
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	1,1-Dichloroethane	75-34-3	0.059	6.0
		trans-1,2-Dichloroethylene	156-60-5	0.054	30
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	NA	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Cadmium	7440-43-9	0.69	NA
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Chloroform	67-66-3	0.046	6.0
		1,2-Dichloroethane	107-06-2	0.21	6.0
		1,1-Dichloroethylene	75-35-4	0.025	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
		Vinyl chloride	75-01-4	0.27	6.0
K030	Column bodies or heavy ends from the combined production of trichloroethylene and perchloroethylene.	o-Dichlorobenzene	95-50-1	0.088	NA
		p-Dichlorobenzene	106-46-7	0.090	NA
		Hexachlorobutadiene	87-68-3	0.055	5.6
		Hexachloroethane	67-72-1	0.055	30
		Hexachloropropylene	1888-71-7	NA	30
		Pentachlorobenzene	608-93-5	NA	10
		Pentachloroethane	76-01-7	NA	6.0
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K031	By-product salts generated in the production of MSMA and cacodylic acid.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K032	Wastewater treatment sludge from the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
		Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
K035	Wastewater treatment sludges generated in the production of creosote.	Acenaphthene	83-32-9	NA	3.4
		Anthracene	120-12-7	NA	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Dibenz(a,h)anthracene	53-70-3	NA	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Fluorene	86-73-7	NA	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	NA	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Pyrene	129-00-0	0.067	8.2
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
K037	Wastewater treatment sludges from the production of disulfoton.	Disulfoton	298-04-4	0.017	6.2
		Toluene	108-88-3	0.080	10
K038	Wastewater from the washing and stripping of phorate production.	Phorate	298-02-2	0.021	4.6
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.	NA	NA	CARBN; or CMBST	CMBST
K040	Wastewater treatment sludge from the production of phorate.	Phorate	298-02-2	0.021	4.6
K041	Wastewater treatment sludge from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	2,4-Dichlorophenol	120-83-2	0.044	14
		2,6-Dichlorophenol	187-65-0	0.044	14
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
		2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Pentachlorophenol	87-86-5	0.089	7.4
		Tetrachloroethylene	127-18-4	0.056	6.0
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	NA	NA	DEACT	DEACT
K045	Spent carbon from the treatment of wastewater containing explosives.	NA	NA	DEACT	DEACT
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Lead	7439-92-1	0.69	0.75 mg/l TCLP
K047	Pink/red water form TNT operations	NA	NA	DEACT	DEACT
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	218-01-9	0.059	3.4
		Di-n-butyl phthalate	84-74-2	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-33	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP
K049	Slop oil emulsion solids from the petroleum refining industry.	Anthracene	120-12-7	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Carbon disulfide	75-15-0	3.8	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Chrysene	2218-01-9	0.059	3.4
		2,4-Dimethylphenol	105-67-9	0.036	NA
		Ethylbenzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Benzo(a)pyrene	50-32-8	0.061	3.4
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K051	API separator sludge from the petroleum refining industry.	Acenaphthene	83-32-9	0.059	NA
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		Chrysene	2218-01-9	0.059	3.4
		Di-n-butyl phthalate	105-67-9	0.057	28
		Ethylbenzene	100-41-4	0.057	10
		Fluorene	86-73-7	0.059	NA
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Cyanides (Total)[7]	57-12-5	1.2	590
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K052	Tank bottoms (leaded) from the petroleum refining industry.	Benzene	71-43-2	0.14	10
		Benzo(a)pyrene	50-32-8	0.061	3.4
		o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		2,4-Dimethylphenol	105-67-9	0.036	NA
		Ethylbenzene	100-41-4	0.057	10
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Toluene	108-88-3	0.08	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	NA
		Nickel	7440-02-0	NA	11 mg/l TCLP
K060	Ammonia still lime sludge from coking operations.	Benzene	71-43-2	0.14	10

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.	Antimony	7440-36-0	NA	1.15 mg/l TCLP
		Arsenic	7440-38-2	NA	5.0 mg/l TCLP
		Barium	7440-39-3	NA	21 mg/l TCLP
		Beryllium	7440-41-7	NA	1.22 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	NA	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	NA	5.7 mg/l TCLP
		Silver	7440-22-4	NA	0.14 mg/l TCLP
		Thallium	7440-28-0	NA	0.20 mg/l TCLP
		Zinc	7440-66-6	NA	4.3 mg/l TCLP
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K069	Emission control dust/sludge from secondary lead smelting. - Calcium Sulfate (Low Lead) Subcategory	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
	Emission control dust/sludge from secondary lead smelting. - Non-Calcium Sulfate (High Lead) Subcategory	NA	NA	NA	RLEAD
K071	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used) nonwastewaters that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	K071 (Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.) nonwastewaters that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All K071 wastewaters.	Mercury	7439-97-6	0.15	NA
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachloroethane	67-72-1	0.055	30
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,1-Trichloroethane	71-55-6	0.054	6.0
K083	Distillation bottoms from aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		Cyclohexanone	108-94-1	0.36	NA
		Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Nickel	7440-02-0	3.98	11 mg/l TCLP
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		m-Dichlorobenzene	541-73-1	0.036	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,2,4-Trichlorobenzene	120-82-1	0.055	19

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K086	Solvent wastes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.	Acetone	67-64-1	0.28	160
		Acetophenone	96-86-2	0.010	9.7
		bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
		n-Butyl alcohol	71-36-3	5.6	2.6
		Butylbenzyl phthalate	85-68-7	0.017	28
		Cyclohexanone	108-94-1	0.36	NA
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Diethyl phthalate	84-66-2	0.20	28
		Dimethyl phthalate	131-11-3	0.047	28
		Di-n-butyl phthalate	84-74-2	0.057	28
		Di-n-octyl phthalate	117-84-0	0.017	28
		Ethyl acetate	141-78-6	0.34	33
		Ethylbenzene	100-41-4	0.057	10
		Methanol	67-56-1	5.6	NA
		Methyl ethyl ketone	78-93-3	0.28	36
		Methyl isobutyl ketone	108-10-1	0.14	33
		Methylene chloride	75-09-2	0.089	30
		Naphthalene	91-20-3	0.059	5.6
		Nitrobenzene	98-95-3	0.068	14
		Toluene	108-88-3	0.080	10
		1,1,1-Trichloroethane	71-55-6	0.054	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Trichloroethylene	79-01-6	0.054	6.0
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K087	Decanter tank tar sludge from coking operations.	Acenaphthylene	208-96-8	0.059	3.4
		Benzene	71-43-2	0.14	10
		Chrysene	218-01-9	0.059	3.4
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
		Naphthalene	91-20-3	0.059	5.6
		Phenanthrene	85-01-8	0.059	5.6
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K088	Spent potliners from primary aluminum reduction.	Acenaphthene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzo(b)fluoranthene	205-99-2	0.11	6.8
		Benzo(k)fluoranthene	207-08-9	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3,-c,d)pyrene	193-39-5	0.0055	3.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Barium	7440-39-3	1.2	21 mg/l TCLP
		Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
		Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Mercury	7439-97-6	0.15	0.025 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
		Cyanide (Total)[7]	57-12-5	1.2	590

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Cyanide (Amenable)[7]	57-12-5	0.86	30
		Fluoride	16984-48-8	35	48 mg/l TCLP
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	Hexachloroethane	67-72-1	0.055	30
		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	m-Dichlorobenzene	541-73-1	0.036	6.0
		Pentachloroethane	76-01-7	0.055	6.0
		1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		1,1,2,2-Tetrachloroethane	79-34-6	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
		1,1,2-Trichloroethane	79-00-5	0.054	6.0
		Trichloroethylene	79-01-6	0.054	6.0
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
		Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
		Hexachlorocyclopentadiene	77-47-4	0.057	2.4
K098	Untreated process wastewater from the production of toxaphene.	Toxaphene	8001-35-2	0.0095	2.6
K099	Untreated wastewater from the production of 2,4-D.	2,4-Dichlorophenoxyacetic acid	94-75-7	0.72	10
		HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
		PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
		TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
		Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitroaniline	88-74-4	0.27	14
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA
		Mercury	7439-97-6	0.15	NA
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	o-Nitrophenol	88-75-5	0.028	13
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Cadmium	7440-43-9	0.69	NA
		Lead	7439-92-1	0.69	NA
		Mercury	7439-97-6	0.15	NA
K103	Process residues from aniline extraction from the production of aniline.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K104	Combined wastewater streams generated from nitrobenzene/ aniline production.	Aniline	62-53-3	0.81	14
		Benzene	71-43-2	0.14	10
		2,4-Dinitrophenol	51-28-5	0.12	160
		Nitrobenzene	98-95-3	0.068	14
		Phenol	108-95-2	0.039	6.2
		Cyanides (Total)[7]	57-12-5	1.2	590
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Benzene	71-43-2	0.14	10
		Chlorobenzene	108-90-7	0.057	6.0
		2-Chlorophenol	95-57-8	0.044	5.7
		o-Dichlorobenzene	95-50-1	0.088	6.0
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Phenol	108-95-2	0.039	6.2
		2,4,5-Trichlorophenol	95-95-4	0.18	7.4
		2,4,6-Trichlorophenol	88-06-2	0.035	7.4
K106	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	K106 (wastewater treatment sludge from the mercury cell process in chlorine production) nonwastewaters that contain less than 260 mg/kg total mercury that are residues from RMERC.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Other K106 nonwastewaters that contain less than 260 mg/kg total mercury and are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	All K106 wastewaters.	Mercury	7439-97-6	0.15	NA
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene	2,4-Dinitrotoluene	121-1-2	0.32	140
		2,6-Dinitrotoluene	606-20-2	0.55	28
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CMBST; or CHOXD fb CARBN; or BIODG fb CARBN	CMBST
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	NA	NA	CARBN; OR CMBST	CMBST
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotolune.	NA	NA	CARBN; or CMBST	CMBST
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.	Nickel	7440-02-0	3.98	11 mg/l TCLP
		NA	NA	CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.	NA	NA	CARBN; or CMBST	CMBST
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K118	Spent absorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.	NA	NA	CMBST; or CHOXD fb (BIODG or CARBN)	CMBST
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Methyl bromide (Bromomethane)	74-83-9	0.11	15
		Chloroform	67-66-3	0.046	6.0
		Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
K140	Floor sweepings, off-specification product, and spent filter media from the production of 2,4,6-tribromophenol.	2,4,6-Tribromophenol	118-79-6	0.035	7.4
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludge from coking operations).	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-2-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)flouranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Naphthalene	91-20-3	0.059	5.6
K147	Tar storage tank residues from coal tar refining.	Benzene	71-43-2	0.14	10
		Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K148	Residues from coal tar distillation, including, but not limited to, still bottoms.	Benz(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
		Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Indeno(1,2,3-cd)pyrene	193-39-5	0.0055	3.4
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups. (This waste does not include still bottoms from the distillations of benzyl chloride.)	Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Toluene	108-88-3	0.080	10
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		p-Dichlorobenzene	106-46-7	0.090	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
		Tetrachloroethylene	127-18-4	0.056	6.0
		1,2,4-Trichlorobenzene	120-82-1	0.055	19
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Benzene	71-43-2	0.14	10
		Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Hexachlorobenzene	118-74-1	0.055	10
		Pentachlorobenzene	608-93-5	0.055	10
		1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
		Tetrachloroethylene	127-18-4	0.056	6.0
		Toluene	108-88-3	0.080	10
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes. [10]	Acetonitrile	75-05-8	5.6	38
		Acetophenone	96-86-2	0.010	9.7
		Aniline	62-53-3	0.81	14
		Benomyl	17804-35-2	0.056	1.4
		Benzene	71-43-2	0.14	10
		Carbaryl	63-25-2	0.006	0.14

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Carbenzadim	10605-21-7	0.056	1.4
		Carbofuran	1563-66-2	0.006	0.14
		Carbosulfan	55285-14-8	0.028	1.4
		Chlorobenzene	108-90-7	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		o-Dichlorobenzene	95-50-1	0.088	6.0
		Methomyl	16752-77-5	0.028	0.14
		Methylene chloride	75-09-2	0.089	30
		Methyl ethyl ketone	78-93-3	0.28	36
		Naphthalene	91-20-3	0.059	5.6
		Phenol	108-95-2	0.039	6.2
		Pyridine	110-86-1	0.014	16
		Toluene	108-88-3	0.080	10
		Triethylamine	121-44-8	0.081	1.5
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes. [10]	Carbon tetrachloride	56-23-5	0.057	6.0
		Chloroform	67-66-3	0.046	6.0
		Chloromethane	74-87-3	0.19	30
		Methomyl	16752-77-5	0.028	0.14
		Methylene chloride	75-09-2	0.089	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		Methyl ethyl ketone	78-93-3	0.28	36
		o-Phenylenediamine	95-54-5	0.056	5.6
		Pyridine	110-86-1	0.014	16
		Triethylamine	121-44-8	0.081	1.5
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes. [10]	Benomyl	17804-35-2	0.056	1.4
		Benzene	71-43-2	0.14	10
		Carbenzadim	10605-21-7	0.056	1.4
		Carbofuran	1563-66-2	0.006	0.14
		Carbosulfan	55285-14-8	0.028	1.4
		Chloroform	67-66-3	0.046	6.0
		Methylene chloride	75-09-2	0.089	30
		Phenol	108-95-2	0.039	6.2
K159	Organics from the treatment of thiocarbamate wastes. [10]	Benzene	71-43-2	0.14	10
		Butylate	2008-41-5	0.042	1.4
		EPTC (Eptam)	759-94-4	0.042	1.4
		Molinate	2212-67-1	0.042	1.4
		Pebulate	1114-71-2	0.042	1.4
		Vernolate	1929-77-7	0.042	1.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
K161	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts. [10]	Antimony	7440-36-0	1.9	1.15 mg/l TCLP
		Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
		Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
		Dithiocarbamates (total)	NA	0.028	28
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
		Nickel	7440-02-0	3.98	11 mg/l TCLP
		Selenium	7782-49-2	0.82	5.7 mg/l TCLP
P001	Warfarin, & salts, when present at concentrations greater than 0.3%	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P002	1-Acetyl-2-thiourea	1-Acetyl-2-thiourea	591-08-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P003	Acrolein	Acrolein	107-02-8	0.29	CMBST
P004	Aldrin	Aldrin	309-00-2	0.021	0.066
P005	Allyl alcohol	Allyl alcohol	107-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P006	Aluminum phosphide	Aluminum phosphide	20859-73-8	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P007	5-Aminomethyl 3-isoxazolol	5-Aminomethyl 3-isoxazolol	2763-96-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P008	4-Aminopyridine	4-Aminopyridine	504-24-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P009	Ammonium picrate	Ammonium picrate	131-74-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P010	Arsenic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P011	Arsenic pentoxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P012	Arsenic trioxide	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P013	Barium cyanide	Barium	7440-39-3	NA	21 mg/l TCLP
		Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P014	Thiophenol (Benzene thiol)	Thiophenol (Benzene thiol)	108-98-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P015	Beryllium dust	Beryllium	7440-41-7	RMETL; or RTHRM	RMETL; or RTHRM
P016	Dichloromethyl ether (Bis(chloromethyl)ether)	Dichloromethyl ether	542-88-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P017	Bromoacetone	Bromoacetone	598-31-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P018	Brucine	Brucine	357-57-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	88-85-7	0.066	2.5
P021	Calcium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P022	Carbon disulfide	Carbon disulfide	75-15-0	3.8	CMBST
		Carbon disulfide; alternate[6] standard for nonwastewaters only	75-15-0	NA	4.8 mg/l TCLP
P023	Chloroacetaldehyde	Chloroacetaldehyde	107-20-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P024	p-Chloroaniline	p-Chloroaniline	106-47-8	0.46	16

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P026	1-(o-Chlorophenyl)thiourea	1-(o-Chlorophenyl)thiourea	5344-82-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P027	3-Chloropropionitrile	3-Chloropropionitrile	542-76-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P028	Benzyl chloride	Benzyl chloride	100-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P029	Copper cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P030	Cyanides (soluble salts and complexes)	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P031	Cyanogen	Cyanogen	460-19-5	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P033	Cyanogen chloride	Cyanogen chloride	506-77-4	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
P034	2-Cyclohexyl-4,6-dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	131-89-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P036	Dichlorophenylarsine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P037	Dieldrin	Dieldrin	60-57-1	0.017	0.13
P038	Diethylarsine	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
P039	Disulfoton	Disulfoton	298-04-4	0.017	6.2
P040	0,0-Diethyl O-pyrazinyl phosphorothioate	0,0-Diethyl O-pyrazinyl phosphorothioate	297-97-2	CARBN; or CMBST	CMBST
P041	Diethyl-p-nitrophenyl phosphate	Diethyl-p-nitrophenyl phosphate	311-45-5	CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P042	Epinephrine	Epinephrine	51-43-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P043	Diisopropylfluorophosphate (DFP)	Diisopropylfluorophosphate (DFP)	55-91-4	CARBN; or CMBST	CMBST
P044	Dimethoate	Dimethoate	60-51-5	CARBN; or CMBST	CMBST
P045	Thiofanox	Thiofanox	39196-18-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P046	alpha, alpha-Dimethylphenethylamine	alpha, alpha-Dimethylphenethylamine	122-09-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P047	4,6-Dinitro-o-cresol	4,6-Dinitro-o-cresol	543-52-1	0.28	160
	4,6-Dinitro-o-cresol salts	NA	NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P048	2,4-Dinitrophenol	2,4-Dinitrophenol	51-28-5	0.12	160
P049	Dithiobiuret	Dithiobiuret	541-53-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P050	Endosulfan	Endosulfan I	939-98-8	0.023	0.066
		Endosulfan II	33213-6-5	0.029	0.13
		Endosulfan sulfate	1031-07-8	0.029	0.13
P051	Endrin	Endrin	72-20-8	0.0028	0.13
		Endrin aldehyde	7421-93-4	0.025	0.13
P054	Aziridine	Aziridine	151-56-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P056	Fluorine	Fluoride (measured in wastewaters only)	16964-48-8	35	ADGAS fb NEUTR

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P057	Fluoroacetamide	Fluoroacetamide	640-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P058	Fluoroacetic acid, sodium salt	Fluoroacetic acid, sodium salt	62-74-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P059	Heptachlor	Heptachlor	76-44-8	0.0012	0.066
		Heptachlor epoxide	1024-57-3	0.016	0.066
P060	Isodrin	Isodrin	465-73-6	0.021	0.066
P062	Hexaethyl tetraphosphate	Hexaethyl tetraphosphate	757-58-4	CARBN; or CMBST	CMBST
P063	Hydrogen cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P064	Isocyanic acid, ethyl ester	Isocyanic acid, ethyl ester	624-83-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P065	Mercury fulminate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC
	Mercury fulminate nonwastewaters that are either incinerator residues or are residues from RMERC; and contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	Mercury fulminate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Mercury fulminate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All mercury fulminate wastewaters.	Mercury	7439-97-6	0.15	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P066	Methomyl	Methomyl	16752-77-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P067	2-Methyl-aziridine	2-Methyl-aziridine	75-55-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P068	Methyl hydrazine	Methyl hydrazine	60-34-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P069	2-Methyllactonitrile	2-Methyllactonitrile	75-86-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P070	Aldicarb	Aldicarb	116-06-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P071	Methyl parathion	Methyl parathion	298-00-0	0.014	4.6
P072	1-Naphthyl-2-thiourea	1-Naphthyl-2-thiourea	86-88-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P073	Nickel carbonyl	Nickel	7440-02-0	3.98	11 mg/l TCLP
P074	Nickel cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Nickel	7440-02-0	3.98	11 mg/l TCLP
P075	Nicotine and salts	Nicotine and salts	54-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P076	Nitric oxide	Nitric oxide	10102-43-9	ADGAS	ADGAS
P077	p-Nitroaniline	p-Nitroaniline	100-01-6	0.028	28
P078	Nitrogen dioxide	Nitrogen dioxide	10102-44-0	ADGAS	ADGAS

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P081	Nitroglycerin	Nitroglycerin	55-63-0	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P082	N-Nitrosodimethylamine	N-Nitrosodimethylamine	62-75-9	0.40	2.3
P084	N-Nitrosomethylvinylamine	N-Nitrosomethylvinylamine	4549-40-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P085	Octamethylpyrophosphoramide	Octamethylpyrophosphoramide	152-16-9	CARBN; or CMBST	CMBST
P087	Osmium tetroxide	Osmium tetroxide	20816-12-0	RMETL; or RTHRM	RMETL; or RTHRM
P088	Endothall	Endothall	145-73-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P089	Parathion	Parathion	56-38-2	0.014	4.6
P092	Phenyl mercuric acetate nonwastewaters, regardless of their total mercury content, that are not incinerator residues or are not residues from RMERC.	Mercury	7439-97-6	NA	IMERC; or RMERC
	Phenyl mercuric acetate nonwastewaters that are either incinerator residues or are residues from RMERC; and still contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	Phenyl mercuric acetate nonwastewaters that are residues from RMERC and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.20 mg/l TCLP
	Phenyl mercuric acetate nonwastewaters that are incinerator residues and contain less than 260 mg/kg total mercury.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All phenyl mercuric acetate wastewaters.	Mercury	7439-97-6	0.15	NA

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P093	Phenylthiourea	Phenylthiourea	103-85-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P094	Phorate	Phorate	298-02-2	0.021	4.6
P095	Phosgene	Phosgene	75-44-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P096	Phosphine	Phosphine	7803-51-2	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P097	Famphur	Famphur	52-85-7	0.017	15
P098	Potassium cyanide.	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P099	Potassium silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
P101	Ethyl cyanide (Propanenitrile)	Ethyl cyanide (Propanenitrile)	107-12-0	0.24	360
P102	Propargyl alcohol	Propargyl alcohol	107-19-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P103	Selenourea	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
P104	Silver cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
		Silver	7440-22-4	0.43	0.14 mg/l TCLP
P105	Sodium azide	Sodium azide	26628-22-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P106	Sodium cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30
P108	Strychnine and salts	Strychnine and salts	57-24-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P109	Tetraethyldithiopyrophosphate	Tetraethyldithiopyrophosphate	3689-24-5	CARBN; or CMBST	CMBST
P110	Tetraethyl lead	Lead	7439-92-1	0.69	0.75 mg/l TCLP
P111	Tetraethylpyrophosphate	Tetraethylpyrophosphate	107-49-3	CARBN; or CMBST	CMBST
P112	Tetranitromethane	Tetranitromethane	509-14-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
P113	Thallic oxide	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
P114	Thallium selenite	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
P115	Thallium (I) sulfate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
P116	Thiosemicarbazide	Thiosemicarbazide	79-19-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P118	Trichloromethanethiol	Trichloromethanethiol	75-70-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
P119	Ammonium vanadate	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P120	Vanadium pentoxide	Vanadium (measured in wastewaters only)	7440-62-2	4.3	STABL
P121	Zinc cyanide	Cyanides (Total)[7]	57-12-5	1.2	590
		Cyanides (Amenable)[7]	57-12-5	0.86	30

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P122	Zinc phosphide Zn_3P_2, when present at concentrations greater than 10%	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
P123	Toxaphene	Toxaphene	8001-35-2	0.0095	2.6
P127	Carbofuran [10]	Carbofuran	1563-66-2	0.006	0.14
P128	Mexacarbate [10]	Mexacarbate	315-18-4	0.056	1.4
P185	Tirpate [10]	Tirpate	26419-73-8	0.056	0.28
P188	Physostigmine salicylate [10]	Physostigmine salicylate	57-64-7	0.056	1.4
P189	Carbosulfan [10]	Carbosulfan	55285-14-8	0.028	1.4
P190	Metolcarb [10]	Metolcarb	1129-41-5	0.056	1.4
P191	Dimetilan [10]	Dimetilan	644-64-4	0.056	1.4
P192	Isolan [10]	Isolan	119-38-0	0.056	1.4
P194	Oxamyl [10]	Oxamyl	23135-22-0	0.056	0.28
P196	Manganese dimethyldithiocarbamate [10]	Dithiocarbamates (total)	NA	0.028	28
P197	Formparanate [10]	Formparanate	17702-57-7	0.056	1.4
P198	Formetanate hydrochloride [10]	Formetanate hydrochloride	23422-53-9	0.056	1.4
P199	Methiocarb [10]	Methiocarb	2032-65-7	0.056	1.4
P201	Promecarb [10]	Promecarb	2631-37-0	0.056	1.4
P202	m-Cumenyl methylcarbamate [10]	m-Cumenyl methylcarbamate	64-00-6	0.056	1.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
P203	Aldicarb sulfone [10]	Aldicarb sulfone	1646-88-4	0.056	0.28
P204	Physostigmine [10]	Physostigmine	57-47-6	0.056	1.4
P205	Ziram [10]	Dithiocarbamates (total)	NA	0.028	28
U001	Acetaldehyde	Acetaldehyde	75-07-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U002	Acetone	Acetone	67-64-1	0.28	160
U003	Acetonitrile	Acetonitrile	75-05-8	5.6	CMBST
		Acetonitrile; alternate[6] standard for nonwastewaters only	75-05-8	NA	38
U004	Acetophenone	Acetophenone	98-86-2	0.010	9.7
U005	2-Acetylaminofluorene	2-Acetylaminofluorene	53-96-3	0.059	140
U006	Acetyl chloride	Acetyl Chloride	75-36-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U007	Acrylamide	Acrylamide	79-06-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U008	Acrylic acid	Acrylic acid	79-10-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U009	Acrylonitrile	Acrylonitrile	107-13-1	0.24	84
U010	Mitomycin C	Mitomycin C	50-07-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U011	Amitrole	Amitrole	61-82-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U012	Aniline	Aniline	62-53-3	0.81	14

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U014	Auramine	Auramine	492-80-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U015	Azaserine	Azaserine	115-02-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U016	Benz(c)acridine	Benz(c)acridine	225-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U017	Benzal chloride	Benzal chloride	98-87-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U018	Benz(a)anthracene	Benz(a)anthracene	56-55-3	0.059	3.4
U019	Benzene	Benzene	71-43-2	0.14	10
U020	Benzenesulfonyl chloride	Benzenesulfonyl chloride	98-09-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U021	Benzidine	Benzidine	92-87-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U022	Benzo(a)pyrene	Benzo(a)pyrene	50-32-8	0.061	3.4
U023	Benzotrichloride	Benzotrichloride	98-07-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U024	bis(2-Chloroethoxy)methane	bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
U025	bis(2-Chloroethyl)ether	bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
U026	Chlornaphazine	Chlornaphazine	494-03-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U027	bis(2-Chloroisopropyl)ether	bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
U028	bis(2-Ethylhexyl) phthalate	bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U029	Methyl bromide (Bromomethane)	Methyl bromide (Bromomethane)	74-83-9	0.11	15
U030	4-Bromophenyl phenyl ether	4-Bromophenyl phenyl ether	101-55-3	0.055	15
U031	n-Butyl alcohol	n-Butyl alcohol	71-36-3	5.6	2.6
U032	Calcium chromate	Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
U033	Carbon oxyfluoride	Carbon oxyfluoride	353-50-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U034	Trichloroacetaldehyde (Chloral)	Trichloroacetaldehyde (Chloral)	75-87-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U035	Chlorambucil	Chlorambucil	305-03-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U036	Chlordane	Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
U037	Chlorobenzene	Chlorobenzene	108-90-7	0.057	6.0
U038	Chlorobenzilate	Chlorobenzilate	510-15-6	0.10	CMBST
U039	p-Chloro-m-cresol	p-Chloro-m-cresol	59-50-7	0.018	14
U041	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106-89-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U042	2-Chloroethyl vinyl ether	2-Chloroethyl vinyl ether	110-75-8	0.062	CMBST
U043	Vinyl chloride	Vinyl chloride	75-01-4	0.27	6.0
U044	Chloroform	Chloroform	67-66-3	0.046	6.0
U045	Chloromethane (Methyl chloride)	Chloromethane (Methyl chloride)	74-87-3	0.19	30
U046	Chloromethyl methyl ether	Chloromethyl methyl ether	107-30-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U047	2-Chloronaphthalene	2-Chloronaphthalene	91-58-7	0.055	5.6
U048	2-Chlorophenol	2-Chlorophenol	95-57-8	0.044	5.7
U049	4-Chloro-o-toluidine hydrochloride	4-Chloro-o-toluidine hydrochloride	3165-93-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U050	Chrysene	Chrysene	218-01-9	0.059	3.4
U051	Creosote	Naphthalene	91-20-3	0.059	5.6
		Pentachlorophenol	87-86-5	0.089	7.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2
		Toluene	108-88-3	0.080	10
		Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
		Lead	7439-92-1	0.69	0.75 mg/l TCLP
U052	Cresols (Cresylic acid)	o-Cresol	95-48-7	0.11	5.6
		m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
		p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
		Cresol-mixed isomers (Cresylic acid) (sum of o-, m-, and p-cresol concentrations)	1319-77-3	0.88	11.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U053	Crotonaldehyde	Crotonaldehyde	4170-30-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U055	Cumene	Cumene	98-82-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U056	Cyclohexane	Cyclohexane	110-82-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U057	Cyclohexanone	Cyclohexanone	108-94-1	0.36	CMBST
		Cyclohexanone; alternate[6] standard for nonwastewaters only	108-94-1	NA	0.75 mg/l TCLP
U058	Cyclophosphamide	Cyclophosphamide	50-18-0	CARBN; or CMBST	CMBST
U059	Daunomycin	Daunomycin	20830-81-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U060	DDD	o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
U061	DDT	o-p'-DDT	789-02-6	0.0039	0.087
		p,p'-DDT	50-29-3	0.0039	0.087
		o,p'-DDD	53-19-0	0.023	0.087
		p,p'-DDD	72-54-8	0.023	0.087
		o,p'-DDE	3424-82-6	0.031	0.087
		p,p'-DDE	72-55-9	0.031	0.087
U062	Diallate	Diallate	2303-16-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U063	Dibenz(a,h)anthracene	Dibenz(a,h)anthracene	53-70-3	0.055	8.2

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U064	Dibenz(a,i)pyrene	Dibenz(a,i)pyrene	189-55-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U066	1,2-Dibromo-3-chloropropane	1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
U067	Ethylene dibromide (1,2-Dibromoethane)	Ethylene dibromide (1,2-Dibromoethane)	106-93-4	0.028	15
U068	Dibromomethane	Dibromomethane	74-95-3	0.11	15
U069	Di-n-butyl phthalate	Di-n-butyl phthalate	84-74-2	0.057	28
U070	o-Dichlorobenzene	o-Dichlorobenzene	95-50-1	0.088	6.0
U071	m-Dichlorobenzene	m-Dichlorobenzene	541-73-1	0.036	6.0
U072	p-Dichlorobenzene	p-Dichlorobenzene	106-46-7	0.090	6.0
U073	3,3'-Dichlorobenzidine	3,3'-Dichlorobenzidine	91-94-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U074	1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1476-11-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		trans-1,4-Dichloro-2-butene	764-41-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U075	Dichlorodifluoromethane	Dichlorodifluoromethane	75-71-8	0.23	7.2
U076	1,1-Dichloroethane	1,1-Dichloroethane	75-34-3	0.059	6.0
U077	1,2-Dichloroethane	1,2-Dichloroethane	107-06-2	0.21	6.0
U078	1,1-Dichloroethylene	1,1-Dichloroethylene	75-35-4	0.025	6.0
U079	1,2-Dichloroethylene	trans-1,2-Dichloroethylene	156-60-5	0.054	30
U080	Methylene chloride	Methylene chloride	75-09-2	0.089	30
U081	2,4-Dichlorophenol	2,4-Dichlorophenol	120-83-2	0.044	14

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U082	2,6-Dichlorophenol	2,6-Dichlorophenol	87-65-0	0.044	14
U083	1,2-Dichloropropane	1,2-Dichloropropane	78-87-5	0.85	18
U084	1,3-Dichloropropylene	cis-1,3-Dichloropropylene	10061-01-5	0.036	18
		trans-1,3-Dichloropropylene	10061-02-6	0.036	18
U085	1,2:3,4-Diepoxybutane	1,2:3,4-Diepoxybutane	1464-53-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U086	N,N'-Diethylhydrazine	N,N'-Diethylhydrazine	1615-80-1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U087	O,O-Diethyl S-methyldithiophosphate	O,O-Diethyl S-methyldithiophosphate	3288-58-2	CARBN; or CMBST	CMBST
U088	Diethyl phthalate	Diethyl phthalate	84-66-2	0.20	28
U089	Diethyl stilbestrol	Diethyl stilbestrol	56-53-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U090	Dihydrosafrole	Dihydrosafrole	94-58-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U091	3,3'-Dimethoxybenzidine	3,3'-Dimethoxybenzidine	119-90-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U092	Dimethylamine	Dimethylamine	124-40-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U093	p-Dimethylaminoazobenzene	p-Dimethylaminoazobenzene	60-11-7	0.13	CMBST
U094	7,12-Dimethylbenz(a)anthracene	7,12-Dimethylbenz(a)anthracene	57-97-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U095	3,3'-Dimethylbenzidine	3,3'-Dimethylbenzidine	119-93-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U096	alpha, alpha-Dimethyl benzyl hydroperoxide	alpha, alpha-Dimethyl benzyl hydroperoxide	80-15-9	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U097	Dimethylcarbamoyl chloride	Dimethylcarbamoyl chloride	79-44-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U098	1,1-Dimethylhydrazine	1,1-Dimethylhydrazine	57-14-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U099	1,2-Dimethylhydrazine	1,2-Dimethylhydrazine	540-73-8	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U101	2,4-Dimethylphenol	2,4-Dimethylphenol	105-67-9	0.036	14
U102	Dimethyl phthalate	Dimethyl phthalate	131-11-3	0.047	28
U103	Dimethyl sulfate	Dimethyl sulfate	77-78-1	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U105	2,4-Dinitrotoluene	2,4-Dinitrotoluene	121-14-2	0.32	140
U106	2,6-Dinitrotoluene	2,6-Dinitrotoluene	606-20-2	0.55	28
U107	Di-n-octyl phthalate	Di-n-octyl phthalate	117-84-0	0.017	28
U108	1,4-Dioxane	1,4-Dioxane	123-91-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		1,4-Dioxane; alternate[6]	123-91-1	12.0	170
U109	1,2-Diphenylhydrazine	1,2-Diphenylhydrazine	122-66-7	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
		1,2-Diphenylhydrazine; alternate[6] standard for wastewaters only	122-66-7	0.087	NA
U110	Dipropylamine	Dipropylamine	142-84-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U111	Di-n-propylnitrosamine	Di-n-propylnitrosamine	621-64-7	0.40	14
U112	Ethyl acetate	Ethyl acetate	141-78-6	0.34	33
U113	Ethyl acrylate	Ethyl acrylate	140-88-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U114	Ethylenebisdithiocarbamic acid salts and esters	Ethylenebisdithiocarbamic acid	111-54-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U115	Ethylene oxide	Ethylene oxide	75-21-8	(WETOX or CHOXD) fb CARBN; or CMBST	CHOXD; or CMBST
		Ethylene oxide; alternate[6] standard for wastewaters only	75-21-8	0.12	NA
U116	Ethylene thiourea	Ethylene thiourea	96-45-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U117	Ethyl ether	Ethyl ether	60-29-7	0.12	160
U118	Ethyl methacrylate	Ethyl methacrylate	97-63-2	0.14	160
U119	Ethyl methane sulfonate	Ethyl methane sulfonate	62-50-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U120	Fluoranthene	Fluoranthene	206-44-0	0.068	3.4
U121	Trichloromonofluoromethane	Trichloromonofluoromethane	75-69-4	0.020	30
U122	Formaldehyde	Formaldehyde	50-00-0	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U123	Formic acid	Formic acid	64-18-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U124	Furan	Furan	110-00-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U125	Furfural	Furfural	98-01-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U126	Glycidylaldehyde	Glycidylaldehyde	765-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U127	Hexachlorobenzene	Hexachlorobenzene	118-74-1	0.055	10
U128	Hexachlorobutadiene	Hexachlorobutadiene	87-68-3	0.055	5.6
U129	Lindane	alpha-BHC	319-84-6	0.00014	0.066
		beta-BHC	319-85-7	0.00014	0.066
		delta-BHC	319-86-8	0.023	0.066
		gamma-BHC (Lindane)	58-89-9	0.0017	0.066
U130	Hexachlorocyclopentadiene	Hexachlorocyclopentadiene	77-47-4	0.057	2.4
U131	Hexachloroethane	Hexachloroethane	67-72-1	0.055	30
U132	Hexachlorophene	Hexachlorophene	70-30-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U133	Hydrazine	Hydrazine	302-01-2	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U134	Hydrogen fluoride	Fluoride (measured in wastewaters only)	16964-48-8	35	ADGAS fb NEUTR; or NEUTR
U135	Hydrogen Sulfide	Hydrogen Sulfide	7783-06-4	CHOXD; CHRED, or CMBST	CHOXD; CHRED; or CMBST.

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U136	Cacodylic acid	Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
U137	Indeno(1,2,3-c,d)pyrene	Indeno(1,2,3-c,d)pyrene	193-39-5	0.0055	3.4
U138	Iodomethane	Iodomethane	74-88-4	0.19	65
U140	Isobutyl alcohol	Isobutyl alcohol	78-83-1	5.6	170
U141	Isosafrole	Isosafrole	120-58-1	0.081	2.6
U142	Kepone	Kepone	143-50-8	0.0011	0.13
U143	Lasiocarpine	Lasiocarpine	303-34-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U144	Lead acetate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U145	Lead phosphate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U146	Lead subacetate	Lead	7439-92-1	0.69	0.75 mg/l TCLP
U147	Maleic anhydride	Maleic anhydride	108-31-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U148	Maleic hydrazide	Maleic hydrazide	123-33-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U149	Malononitrile	Malononitrile	109-77-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U150	Melphalan	Melphalan	148-82-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U151	U151 (mercury) nonwastewaters that contain greater than or equal to 260 mg/kg total mercury.	Mercury	7439-97-6	NA	RMERC
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are residues from RMERC only.	Mercury	7439-97-6	NA	0.20 mg/l TCLP

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
	U151 (mercury) nonwastewaters that contain less than 260 mg/kg total mercury and that are not residues from RMERC.	Mercury	7439-97-6	NA	0.025 mg/l TCLP
	All U151 (mercury) wastewaters.	Mercury	7439-97-6	0.15	NA
	Elemental Mercury Contaminated with Radioactive Materials	Mercury	7439-97-6	NA	AMLGM
U152	Methacrylonitrile	Methacrylonitrile	126-98-7	0.24	84
U153	Methanethiol	Methanethiol	74-93-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U154	Methanol	Methanol	67-56-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Methanol; alternate[6] set of standards for both wastewaters and nonwastewaters	67-56-1	5.6	0.75 mg/l TCLP
U155	Methapyrilene	Methapyrilene	91-80-5	0.081	1.5
U156	Methyl chlorocarbonate	Methyl chlorocarbonate	79-22-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U157	3-Methylcholanthrene	3-Methylcholanthrene	56-49-5	0.0055	15
U158	4,4'-Methylene bis(2-chloroaniline)	4,4'-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
U159	Methyl ethyl ketone	Methyl ethyl ketone	78-93-3	0.28	36
U160	Methyl ethyl ketone peroxide	Methyl ethyl ketone peroxide	1338-23-4	CHOXD; CHRED; CARBN; BIODG; or CMBST	CHOXD; CHRED; or CMBST
U161	Methyl isobutyl ketone	Methyl isobutyl ketone	108-10-1	0.14	33
U162	Methyl methacrylate	Methyl methacrylate	80-62-6	0.14	160

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U163	N-Methyl N'-nitro N-nitrosoguanidine	N-Methyl N'-nitro N-nitrosoguanidine	70-25-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U164	Methylthiouracil	Methylthiouracil	56-04-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U165	Naphthalene	Naphthalene	91-20-3	0.059	5.6
U166	1,4-Naphthoquinone	1,4-Naphthoquinone	130-15-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U167	1-Naphthylamine	1-Naphthylamine	134-32-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U168	2-Naphthylamine	2-Naphthylamine	91-59-8	0.52	CMBST
U169	Nitrobenzene	Nitrobenzene	98-95-3	0.068	14
U170	p-Nitrophenol	p-Nitrophenol	100-02-7	0.12	29
U171	2-Nitropropane	2-Nitropropane	79-46-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U172	N-Nitrosodi-n-butylamine	N-Nitrosodi-n-butylamine	924-16-3	0.40	17
U173	N-Nitrosodiethanolamine	N-Nitrosodiethanolamine	1116-54-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U174	N-Nitrosodiethylamine	N-Nitrosodiethylamine	55-18-5	0.40	28
U176	N-Nitroso-N-ethylurea	N-Nitroso-N-ethylurea	759-73-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U177	N-Nitroso-N-methylurea	N-Nitroso-N-methylurea	684-93-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U178	N-Nitroso-N-methylurethane	N-Nitroso-N-methylurethane	615-53-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U179	N-Nitrosopiperidine	N-Nitrosopiperidine	100-75-4	0.013	35

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U180	N-Nitrosopyrrolidine	N-Nitrosopyrrolidine	930-55-2	0.013	35
U181	5-Nitro-o-toluidine	5-Nitro-o-toluidine	99-55-8	0.32	28
U182	Paraldehyde	Paraldehyde	123-63-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U183	Pentachlorobenzene	Pentachlorobenzene	608-93-5	0.055	10
U184	Pentachloroethane	Pentachloroethane	76-01-7	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
		Pentachloroethane; alternate[6] standards for both wastewaters and nonwastewaters	76-01-7	0.055	6.0
U185	Pentachloronitrobenzene	Pentachloronitrobenzene	82-68-8	0.055	4.8
U186	1,3-Pentadiene	1,3-Pentadiene	504-60-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U187	Phenacetin	Phenacetin	62-44-2	0.081	16
U188	Phenol	Phenol	108-95-2	0.039	6.2
U189	Phosphorus sulfide	Phosphorus sulfide	1314-80-3	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST
U190	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid	Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	100-21-0	0.055	28
		Phthalic anhydride (measured as Phthalic acid or Terephthalic acid)	85-44-9	0.055	28
U191	2-Picoline	2-Picoline	109-06-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U192	Pronamide	Pronamide	23950-58-5	0.093	1.5
U193	1,3-Propane sultone	1,3-Propane sultone	1120-71-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U194	n-Propylamine	n-Propylamine	107-10-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U196	Pyridine	Pyridine	110-86-1	0.014	16
U197	p-Benzoquinone	p-Benzoquinone	106-51-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U200	Reserpine	Reserpine	50-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U201	Resorcinol	Resorcinol	108-46-3	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U202	Saccharin and salts	Saccharin	81-07-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U203	Safrole	Safrole	94-59-7	0.081	22
U204	Selenium dioxide	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
U205	Selenium sulfide	Selenium	7782-49-2	0.82	5.7 mg/l TCLP
U206	Streptozotocin	Streptozotocin	18883-66-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U207	1,2,4,5-Tetrachlorobenzene	1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
U208	1,1,1,2-Tetrachloroethane	1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
U209	1,1,2,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
U210	Tetrachloroethylene	Tetrachloroethylene	127-18-4	0.056	6.0
U211	Carbon tetrachloride	Carbon tetrachloride	56-23-5	0.057	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U213	Tetrahydrofuran	Tetrahydrofuran	109-99-9	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U214	Thallium (I) acetate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U215	Thallium (I) carbonate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U216	Thallium (I) chloride	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U217	Thallium (I) nitrate	Thallium (measured in wastewaters only)	7440-28-0	1.4	RTHRM; or STABL
U218	Thioacetamide	Thioacetamide	62-55-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U219	Thiourea	Thiourea	62-56-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U220	Toluene	Toluene	108-88-3	0.080	10
U221	Toluenediamine	Toluenediamine	25376-45-8	CARBN; or CMBST	CMBST
U222	o-Toluidine hydrochloride	o-Toluidine hydrochloride	636-21-5	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U223	Toluene diisocyanate	Toluene diisocyanate	26471-62-5	CARBN; or CMBST	CMBST
U225	Bromoform (Tribromomethane)	Bromoform (Tribromomethane)	75-25-2	0.63	15
U226	1,1,1-Trichloroethane	1,1,1-Trichloroethane	71-55-6	0.054	6.0
U227	1,1,2-Trichloroethane	1,1,2-Trichloroethane	79-00-5	0.054	6.0
U228	Trichloroethylene	Trichloroethylene	79-01-6	0.054	6.0

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U234	1,3,5-Trinitrobenzene	1,3,5-Trinitrobenzene	99-35-4	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U235	tris-(2,3-Dibromopropyl)-phosphate	tris-(2,3-Dibromopropyl)-phosphate	126-72-7	0.11	0.10
U236	Trypan Blue	Trypan Blue	72-57-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U237	Uracil mustard	Uracil mustard	66-75-1	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U238	Urethane (Ethyl carbamate)	Urethane (Ethyl carbamate)	51-79-6	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U239	Xylenes	Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
U240	2,4-D (2,4-Dichlorophenoxyacetic acid)	2,4-D (2,4-Dichlorophenoxyacetic acid)	94-75-7	0.72	10
	2,4-D (2,4-Dichlorophenoxyacetic acid) salts and esters		NA	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U243	Hexachloropropylene	Hexachloropropylene	1888-71-7	0.035	30
U244	Thiram	Thiram	137-26-8	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U246	Cyanogen bromide	Cyanogen bromide	506-68-3	CHOXD; WETOX; or CMBST	CHOXD; WETOX; or CMBST
U247	Methoxychlor	Methoxychlor	72-43-5	0.25	0.18
U248	Warfarin, & salts, when present at concentrations of 0.3% or less	Warfarin	81-81-2	(WETOX or CHOXD) fb CARBN; or CMBST	CMBST
U249	Zinc phosphide, Zn_3P_2, when present at concentrations of 10% or less	Zinc Phosphide	1314-84-7	CHOXD; CHRED; or CMBST	CHOXD; CHRED; or CMBST

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U271	Benomyl [10]	Benomyl	17804-35-2	0.056	1.4
U278	Bendiocarb [10]	Bendiocarb	22781-23-3	0.056	1.4
U279	Carbaryl [10]	Carbaryl	63-25-2	0.006	0.14
U280	Barban [10]	Barban	101-27-9	0.056	1.4
U328	o-Toluidine	o-Toluidine	95-53-4	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN.	CMBST
U353	p-Toluidine	p-Toluidine	106-49-0	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U359	2-Ethoxyethanol	2-Ethoxyethanol	110-80-5	CMBST; or CHOXD fb (BIODG or CARBN); or BIODG fb CARBN	CMBST
U364	Bendiocarb phenol [10]	Bendiocarb phenol	22961-82-6	0.056	1.4
U367	Carbofuran phenol [10]	Carbofuran phenol	1563-38-8	0.056	1.4
U372	Carbendazim [10]	Carbendazim	10605-21-7	0.056	1.4
U373	Propham [10]	Propham	122-42-9	0.056	1.4
U387	Prosulfocarb [10]	Prosulfocarb	52888-80-9	0.042	1.4
U389	Triallate [10]	Triallate	2303-17-5	0.042	1.4
U394	A2213 [10]	A2213	30558-43-1	0.042	1.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES NOTE: NA means not applicable					
WASTE CODE	WASTE DESCRIPTION AND TREATMENT/REGULATORY SUBCATEGORY[1]	REGULATED HAZARDOUS CONSTITUENT		WASTEWATERS	NONWASTEWATERS
		Common Name	CAS[2] Number	Concentration in mg/l[3]; or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/l TCLP"; or Technology Code[4]
U395	Diethylene glycol, dicarbamate [10]	Diethylene glycol, dicarbamate	5952-26-1	0.056	1.4
U404	Triethylamine [10]	Triethylamine	101-44-8	0.081	1.5
U408	2,4,6-Tribromophenol	2,4,6-Tribromophenol	111-79-6	0.035	7.4
U409	Thiophanate-methyl [10]	Thiophanate-methyl	23564-05-8	0.056	1.4
U410	Thiodicarb [10]	Thiodicarb	59669-26-0	0.019	1.4
U411	Propoxur [10]	Propoxur	114-26-1	0.056	1.4

Footnotes to Treatment Standard Table 268.40

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR 261. Descriptions of Treatment/ Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264 Subpart O or Part 265 Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[6] Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/ Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[8] These wastes, when rendered nonhazardous and then subsequently managed in CWA, or CWA-equivalent systems, are not subject to treatment standards. (See § 268.1(c) (3) and (4)).

[9] These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well, are not subject to treatment standards. (See § 148.1(d)).

[10] Between August 26, 1996, and August 26, 1997, the treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST at § 268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as definded by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1 of this Part, for wastewaters.

[11] For these wastes, the definition of CMBST is limited to: (1) combustion units operating under 40 CFR 266, (2) combustion units permitted under 40 CFR Part 264, Subpart O, or (3) combustion units operating under 40 CFR 265, Subpart O, which have obtained a determination of equivalent treatment under 268.42 (b).

14. Section 268.42 is amended by revising the introductory text of paragraph (a) and removing paragraphs (a)(1), (a)(2), and (a)(3) to read as follows:

§ 268.42 Treatment standards expressed as specified technologies.

(a) The following wastes in the table in § 268.40 ''Treatment Standards for Hazardous Wastes,'' for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in the table entitled ''Technology Codes and Description of Technology-Based Standards'' in this section.

* * * * *

15. Section 268.44 is amended by redesignating paragraph (h)(3) as (h)(5), and adding new paragraphs (h) (3) and (4) to read as follows:

§ 268.44 Variance from a treatment standard.

* * * * *

(h) * * *

(3) For contaminated soil only, treatment to the level or by the method specified in the soil treatment standards would result in concentrations of hazardous constituents that are below (i.e., lower than) the concentrations necessary to minimize short- and long-term threats to human health and the environment. Treatment variances approved under this paragraph must:

(i) At a minimum, impose alternative land disposal restriction treatment standards that, using a reasonable maximum exposure scenario:

(A) For carcinogens, achieve constituent concentrations that result in the total excess risk to an individual exposed over a lifetime generally falling within a range from 10^{-4} to 10^{-6}; and

(B) For constituents with non-carcinogenic effects, achieve constituent concentrations that an individual could be exposed to on a daily basis without appreciable risk of deleterious effect during a lifetime.

(ii) Not consider post-land-disposal controls.

(4) For contaminated soil only, treatment to the level or by the method specified in the soil treatment standards would result in concentrations of hazardous constituents that are below (i.e., lower than) natural background concentrations at the site where the contaminated soil will land disposed.

* * * * *

16. Section 268.45 is amended by revising the introductory text of paragraph (a), and paragraphs (d)(3) and (d)(4) to read as follows:

§ 268.45 Treatment standards for hazardous debris.

(a) Treatment standards. Hazardous debris must be treated prior to land disposal as follows unless EPA determines under § 261.3(f)(2) of this chapter that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this subpart for the waste contaminating the debris:

* * * * *

(d) * * *

(3) Cyanide-reactive debris. Residue from the treatment of debris that is reactive because of cyanide must meet the treatment standards for D003 in ''Treatment Standards for Hazardous Wastes'' at § 268.40.

(4) Ignitable nonwastewater residue. Ignitable nonwastewater residue containing equal to or greater than 10% total organic carbon is subject to the technology specified in the treatment standard for D001: Ignitable Liquids.

* * * * *

17. Section 268.48 is amended by revising the table Universal Treatment Standards to read as follows:

§ 268.48 Universal treatment standards.

(a) * * *

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	CAS[1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Organic Constituents			
A2213 [6]	30558-43-1	0.042	1.4
Acenaphthylene	208-96-8	0.059	3.4
Acenaphthene	83-32-9	0.059	3.4
Acetone	67-64-1	0.28	160
Acetonitrile	75-05-8	5.6	38
Acetophenone	96-86-2	0.010	9.7
2-Acetylaminofluorene	53-96-3	0.059	140
Acrolein	107-02-8	0.29	NA
Acrylamide	79-06-1	19	23
Acrylonitrile	107-13-1	0.24	84
Aldicarb sulfone [6]	1646-88-4	0.056	0.28
Aldrin	309-00-2	0.021	0.066
4-Aminobiphenyl	92-67-1	0.13	NA
Aniline	62-53-3	0.81	14
Anthracene	120-12-7	0.059	3.4
Aramite	140-57-8	0.36	NA
alpha-BHC	319-84-6	0.00014	0.066
beta-BHC	319-85-7	0.00014	0.066
delta-BHC	319-86-8	0.023	0.066
gamma-BHC	58-89-9	0.0017	0.066
Barban [6]	101-27-9	0.056	1.4
Bendiocarb [6]	22781-23-3	0.056	1.4
Bendiocarb phenol [6]	22961-82-6	0.056	1.4

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	**CAS[1] Number**	**Wastewater Standard** Concentration in mg/l[2]	**Nonwastewater Standard** Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Benomyl [6]	17804-35-2	0.056	1.4
Benzene	71-43-2	0.14	10
Benz(a)anthracene	56-55-3	0.059	3.4
Benzal chloride	98-87-3	0.055	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8
Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
Benzo(a)pyrene	50-32-8	0.061	3.4
Bromodichloromethane	75-27-4	0.35	15
Bromomethane/Methyl bromide	74-83-9	0.11	15
4-Bromophenyl phenyl ether	101-55-3	0.055	15
n-Butyl alcohol	71-36-3	5.6	2.6
Butylate [6]	2008-41-5	0.042	1.4
Butyl benzyl phthalate	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol/Dinoseb	88-85-7	0.066	2.5
Carbaryl [6]	63-25-2	0.006	0.14
Carbenzadim [6]	10605-21-7	0.056	1.4
Carbofuran [6]	1563-66-2	0.006	0.14
Carbofuran phenol [6]	1563-38-8	0.056	1.4
Carbon disulfide	75-15-0	3.8	4.8 mg/l TCLP
Carbon tetrachloride	56-23-5	0.057	6.0
Carbosulfan [6]	55285-14-8	0.028	1.4
Chlordane (alpha and gamma isomers)	57-74-9	0.0033	0.26
p-Chloroaniline	106-47-8	0.46	16

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	CAS[1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Chlorobenzene	108-90-7	0.057	6.0
Chlorobenzilate	510-15-6	0.10	NA
2-Chloro-1,3-butadiene	126-99-8	0.057	0.28
Chlorodibromomethane	124-48-1	0.057	15
Chloroethane	75-00-3	0.27	6.0
bis(2-Chloroethoxy)methane	111-91-1	0.036	7.2
bis(2-Chloroethyl)ether	111-44-4	0.033	6.0
Chloroform	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)ether	39638-32-9	0.055	7.2
p-Chloro-m-cresol	59-50-7	0.018	14
2-Chloroethyl vinyl ether	110-75-8	0.062	NA
Chloromethane/Methyl chloride	74-87-3	0.19	30
2-Chloronaphthalene	91-58-7	0.055	5.6
2-Chlorophenol	95-57-8	0.044	5.7
3-Chloropropylene	107-05-1	0.036	30
Chrysene	218-01-9	0.059	3.4
o-Cresol	95-48-7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol)	108-39-4	0.77	5.6
p-Cresol (difficult to distinguish from m-cresol)	106-44-5	0.77	5.6
m-Cumenyl methylcarbamate [6]	64-00-6	0.056	1.4
Cyclohexanone	108-94-1	0.36	0.75 mg/l TCLP
o,p'-DDD	53-19-0	0.023	0.087
p,p'-DDD	72-54-8	0.023	0.087
o,p'-DDE	3424-82-6	0.031	0.087
p,p'-DDE	72-55-9	0.031	0.087

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	**CAS[1] Number**	**Wastewater Standard** Concentration in mg/l[2]	**Nonwastewater Standard** Concentration in mg/kg[3] unless noted as "mg/l TCLP"
o,p'-DDT	789-02-6	0.0039	0.087
p,p'-DDT	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene	53-70-3	0.055	8.2
Dibenz(a,e)pyrene	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane	96-12-8	0.11	15
1,2-Dibromoethane/Ethylene dibromide	106-93-4	0.028	15
Dibromomethane	74-95-3	0.11	15
m-Dichlorobenzene	541-73-1	0.036	6.0
o-Dichlorobenzene	95-50-1	0.088	6.0
p-Dichlorobenzene	106-46-7	0.090	6.0
Dichlorodifluoromethane	75-71-8	0.23	7.2
1,1-Dichloroethane	75-34-3	0.059	6.0
1,2-Dichloroethane	107-06-2	0.21	6.0
1,1-Dichloroethylene	75-35-4	0.025	6.0
trans-1,2-Dichloroethylene	156-60-5	0.054	30
2,4-Dichlorophenol	120-83-2	0.044	14
2,6-Dichlorophenol	87-65-0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D	94-75-7	0.72	10
1,2-Dichloropropane	78-87-5	0.85	18
cis-1,3-Dichloropropylene	10061-01-5	0.036	18
trans-1,3-Dichloropropylene	10061-02-6	0.036	18
Dieldrin	60-57-1	0.017	0.13
Diethylene glycol, dicarbamate [6]	5952-26-1	0.056	1.4
Diethyl phthalate	84-66-2	0.20	28
p-Dimethylaminoazobenzene	60-11-7	0.13	NA

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	CAS[1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
2-4-Dimethyl phenol	105-67-9	0.036	14
Dimethyl phthalate	131-11-3	0.047	28
Dimetilan [6]	644-64-4	0.056	1.4
Di-n-butyl phthalate	84-74-2	0.057	28
1,4-Dinitrobenzene	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol	534-52-1	0.28	160
2,4-Dinitrophenol	51-28-5	0.12	160
2,4-Dinitrotoluene	121-14-2	0.32	140
2,6-Dinitrotoluene	606-20-2	0.55	28
Di-n-octyl phthalate	117-84-0	0.017	28
Di-n-propylnitrosamine	621-64-7	0.40	14
1,4-Dioxane	123-91-1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine)	122-39-4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine)	86-30-6	0.92	13
1,2-Diphenylhydrazine	122-66-7	0.087	NA
Disulfoton	298-04-4	0.017	6.2
Dithiocarbamates (total) [6]	NA	0.028	28
Endosulfan I	959-98-8	0.023	0.066
Endosulfan II	33213-65-9	0.029	0.13
Endosulfan sulfate	1031-07-8	0.029	0.13
Endrin	72-20-8	0.0028	0.13
Endrin aldehyde	7421-93-4	0.025	0.13
EPTC [6]	759-94-4	0.042	1.4
Ethyl acetate	141-78-6	0.34	33

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	**CAS[1] Number**	**Wastewater Standard** Concentration in mg/l[2]	**Nonwastewater Standard** Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Ethyl benzene	100-41-4	0.057	10
Ethyl cyanide/Propanenitrile	107-12-0	0.24	360
Ethyl ether	60-29-7	0.12	160
bis(2-Ethylhexyl) phthalate	117-81-7	0.28	28
Ethyl methacrylate	97-63-2	0.14	160
Ethylene oxide	75-21-8	0.12	NA
Famphur	52-85-7	0.017	15
Fluoranthene	206-44-0	0.068	3.4
Fluorene	86-73-7	0.059	3.4
Formetanate hydrochloride [6]	23422-53-9	0.056	1.4
Formparanate [6]	17702-57-7	0.056	1.4
Heptachlor	76-44-8	0.0012	0.066
Heptachlor epoxide	1024-57-3	0.016	0.066
Hexachlorobenzene	118-74-1	0.055	10
Hexachlorobutadiene	87-68-3	0.055	5.6
Hexachlorocyclopentadiene	77-47-4	0.057	2.4
HxCDDs (All Hexachlorodibenzo-p-dioxins)	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans)	NA	0.000063	0.001
Hexachloroethane	67-72-1	0.055	30
Hexachloropropylene	1888-71-7	0.035	30
Indeno (1,2,3-c,d) pyrene	193-39-5	0.0055	3.4
Iodomethane	74-88-4	0.19	65
Isobutyl alcohol	78-83-1	5.6	170
Isodrin	465-73-6	0.021	0.066
Isolan [6]	119-38-0	0.056	1.4

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	CAS[1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Isosafrole	120-58-1	0.081	2.6
Kepone	143-50-0	0.0011	0.13
Methacrylonitrile	126-98-7	0.24	84
Methanol	67-56-1	5.6	0.75 mg/l TCLP
Methapyrilene	91-80-5	0.081	1.5
Methiocarb [6]	2032-65-7	0.056	1.4
Methomyl [6]	16752-77-5	0.028	0.14
Methoxychlor	72-43-5	0.25	0.18
3-Methylcholanthrene	56-49-5	0.0055	15
4,4-Methylene bis(2-chloroaniline)	101-14-4	0.50	30
Methylene chloride	75-09-2	0.089	30
Methyl ethyl ketone	78-93-3	0.28	36
Methyl isobutyl ketone	108-10-1	0.14	33
Methyl methacrylate	80-62-6	0.14	160
Methyl methansulfonate	66-27-3	0.018	NA
Methyl parathion	298-00-0	0.014	4.6
Metolcarb [6]	1129-41-5	0.056	1.4
Mexacarbate [6]	315-18-4	0.056	1.4
Molinate [6]	2212-67-1	0.042	1.4
Naphthalene	91-20-3	0.059	5.6
2-Naphthylamine	91-59-8	0.52	NA
o-Nitroaniline	88-74-4	0.27	14
p-Nitroaniline	100-01-6	0.028	28
Nitrobenzene	98-95-3	0.068	14
5-Nitro-o-toluidine	99-55-8	0.32	28

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	**CAS[1] Number**	**Wastewater Standard** Concentration in mg/l[2]	**Nonwastewater Standard** Concentration in mg/kg[3] unless noted as "mg/l TCLP"
o-Nitrophenol	88-75-5	0.028	13
p-Nitrophenol	100-02-7	0.12	29
N-Nitrosodiethylamine	55-18-5	0.40	28
N-Nitrosodimethylamine	62-75-9	0.40	2.3
N-Nitroso-di-n-butylamine	924-16-3	0.40	17
N-Nitrosomethylethylamine	10595-95-6	0.40	2.3
N-Nitrosomorpholine	59-89-2	0.40	2.3
N-Nitrosopiperidine	100-75-4	0.013	35
N-Nitrosopyrrolidine	930-55-2	0.013	35
Oxamyl [6]	23135-22-0	0.056	0.28
Parathion	56-38-2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors)	1336-36-3	0.10	10
Pebulate [6]	1114-71-2	0.042	1.4
Pentachlorobenzene	608-93-5	0.055	10
PeCDDs (All Pentachlorodibenzo-p-dioxins)	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzofurans)	NA	0.000035	0.001
Pentachloroethane	76-01-7	0.055	6.0
Pentachloronitrobenzene	82-68-8	0.055	4.8
Pentachlorophenol	87-86-5	0.089	7.4
Phenacetin	62-44-2	0.081	16
Phenanthrene	85-01-8	0.059	5.6
Phenol	108-95-2	0.039	6.2
o-Phenylenediamine [6]	95-54-5	0.056	5.6
Phorate	298-02-2	0.021	4.6
Phthalic acid	100-21-0	0.055	28

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	CAS[1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Phthalic anhydride	85-44-9	0.055	28
Physostigmine [6]	57-47-6	0.056	1.4
Physostigmine salicylate [6]	57-64-7	0.056	1.4
Promecarb [6]	2631-37-0	0.056	1.4
Pronamide	23950-58-5	0.093	1.5
Propham [6]	122-42-9	0.056	1.4
Propoxur [6]	114-26-1	0.056	1.4
Prosulfocarb [6]	52888-80-9	0.042	1.4
Pyrene	129-00-0	0.067	8.2
Pyridine	110-86-1	0.014	16
Safrole	94-59-7	0.081	22
Silvex/2,4,5-TP	93-72-1	0.72	7.9
1,2,4,5-Tetrachlorobenzene	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins)	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans)	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane	630-20-6	0.057	6.0
1,1,2,2-Tetrachloroethane	79-34-5	0.057	6.0
Tetrachloroethylene	127-18-4	0.056	6.0
2,3,4,6-Tetrachlorophenol	58-90-2	0.030	7.4
Thiodicarb [6]	59669-26-0	0.019	1.4
Thiophanate-methyl [6]	23564-05-8	0.056	1.4
Tirpate [6]	26419-73-8	0.056	0.28
Toluene	108-88-3	0.080	10
Toxaphene	8001-35-2	0.0095	2.6
Triallate [6]	2303-17-5	0.042	1.4

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	**CAS[1] Number**	**Wastewater Standard** Concentration in mg/l[2]	**Nonwastewater Standard** Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Tribromomethane/Bromoform	75-25-2	0.63	15
2,4,6-Tribromophenol	118-79-6	0.035	7.4
1,2,4-Trichlorobenzene	120-82-1	0.055	19
1,1,1-Trichloroethane	71-55-6	0.054	6.0
1,1,2-Trichloroethane	79-00-5	0.054	6.0
Trichloroethylene	79-01-6	0.054	6.0
Trichloromonofluoromethane	75-69-4	0.020	30
2,4,5-Trichlorophenol	95-95-4	0.18	7.4
2,4,6-Trichlorophenol	88-06-2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T	93-76-5	0.72	7.9
1,2,3-Trichloropropane	96-18-4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.057	30
Triethylamine [6]	101-44-8	0.081	1.5
tris-(2,3-Dibromopropyl) phosphate	126-72-7	0.11	0.10
Vernolate [6]	1929-77-7	0.042	1.4
Vinyl chloride	75-01-4	0.27	6.0
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations)	1330-20-7	0.32	30
Inorganic Constituents			
Antimony	7440-36-0	1.9	1.15 mg/l TCLP
Arsenic	7440-38-2	1.4	5.0 mg/l TCLP
Barium	7440-39-3	1.2	21 mg/l TCLP
Beryllium	7440-41-7	0.82	1.22 mg/l TCLP
Cadmium	7440-43-9	0.69	0.11 mg/l TCLP
Chromium (Total)	7440-47-3	2.77	0.60 mg/l TCLP
Cyanides (Total)[4]	57-12-5	1.2	590

UNIVERSAL TREATMENT STANDARDS NOTE: NA means not applicable			
REGULATED CONSTITUENT Common Name	CAS[1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration in mg/l[2]	Concentration in mg/kg[3] unless noted as "mg/l TCLP"
Cyanides (Amenable)[4]	57-12-5	0.86	30
Fluoride[5]	16984-48-8	35	NA
Lead	7439-92-1	0.69	0.75 mg/l TCLP
Mercury - Nonwastewater from Retort	7439-97-6	NA	0.20 mg/l TCLP
Mercury - All Others	7439-97-6	0.15	0.025 mg/lTCLP
Nickel	7440-02-0	3.98	11 mg/l TCLP
Selenium[7]	7782-49-2	0.82	5.7 mg/l TCLP
Silver	7440-22-4	0.43	0.14 mg/l TCLP
Sulfide[5]	18496-25-8	14	NA
Thallium	7440-28-0	1.4	0.20 mg/l TCLP
Vanadium[5]	7440-62-2	4.3	1.6 mg/l TCLP
Zinc[5]	7440-66-6	2.61	4.3 mg/l TCLP

FOOTNOTES TO TABLE UTS

1 CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.44

2 Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

3 Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

4 Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

5 These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at §268.2(i).

6 Between August 26, 1996, and August 26, 1997, these constituents are not "underlying hazardous constituents" as defined at §268.2(i) of this part.

7 This constituent is not an underlying hazardous constituent as defined at §268.2(i) of this part because its UTS level is greater than its TC level, thus a treated selenium waste would always be characteristically hazardous, unless it is treated to below its characteristic level.

BILLING CODE 6560–50–C

18. Subpart D is amended by adding § 268.49 to read as follows:

§ 268.49 Alternative LDR treatment standards for contaminated soil.

(a) Applicability. You must comply with LDRs prior to placing soil that exhibits a characteristic of hazardous waste, or exhibited a characteristic of hazardous waste at the time it was generated, into a land disposal unit. The following chart describes whether you must comply with LDRs prior to placing soil contaminated by listed hazardous waste into a land disposal unit:

If LDRs	And if LDRs	And if	Then you
Applied to the listed waste when it contaminated the soil*.	Apply to the listed waste now	.....	Must comply with LDRs
Didn't apply to the listed waste when it contaminated the soil*.	Apply to the listed waste now	The soil is determined to contain the listed waste when the soil is first generated.	Must comply with LDRs.
Didn't apply to the listed waste when it contaminated the soil*.	Apply to the listed waste now	The soil is determined not to contain the listed waste when the soil is first generated.	Needn't comply with LDRs.
Didn't apply to the listed waste when it contaminated the soil*.	Don't apply to the listed waste now	.....	Needn't comply with LDRs.

*For dates of LDR applicability, see 40 CFR Part 268 Appendix VII. To determine the date any given listed hazardous waste contaminated any given volume of soil, use the last date any given listed hazardous waste was placed into any given land disposal unit or, in the case of an accidental spill, the date of the spill.

(b) Prior to land disposal, contaminated soil identified by paragraph (a) of this section as needing to comply with LDRs must be treated according to the applicable treatment standards specified in paragraph (c) of this section or according to the Universal Treatment Standards specified in 40 CFR 268.48 applicable to the contaminating listed hazardous waste and/or the applicable characteristic of hazardous waste if the soil is characteristic. The treatment standards specified in paragraph (c) of this section and the Universal Treatment Standards may be modified through a treatment variance approved in accordance with 40 CFR 268.44.

(c) Treatment standards for contaminated soils. Prior to land disposal, contaminated soil identified by paragraph (a) of this section as needing to comply with LDRs must be treated according to all the standards specified in this paragraph or according to the Universal Treatment Standards specified in 40 CFR 268.48.

(1) All soils. Prior to land disposal, all constituents subject to treatment must be treated as follows:

(A) For non-metals, treatment must achieve 90 percent reduction in total constituent concentrations, except as provided by paragraph (c)(1)(C) of this section.

(B) For metals, treatment must achieve 90 percent reduction in constituent concentrations as measured in leachate from the treated media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by paragraph (c)(1)(C) of this section.

(C) When treatment of any constituent subject to treatment to a 90 percent reduction standard would result in a concentration less than 10 times the Universal Treatment Standard for that constituent, treatment to achieve constituent concentrations less than 10 times the universal treatment standard is not required. Universal Treatment Standards are identified in 40 CFR 268.48 Table UTS.

(2) Soils that exhibit the characteristic of ignitability, corrosivity or reactivity. In addition to the treatment required by paragraph (c)(1) of this section, prior to land disposal, soils that exhibit the characteristic of ignitability, corrosivity, or reactivity must be treated to eliminate these characteristics.

(3) Soils that contain nonanalyzable constituents. In addition to the treatment requirements of paragraphs (c)(1) and (2) of this section, prior to land disposal, the following treatment is required for soils that contain nonanalyzable constituents:

(A) For soil that also contains analyzable constituents, treatment of those analyzable constituents to the levels specified in paragraphs (c)(1) and (2) of this section; or,

(B) For soil that contains only nonanalyzable constituents, treatment by the method specified in § 268.42 for the waste contained in the soil.

(d) Constituents subject to treatment. When applying the soil treatment standards in paragraph (c) of this section, constituents subject to treatment are any constituents listed in 40 CFR 268.48, Table UTS—Universal Treatment Standards that are reasonably expected to be present in any given volume of contaminated soil, except fluoride, selenium, sulfides, vanadium and zinc, and are present at concentrations greater than ten times the universal treatment standard.

(e) Management of treatment residuals. Treatment residuals from treating contaminated soil identified by paragraph (a) of this section as needing to comply with LDRs must be managed as follows:

(1) Soil residuals are subject to the treatment standards of this section;

(2) Non-soil residuals are subject to:

(A) For soils contaminated by listed hazardous waste, the RCRA Subtitle C standards applicable to the listed hazardous waste; and

(B) For soils that exhibit a characteristic of hazardous waste, if the non-soil residual also exhibits a characteristic of hazardous waste, the treatment standards applicable to the characteristic hazardous waste.

19. Table 1 in Appendix VII to Part 268 is amended by removing the entries for waste code F033; revising the second entry for waste code F032, the second entry for F034, and the first entry for K088; revising the entries for D003-D011 and two entries for waste code F035; and, Table 2 is amended by revising entry number 9 and adding entries 12 and 13 to read as follows:

TABLE 1.—EFFECTIVE DATES OF SURFACE DISPOSED WASTES

[(Non-soil and Debris) Regulated in the LDRS[a]—Comprehensive List]

Waste code	Waste category	Effective date
*	* * * * * *	*
D003	Newly identified surface-disposed elemental phosphorus processing wastes	May 26, 2000.
D004	Newly identified D004 and mineral processing wastes	August 24, 1998.
D004	Mixed radioactive/newly identified D004 or mineral processing wastes	May 26, 2000.
D005	Newly identified D005 and mineral processing wastes	August 24, 1998.
D005	Mixed radioactive/newly identified D005 or mineral processing wastes	May 26, 2000.
D006	Newly identified D006 and mineral processing wastes	August 24, 1998.
D006	Mixed radioactive/newly identified D006 or mineral processing wastes	May 26, 2000.
D007	Newly identified D007 and mineral processing wastes	August 24, 1998.
D007	Mixed radioactive/newly identified D007or mineral processing wastes	May 26, 2000.
D008	Newly identified D008 and mineral processing waste	August 24, 1998.
D008	Mixed radioactive/newly identified D008 or mineral processing wastes	May 26, 2000.
D009	Newly identified D009 and mineral processing waste	August 24, 1998.
D009	Mixed radioactive/newly identified D009or mineral processing wastes	May 26, 2000.
D010	Newly identified D010 and mineral processing wastes	August 24, 1998.
D010	Mixed radioactive/newly identified D010 ormineral processing wastes	May 26, 2000.
D011	Newly identified D011 and mineral processing wastes	August 24, 1998.
D011	Mixed radioactive/newly identified D011or mineral processing wastes	May 26, 2000.
*	* * * * * *	*
F032	All others	August 12, 1997.
*	* * * * * *	*
F034	All others	August 12, 1997.
F035	Mixed with radioactive wastes	May 12, 1999.
F035	All others	August 12, 1997.
*	* * * * * *	*
K088	All others	October 8, 1997.
*	* * * * * *	*

* * * * *

TABLE 2.—SUMMARY OF EFFECTIVE DATES OF LAND DISPOSAL RESTRICTIONS FOR CONTAMINATED SOIL AND DEBRIS (CSD)

Restricted hazardous waste in CSD	Effective date
* * * * * * *	*
9. Soil and debris contaminated with K088 wastes	October 8, 1997.
* * * * * * *	*
12. Soil and debris contaminated with newly identified D004–D011 toxicity characteristic wastes and mineral processing wastes.	August 24, 1998.
13. Soil and debris contaminated with mixed radioactive newly identified D004–D011 characteristic wastes and mineral processing wastes.	May 26, 2000.

20. Appendix VIII to Part 268 is amended by revising the title and adding in alpha numeric order the entry ''NA'' to read as follows:

Appendix VIII to Part 268—LDR Effective Dates of Injected Prohibited Hazardous Wastes

NATIONAL CAPACITY LDR VARIANCES FOR UIC WASTES

Waste code	Waste category	Effective date
*	* * * * * *	*
NA	Newly identified mineral processing wastes from titanium dioxide production and mixed radioactive/ newly identified D004–D011 characteristic wastes and mineral processing wastes.	May 26, 2000.
*	* * * * * *	*

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

21. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a) and 6926.

Subpart A—Requirements for Final Authorization

22. Section 271.1(j) is amended by adding the following entries to Table 1 in chronological order by date of publication in the **Federal Register**, and by adding the following entries to Table 2 in chronological order by effective date in the **Federal Register**, to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	*	*	*
May 26, 1998	Land Disposal Restrictions Phase IV Final Rule	[Insert FR page numbers]	August 24, 1998.
*	*	*	*

* * * * *

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	*	*	*
August 24, 1998	Prohibition on land disposal of newly identified wastes including TC metal wastes and characteristic mineral processing wastes; treatment standards for contaminated soil.	3004(m)	Date of publication and FR page cite.
May 26, 2000	Prohibition on land disposal of newly identified wastes from elemental phosphorus processing and mixed radioactive and newly identified TC metal/mineral processing wastes (including soil and debris). Prohibition on underground injection of newly identified mineral processing wastes from titanium dioxide production	3004(m)	Date of publication and FR page cite.
*	*	*	*

* * * * *

[FR Doc. 98–12575 Filed 5–22–98; 8:45 am]

BILLING CODE 6560–50–P

federal register

Monday
August 31, 1998

Part IV

Environmental Protection Agency

40 CFR Part 268 Hazardous Waste Recycling; Land Disposal Restrictions; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[FRL–6153–2]

RIN 2050–AE05

Hazardous Waste Recycling; Land Disposal Restrictions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency is issuing an amendment to the final rule, published on May 26, 1998 (63 FR 28556), which, in part, amended the Land Disposal Restriction (LDR) treatment standards for metal-bearing hazardous wastes which exhibit the characteristic of toxicity. EPA is amending the rule only insofar as it applies to zinc micronutrient fertilizers which are produced from these toxicity characteristic wastes. The Agency is taking this action because it appears that the new treatment standards are not well suited for zinc micronutrient fertilizers, and also could result in greater use of zinc fertilizers that contain relatively higher concentrations of hazardous constituents. The Agency expects to develop a more consistent and comprehensive approach to regulating hazardous waste-derived fertilizers, and currently intends to leave this amendment in place until those new regulations are adopted. In the interim, the fertilizers affected by this amendment would remain subject to the previous treatment standards for toxic metals.

EFFECTIVE DATE: August 21, 1998.

ADDRESSES: The public docket for this rule is available for public inspection at EPA's RCRA Information Center, located at Crystal Gateway, First Floor, 1235 Jefferson Davis Highway, Arlington, Virginia. The regulatory docket for this rule contains a number of background materials. To obtain a list of these items, contact the RCRA Docket at 703 603–9230 and request the list of references in EPA Docket #F–98–PH4S–FFFFF.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424–9346 (toll free) or (703) 920–9810 in the Washington, DC metropolitan area. For information on this notice contact David M. Fagan (5301W), Office of Solid Waste, 401 M Street, SW, Washington DC 20460, (703) 308–0603.

SUPPLEMENTARY INFORMATION:

Availability of Rule on Internet

This notice is available on the internet, at: www: http://www.epa.gov/oswer/hazwaste/ldrmetal/facts.htm

Table of Contents

I. Background

Under RCRA, hazardous wastes are prohibited from land disposal unless they meet treatment standards established by EPA. (The major exception, not relevant here, is if the wastes are disposed in a unit from which there will be no migration of hazardous constituents for as long as the wastes remain hazardous.) See RCRA sections 3004(g)(5) and (m); 63 FR 28557–28558. The land disposal restriction treatment standards also apply to certain products that are made from hazardous wastes, and that are placed on the land. See 40 CFR 266.20(b). This ''use constituting disposal'' provision in the RCRA regulations, which was promulgated on August 17, 1988, was intended to provide an additional degree of environmental protection for hazardous waste-derived products that are used in this manner (i.e., that are introduced directly into the environment by being placed on the land).

One particular category of hazardous waste-derived products that have been subject to these regulatory provisions are zinc micronutrient fertilizers that are produced from or which otherwise contain hazardous wastes. See 40 CFR 261.2(c)(1)(B) (defining hazardous secondary materials used in this manner as solid wastes for purposes of RCRA subtitle C). This type of fertilizer can be manufactured from several types of hazardous wastes that have high zinc content, such as dusts collected in emission control devices (''baghouse dust'') from electric arc steel making furnaces and brass foundries, ash from combustion of used tires, and other sources. These fertilizers can also be made from waste materials that are not classified as hazardous wastes, as well as from virgin raw materials such as refined zinc ores.

Prior to promulgation of the May 26, 1998 rule (commonly referred to as the ''Phase IV'' LDR rule), zinc micronutrient fertilizers made from hazardous waste secondary materials were subject (with one specific exemption, described below) to the treatment standards promulgated by EPA in the ''Third Third'' LDR rules (see 55 FR 22688, June 1, 1990, establishing prohibitions for wastes which exhibit the toxicity characteristic for metals). Those regulations essentially required that the fertilizer products be treated such that they no longer exhibited a hazardous waste characteristic before they could be applied to the land. However, the Phase IV regulations (which revised the standards in § 268.40 that apply to toxicity characteristic metal wastes) now require treatment below the hazardous waste characteristic levels. Such treatment standards are consistent with the D.C. Circuit's ruling in *Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 13–14 (D.C. Cir. 1992), that hazardous wastes must be treated so that threats posed by land disposal of their hazardous constituents are minimized (within the meaning of RCRA section 3004(m)), and treating to the hazardous waste characteristic level does not always guarantee that the requisite minimization has occurred. (See also RCRA Docket document #F93TTCFS0008, stating that this principle applies to hazardous wastes used in a manner constituting disposal.)

Since zinc micronutrient fertilizers often contain measurable levels of lead and cadmium (which are hazardous constituents and are not agriculturally beneficial), the new Phase IV treatment standards for these metals are particularly relevant with regard to fertilizers that are made from characteristic hazardous wastes. Under the Phase IV rules, such fertilizer products would have to meet the treatment standards of .75 ppm for lead and .11 ppm for cadmium, both as measured by the toxicity characteristic leaching procedure (TCLP). These treatment standards would supersede the existing standards of 5ppm for lead, and 1ppm for cadmium (also measured in leachate).

As mentioned above, fertilizers made from one particular type of hazardous waste—electric arc furnace dust (RCRA hazardous waste code K061)—are not currently subject to the LDR treatment standards. See 40 CFR 266.20(b), final sentence. EPA decided to provide this exemption in 1988, since based on the data available at the time it did not appear that fertilizers using K061 as an ingredient were significantly different, with respect to concentrations of hazardous constituents, than other zinc

micronutrient fertilizers. 53 FR 31164 (August 17, 1988).

II. Today's Action

EPA is today amending § 268.40 by adding a new paragraph (I), which will in effect stay the Phase IV rule insofar as it applies treatment standards for hazardous constituent metals in zinc-containing fertilizers that are produced from hazardous wastes which exhibit the toxicity characteristic. The Agency is persuaded that this particular stay of the Phase IV rule is appropriate, for several reasons. For one thing, in retrospect the Agency is not certain that these treatment standards are well suited for micronutrient fertilizers. Compliance with the new LDR standards could require that the hazardous metal constituents be immobilized or stabilized such that they do not leach above the prescribed regulatory levels. However, such treatment would likely also immobilize the zinc component of the fertilizer, which would render it unsuitable for plant food use. Cf. 50 FR 628–629 (Jan. 4, 1985) (imposition of normal subtitle C standards on uses constituting disposal means in most cases that the activity will not occur).

EPA is also concerned that applying the Phase IV standards to zinc fertilizers could have the effect of eliminating from the market certain fertilizer products that contain relatively low levels of hazardous constituents (e.g., lead and cadmium), while other fertilizer products that contain higher levels of contaminants, including some produced from hazardous wastes, would be unaffected. It is likely that some zinc fertilizers that are made from hazardous wastes (and that have been in compliance with the existing RCRA treatment standards) will be unable to meet the new Phase IV standards. (See letter from Chris S. Leason, July 6, 1998.) However, some zinc fertilizers that are manufactured from non-waste materials can contain considerably higher concentrations of non-beneficial metals than the fertilizers that would be affected by the Phase IV standards. Thus, by eliminating from the market the regulated waste-derived products, the Phase IV rules could actually have the effect of increasing consumption of fertilizers with higher contaminant levels.

Similarly, the Phase IV rules could encourage the use of zinc fertilizers made from K061, which is exempt from regulation (and thus does not have to meet RCRA treatment standards) when used to manufacture fertilizer. Although not apparent in 1988 when EPA promulgated this exemption, further study makes clear that these fertilizers typically contain higher concentrations of hazardous constituents (e.g., lead and cadmium) than zinc-containing fertilizers produced from characteristic hazardous wastes. (Letter from Chris Leason, August 17, 1998.) Thus, the Phase IV rule, by foreclosing the use of these less contaminated waste-derived fertilizers, could actually result in greater use of K061-derived fertilizers, which generally contain higher levels of contaminants.

The Agency recognizes that the Phase IV rulemaking has highlighted the anomalous and inconsistent nature of the current RCRA regulations that apply to use of hazardous wastes in fertilizer manufacture. Consequently, the Agency is now planning to develop a more consistent and comprehensive set of regulations for controlling such practices, and expects to publish a Notice of Proposed Rulemaking in 1999. Issues that we expect to examine in the context of this rulemaking process include the appropriateness of the exemption for recycling of K061 in fertilizers, whether or not the current treatment standards should be replaced with a set of standards more specifically tailored to fertilizers, and the need to clarify the applicability of current regulatory provisions on ''use constituting disposal'' in subpart C of 40 CFR part 266.

Until this regulatory proceeding is completed, the Agency believes that it is inappropriate to apply the Phase IV treatment standards to hazardous waste-derived zinc micronutrient fertilizers. Accordingly, EPA is staying that portion of the Phase IV regulation. As a result, the zinc micronutrient fertilizers affected by this administrative stay will continue to be subject to the regulations in effect prior to the Phase IV regulations.

III. Legal Authority

EPA is issuing this administrative stay pursuant to 5 U.S.C. 705, authorizing administrative agencies to stay administrative action pending judicial review when ''justice so requires.'' See also Rule 18 of the Federal Rules of Appellate Procedure authorizing issuance of administrative stays pending review. (A petition for review has been filed regarding applicability of the Phase IV standards to zinc micronutrient fertilizers produced from characteristic hazardous wastes.) EPA believes that issuance of a stay for these zinc micronutrient fertilizers is needed because the promulgated regulation could result in discontinuance of use of the material and encourage use of a hazardous waste-derived zinc micronutrient fertilizers which are more contaminated. The administrative stay is needed to prevent this anomalous result. These same reasons provide good cause (pursuant to 5 U.S.C. 553 (b)) to issue this administrative stay immediately, to the extent good cause is needed to justify issuing this immediately effective rule.

IV. Analysis Under Executive Order 12866, Executive Order 12875, the Paperwork Reduction Act, National Technology Transfer and Advancement Act of 1995, Executive Order 13045, and Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

This action stays treatment standards established in the recently promulgated LDR Phase IV Rule for zinc micronutrient fertilizers (63 FR 28556). Today's action has been deemed by the Agency as being a ''significant regulatory action'' for the purposes of Executive Order 12866, and is, therefore, subject to review by the Office of Management and Budget. Today's rule does not, however, impose obligations on State, local or tribal governments for the purposes of Executive Order 12875. Furthermore, this action is not subject to the Regulatory Flexibility Act (RFA) since this rule is exempt from notice and comment rulemaking requirements for good cause which is explained in section III. The Administrator is, therefore, not required to certify under the RFA. Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Pub. L. No. 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. There are no voluntary consensus technical standards directly applicable to metal contaminants in zinc micronutrient fertilizers. Therefore, EPA did not consider the use of any voluntary standards in this rulemaking. Today's rule is not subject to E.O. 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), because this action is not an

economically significant rule, and it is not expected to create any environmental health risks or safety risks that may disproportionately affect children. Under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, EPA must consider the paperwork burden imposed by any information collection request in a proposed or final rule. This rule will not impose any new information collection requirements. Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. If the mandate is unfunded, EPA must provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.'' Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. This action stays treatment standards established in the recently promulgated LDR Phase IV Rule for zinc micro-nutrient fertilizers (63 FR 28556). Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

V. Submission to Congress and the General Accounting Office

The Congressional Review Directory Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a good cause finding that notice and public procedure is impracticable, unnecessary or contrary to the public interest. This determination must be supported by a brief statement. 5 U.S.C. 808(2). As stated previously, EPA has made such a good cause finding, including the reasons therefore, and thus is promulgating this administrative stay as a final rule. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Land disposal restrictions.

Dated: August 21, 1998.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble, Title 40 chapter I of the Code of Federal Regulations is amended as follows:

PART 268—[AMENDED]

Subpart D—Treatment Standards

1. Section 268.40 is amended by adding paragraph (i), to read as follows:

§ 268.40 Applicability of treatment standards

* * * * *

(i) Zinc-containing fertilizers that are produced for the general public's use and that are produced from or contain recycled characteristic hazardous wastes (D004–D011) are subject to the applicable treatment standards in § 268.41 contained in the 40 CFR, parts 260 to 299, edition revised as of July 1, 1990.

[FR Doc. 98–23084 Filed 8–28–98; 8:45 am]

BILLING CODE 6560–50–P

Federal Register

Friday
September 4, 1998

Part IV

Environmental Protection Agency

40 CFR Parts 268 and 271

Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards for Listed Hazardous Wastes From Carbamate Production; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 268 and 271

[EPA #F–96–P32F–FFFFF; FRL–6154–5]

RIN 2050–ZA00

Emergency Revision of the Land Disposal Restrictions (LDR) Treatment Standards for Listed Hazardous Wastes from Carbamate Production

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: Today's final rule revises the waste treatment standards applicable to 40 waste constituents associated with the production of carbamate wastes. The rule sets final alternative treatment standards for seven specific carbamate waste constituents for which there are no available analytical standards. This action, effective immediately, extends indefinitely the alternative treatment standards for the seven hazardous waste constituents and deletes the treatment standard for one additional constituent for which available analytical methods have not been shown to achieve reliable measurements. This rule also deletes these eight waste constituents as underlying hazardous constituents. In addition, because the temporary alternative standards for 40 carbamate waste constituents expire automatically on August 26, 1998, today's rule also amends the Code of Federal Regulations to clarify that numerical treatment standards for these 32 carbamate waste constituents will once again be effective.

Today's rule is necessary to allow generators the ability to identify all underlying hazardous constituents reasonably expected to be present in their wastes at the point of generation, and to allow waste treaters to certify that wastes have been treated in compliance with applicable land disposal restrictions. Faced with the inability to demonstrate waste and treatment residual content through analytical testing, these facilities face potential curtailment of operations.

Given the need for the regulated community to adjust its testing and compliance programs for the 32 constituents for which numerical treatment standards are being reinstated, the Agency is extending the current set of alternative treatment standards for these 32 constituents (and concomitantly delaying the effectiveness of the corresponding portion of today's final rule) for six months from the date of publication.

EFFECTIVE DATE: This rule is effective on August 26, 1998. Compliance dates:

—Treatment standards for the wastes specified in 40 CFR 261.33 as P185, P191, P192, P197, U364, U394, and U395: August 26, 1998;

—The existing alternative standards of 40 CFR 268.40 (g) continue to apply until March 4, 1999; and

—The numerical standards specified in 40 CFR 268.40 for the wastes specified in 40 CFR 261.32 as K156–K159, and K161, and in 40 CFR 261.33 as P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U278–U280, U364, U367, U372, U373, U387, U389, U394–U395, U404, and U409–U411 and the numerical standards associated with the waste constituents in 40 CFR 268.48: March 4, 1999.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA. The Docket Identification Number is F–96–P32F–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays. The public must make an appointment to review docket materials by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at 800–424–9346 (toll-free) or 703–412–9810 locally. For specific information about this rule, contact Rhonda Minnick, phone 703–308–8771 or John Austin, phone 703–308–0436.

SUPPLEMENTARY INFORMATION:

Availability of Rule on the Internet: Please follow these instructions to access the rule:

From the World Wide Web (WWW), type http://www.epa.gov/fedrgstr. For the text of the notice, choose: Year/Month/Day.

I. Background

The Phase III final rule established treatment standards for 64 listed hazardous wastes associated with carbamate waste production (61 FR 15583, April 8, 1996). The treatment standards were expressed as concentration limits that had to be met before land disposal could occur. All constituents were placed on the Universal Treatment Standard (UTS) list, found at 40 CFR 268.48. These regulations were corrected June 28, 1996 (61 FR 33683) in ways that are not germane to the subject of this rule. The prohibition on land disposal of carbamate wastes and the requirement to meet the treatment limits were effective July 8, 1996.

On November 1, 1996, the United States Court of Appeals for the District of Columbia Circuit, in *Dithiocarbamate Task Force* v. *EPA* (98 F.3d 1394), vacated certain of the listings of carbamate wastes. Accordingly, EPA removed from the Code of Federal Regulations those listings vacated by the court and all references to those listings. A substantial portion of carbamate listing rule was unaffected by the court's opinion [1] and remained in effect. See 62 FR 32973, June 17, 1997.

Today's final rule applies only to 40 of the waste constituents that are the components of the carbamate wastes that remain listed as hazardous wastes.

After promulgation of the Phase III rule on April 8, 1996, but shortly before the treatment standards took effect on July 8, 1996, several companies in the waste management industry contacted EPA, reporting that laboratory standards were not available for some of the carbamate waste constituents. The Agency confirmed this assertion, and realized that the waste management industry was unintentionally left in an unacceptable compliance situation: they were required to certify compliance with the carbamate waste treatment standards, but commercial laboratories were able to perform the necessary analyses only for some of the newly regulated constituents. Thus, it was impossible to document whether the treatment standards were or were not achieved for those 40 constituents that could not be analyzed.

The problem was complicated by the LDR rules that pertain to meeting treatment limits for underlying hazardous constituents (UHCs) in characteristic (or formerly characteristic) hazardous wastes. Whenever a generator sends a characteristic (or formerly characteristic) waste to a treatment facility, they must identify for treatment not only the hazardous characteristic, but also all UHCs reasonably expected to be present in the waste at the point of generation. (See 40 CFR 268.2(I).) Because new carbamate constituents were added to the UTS list by the Phase

[1] The court vacated the listings of 24 U wastes, one K-waste (K160), and three of the K-wastes (K156, K157 and K158) only to the extent that they apply to the chemical, 3-iodo-2-propynyl n-butylcarbamate (IPBC). Twenty-three of the vacated U wastes consisted of all the dithiocarbamates and thiocarbamates. The other vacated U waste was IPBC, a carbamate. Carbamates that were regulated as UHCs were unaffected by the court's decision, because the decision did not deal with carbamate or carbamate constituents as underlying hazardous constituents.

III rule, they became potential UHCs. Because of the lack of laboratory standards for some of the carbamate constituents, generators could not in all cases identify all of the UHCs reasonably expected to be present in their wastes, nor could treatment facilities or regulatory agencies monitor compliance with the standards for the carbamate UHCs. Thus, it would have been impossible to document that the treatment standards were or were not achieved for those 40 carbamate constituents that appear in the list of UHCs in 40 CFR 268.48.

In an emergency final rule promulgated on August 26, 1996 (61 FR 43924), EPA established temporary alternative treatment standards for 40 carbamate waste constituents for a one-year period. EPA believed that one year was sufficient time for laboratory standards to be developed and for laboratories to take appropriate steps to do the necessary analyses for these wastes. The temporary alternative standards promulgated in the August 26, 1996, rule provided waste handlers a choice of meeting the original Phase III numerical concentration limits or of using a specified treatment technology (the technology upon whose performance the numerical treatment standard was based) (See 61 FR 43925). Combustion was the specified technology for nonwastewaters; combustion, biodegradation, chemical oxidation, or carbon adsorption were the specified technologies for wastewaters. If the wastes are treated by a specified technology, the LDR rules do not require a generator or treater to measure compliance with treatment levels, thus avoiding the analytical problems for the 40 carbamate waste constituents at issue.

However, the problem was not resolved in one year and, on August 21, 1997, EPA promulgated a second emergency rule, which extended the alternative treatment standards by one additional year until August 26, 1998 (62 FR 45568, August 28, 1998). Today's rule makes a final disposition for all 40 of the carbamate waste constituents at issue.

II. Today's Carbamate Treatment Standards

This final rule: (1) Establishes revised treatment standards for seven problem carbamate waste constituents; (2) removes the treatment standard for one additional waste constituent; (3) reinstates numerical treatment standards for 32 other carbamate waste constituents; and (4) provides six months for the regulated community to arrange for testing and analysis of the 32 carbamate constituents for which numerical standards are being reinstated.

Treatment Standards for 8 Problem Waste Constituents

Since 1996, EPA and Waste Management Inc. have conducted studies to determine for which of the 40 carbamate constituents at issue there are neither analytical standards nor reliable analytical test methods. These studies have shown that seven constituents lack analytical reference standards. These constituents are A2213, Bendiocarb phenol, Diethylene glycol dicarbamate, Dimetilan, Formparanate, Isolan, and Tirpate. Therefore, EPA is promulgating alternative treatment standards for these seven constituents, and is reinstating the numerical standards for the remainder of the carbamate wastes as per the Phase III Rule. Further, these studies have shown that o-phenylenediamine was not able to be analyzed reliably by available analytical methods. For o-phenylenediamine, the constituent is being deleted as a 40 CFR 268.40 constituent of concern in K157. The Agency believes that regulation of the other carbamate waste constituents of concern should also provide adequate treatment of this constituent.

The Agency is also deleting the eight carbamate waste constituents listed below in Table 1 from the 40 CFR 268.48 Universal Treatment Standards (UTS) table. By removing these constituents from the UTS list, the need to identify and treat them is eliminated for the listed carbamate wastes. Furthermore, this removal from the UTS list eliminates the requirement to monitor compliance and to meet UTS levels when any of the eight constituents are present as UHCs in characteristic hazardous wastes.

TABLE 1.—PROBLEM ANALYTES

	Compound	CAS No.	Reason deleted
U394	A2213	30558–43–1	No Standard.
U364	Bendiocarb phenol	22961–82–6	No Standard.
U395	Diethylene glycol, dicarbamate	5952–26–1	No Standard.
P191	Dimetilan	644–64–4	No Standard.
P197	Formparanate	17702–57–7	No Standard.
P192	Isolan	119–38–0	No Standard.
P185	Tirpate	26419–73–8	No Standard.
	o-Phenylenediamine	95–54–5	Poor method performance.

The Phase III rule required that all carbamate wastes must meet specific numerical UTS limits prior to land disposal. The standards being promulgated today for the eight problem constituents are expressed both as numerical limits as well as specified technologies. These are alternative standards, and provide waste handlers with a choice of whether to satisfy LDR treatment standards either by meeting the Phase III numerical limits, or by using a specified treatment technology for these constituents. EPA is choosing to express the LDR treatment standards as alternative standards because this allows for maximum flexibility for generators and treaters as future circumstances develop (e.g., where analytical standards for one or more of the problem constituents might be developed and numerical treatment standards could therefore be shown to be achieved).

In terms of the specified technologies, these are the same as were contained in the Agency's two emergency rules in 1996 and 1997. Combustion is the specified technology for nonwastewaters. Combustion, biodegradation, chemical oxidation, or carbon adsorption are the specified technologies for wastewaters. These technologies are defined at 40 CFR 268.42, Table 1 (see technology codes: BIODG, CARBN, CHOXD, and CMBST). If the wastes are treated by a specified technology, there is no requirement to measure compliance with treatment levels (thus the analytical problems are

avoided). Because the performance of these Best Demonstrated Available Technologies (BDATs) was the basis of the originally promulgated treatment levels, EPA believes that allowing the use of these BDATs—without a requirement to monitor the treatment residues—fully satisfies the core requirement of the LDR program: unless treatment levels are already met, hazardous wastes must be effectively treated to minimize threats to human health and the environment before they are land disposed.

EPA considered completely replacing the numerical LDR treatment standards for the other 32 carbamate constituents with specified treatment methods, rather than providing the alternative approach being promulgated in this rule for only the eight problem analytes. This would have departed from the long-standing architecture of the LDR treatment standards, which are always expressed as numerical performance standards unless special circumstances exist (such as the lack of analytical standards or methods). Our traditional approach of using numerical performance standards, rather than dictating a specific technology, has the advantage of maximizing the flexibility of generators and treaters to meet the LDR standards by whatever technology they might choose. It also addresses an Agency concern that it may be necessary to provide more comprehensive design and operating parameters to assure continuous effective treatment of wastes by a specified technology. In order to assure the effectiveness of treatment, we determined to follow our traditional numerical approach for all the carbamate constituents (excepting of course the seven analytes lacking standards and the one with poor method performance) and to continue to provide industry with the option of selecting an appropriate treatment technology based on site-specific and company-specific factors. However, EPA has received a number of suggestions that establishing comprehensive design and operating parameters for specific technologies is a useful alternative and technically feasible. EPA is considering the possibility of pursuing such a project for many LDR-regulated wastes, including carbamates.

Although we have some reservations about departing from our established approach for the problem analytes, we believe that the specific circumstances of this rule justify deferring solely to the requirement of a specified technology without first evaluating the need for design and operating parameters for the technology. If EPA determines in the future that such parameters are needed, it will modify the treatment standard.

The Agency understands that, since 1996, generators and treaters have been using specified technologies to meet the LDR treatment standards for all 40 waste constituents that were the subject of both emergency rules. Today's rule will necessitate a change in approach for 32 of those 40 waste constituents, which will involve procuring the necessary sampling and analytical services so that compliance can be assured. To allow the regulated community adequate time to make arrangements to procure the necessary analytical capabilities, the Agency will extend the current emergency standards until six months after the publication of this final rule in the Federal Register. After that time, the alternative treatment standards will apply only to the eight problem carbamate constituents from wastes specified in 40 CFR 261.33 as EPA Hazardous Waste numbers P185, P191, P192, P197, U364, U394, and U395; and soil contaminated with these wastes.

Method Studies

For the analysis of the 32 carbamate waste constituents for which numerical standards are being reinstated by today's rule, six determinative methods have been evaluated. They are listed below. Except where noted, all of the methods are from the Third Edition of *SW–846 Test Methods for Evaluating Solid Wastes Physical/Chemical Methods.*

- Method 630 (EPA Office of Water) Total Dithiocarbamates
- Method 8260 Volatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS)
- Method 8141 Organophosphorus Compounds by Gas Chromatography
- Method 8270 Semivolatile Organic Compounds by Gas Chromatography/ Mass Spectrometry (GC/MS)
- Method 8318 N-Methylcarbamates by High Performance Liquid Chromatography (HPLC)
- Method 8321 Solvent Extractable Non-Volatile Compounds by High Performance Liquid Chromatography (HPLC)/Thermospray/ Mass Spectrometry (HPLC/TSP/MS) or Ultraviolet (UV) Detection.

Method 630 determines total dithiocarbamates after conversion of the dithiocarbamates to carbon disulfide and measurement of the carbon disulfide. The method does not distinguish individual dithiocarbamate compounds and was not further evaluated in the recent studies.

The only analyte evaluated by method 8260 was triethylamine. Analysis by purge and trap failed to have adequate sensitivity to detect triethylamine at the levels of the treatment standards. Analysis by direct injection to a flame ionization detector found that levels as low 0.001 mg/L or less could be measured.

Method studies centered on the remaining carbamate waste constituents and their amenability to analysis by Methods 8141, 8270, 8318, and 8321. Because of thermal lability, carbamates and carbamoyl oximes are generally not amenable to analysis by gas chromatography except where quantitative decomposition occurs. However, thiocarbamates as a class are amenable to analysis by gas chromatographic Methods 8141 using the nitrogen/phosphorous detector and 8270 GC/MS. Method 8318 was shown to be limited to only the analysis of n-methylcarbamates. Other than dithiocarbamates and triethlyamine, all other carbamate waste constituents were found to be amenable to analysis via High Performance Liquid Chromatography (HPLC)/Thermospray/ Mass Spectrometry (HPLC/TSP/MS) or Ultraviolet (UV) detection using method 8321. For more detailed method performance results, the reader is directed to the study reports, ''Carbamate Analysis Feasibility Study,'' Waste Management, 1998 and ''Carbamate Method Evaluation Report,'' SAIC, 1998, available in the docket for today's rule. To aid laboratories conducting analysis of these constituents, Table 2 presents a summary of the analytes amenable to methods 8141, 8270, 8318, and 8321. The Agency plans in future revisions of the SW–846 methods to incorporate the additional analytes for which methods 8141, 8270, 8318, and 8321 have been demonstrated to be amenable. Furthermore, any analytical methods capable of demonstrating compliance with the new standards can be used in addition to the ones noted above which are part of SW–846.

TABLE 2.—SUMMARY OF APPLICABLE METHODS

Compound	8141	8270	8318	8321 Thermospray	8321 254nm	8321 280nm
Butylate	Y	Y		Y		
EPTC	Y	Y		Y		
Molinate	Y	Y		Y		
Pebulate	Y	Y		Y		
Propham	Y	Y		Y	Y	Y
Prosulfocarb	Y	Y		Y	Y	
Triallate	Y	Y		Y	Y	
Vernolate	Y	Y		Y		
Carbofuran phenol		Y, a			Y	Y
Aldicarb			L	L		
Aldicarb sulfone			Y, L	Y		
Bendiocarb			Y	Y, L		Y
Carbaryl			Y, L	Y, L	Y	Y
Carbofuran		a	Y, L	Y, L		Y
Carbosulfan		a	C	Y	Y	Y
m-Cumenyl methyl carbamate			Y	Y	Y	
Formetanate hydrochloride			Y	Y	Y	Y
Methiocarb			Y, L	Y	Y	Y
Methomyl			Y, L	Y, L		
Metolcarb			Y	Y		
Mexacarbate			Y	Y	Y	Y
Oxamyl			Y, L	Y, L	Y	
Promecarb			Y, L	Y	Y	
Propoxur			Y, L	Y		Y
Thiodicarb			Y	Y	Y	
Barbam				Y	Y	Y
Benomyl				Y	Y	Y
Carbendazim				Y, L	Y	Y
Physostigmine				Y	Y	Y
Physostigmine salicylate				Y		Y
Thiophanate-methyl				Y	Y	Y

a—Compounds carbofuran phenol, carbofuran, & carbosulfan can not be distinguished.
Y—Compound amenable to analysis.
L—Compound listed as a method analyte.

III. Good Cause for Immediate Final Rule

This final rule is being issued without notice and opportunity for public comment. Under the Administrative Procedure Act (APA), 5 U.S.C. 553(b)(B), an agency may forego notice and comment in promulgating a rule when the agency for good cause finds (and incorporates the finding and a brief statement of the reasons for that finding into the rule) that notice and public comments procedures are impracticable, unnecessary, or contrary to the public interest. For the reasons set forth below, EPA finds good cause to conclude that notice and comment would be unnecessary and contrary to the public interest, and therefore is not required by the APA.

First, the Agency has discovered an unanticipated and continued unavailability of analytical laboratory standards or adequate analytical method for eight of the carbamate waste constituents covered by the Phase III rule. As a practical matter, therefore, members of the regulated community cannot fully document compliance with the requirements of the treatment standard. For the same reason, EPA cannot ascertain compliance for these constituents. The same problem exists for certifying compliance and ascertaining compliance when these carbamate constitutents are underlying hazardous constiutents in characteristic (and formerly characteristic) prohibited wastes.

In addition, this unavailability of analytical standards has a significant potential to create a serious disruption in the production of at least some carbamate pesticides. Although the treatment of the restricted carbamate wastes through biodegradation, carbon adsorption, chemical oxidation (for wastewaters), or combustion is both possible and highly effective, certification that the treatment actually meets the treatment standard levels may not be possible in many instances given the lack of analytical standards for eight waste constituents of concern. Without the certification, disposal of the residuals left after treatment cannot legally occur. The Agency believes that this situation may impede production of certain pesticides, since legal disposal of some carbamate wastes would no longer be available. *See Steel Manufacturers Ass'n* v. *EPA*, 27 F.3d 642, 646–47 (D.C. Cir. 1994) (absence of a treatment standard providing a legal means of disposing of wastes from a process is equivalent to shutting down that process).

Today's rule removes an administrative hurdle that would impede sound management of these carbamate hazardous wastes. By altering the treatment standard to allow certification of compliance based on the use of specified treatment technologies without constituent-specific testing for the eight problem analytes, the Agency can ensure that effective treatment actually occurs without delay and can also assure that threats to human health and the environment are minimized.

Consequently, EPA today is preserving the core of the promulgated Phase III rule by ensuring that the restricted carbamate wastes are treated by a BDAT before they are land disposed. At the same time, EPA is eliminating the situation which could halt production of certain carbamate pesticides. The Agency concludes that this action must be taken immediately and that notice and comment would be contrary to the public interest in these

special circumstances. In addition, notice and comment are unnecessary because this emergency rule makes only conforming changes (for the 32 carbamate constituents that retain numerical standards) to the CFR needed to reflect expiration of the 1997 second emergency rule. For the seven carbamate constituents for which EPA is making permanent the technology standards, and the one constituent being deleted, EPA has had direct contact with the affected parties, and no objections were raised to these actions. For these reasons, EPA believes that there is good cause to issue this final rule immediately without prior notice and opportunity for comment.

IV. Good Cause Finding for Immediate Effective Date for Eight Carbamate Constituents and 6-Month Effective Date for the Remaining 32 Carbamate Constituents

For the eight problem analytes for which alternative treatment standards are being promulgated today, the Agency believes that the regulated community is in the untenable position of having to comply with treatment standards for which there is not an analytical way to measure compliance. Therefore, it is imperative that relief be immediately provided from the otherwise applicable treatment standards that would come into effect automatically on August 26, 1998, when the second emergency rule would expire by its own terms. In addition, today's rule does not create additional regulatory requirements; rather, it provides greater flexibility for compliance with treatment standards. For these reasons, EPA finds that good cause exists under section 3010(b)(3) of RCRA, 42 U.S.C. 6903(b)(3), to provide for an immediate effective date for the alternative standards being promulgated for the eight problem carbamate constituents. See generally 61 FR at 15662. For the same reasons, EPA finds that there is good cause under 5 U.S.C. 553(b)(3) to waive the requirement that regulations be published at least 30 days before they become effective.

For the other 32 waste constituents covered by the two emergency rules and for which the temporary alternative treatment standards expire on August 26, 1998, the Agency recognizes that today's rule will necessitate a change in approach for these 32 waste constituents. Compliance for these 32 waste constituents, as of August 27, 1998, would be based on numerical concentration limits for which sampling and analytical services will be necessary. As noted earlier, to allow the regulated community an adequate and reasonable time to make arrangements to procure the necessary analytical capabilities, the Agency will extend the current emergency standards until six months after the publication of this final rule in the **Federal Register**. After that time, the alternative treatment standards will apply only to the eight problem carbamate constituents, and the other 32 carbamate constituents will be subject to the numerical standards set forth in 40 CFR 268.40 and 268.48.

V. State Authority

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR Part 271.

Prior to HSWA, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Today's rule is being promulgated pursuant to section 3004(m) of RCRA (42 U.S.C. 6924(m)). Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. This rule is therefore effective in all states immediately pursuant to RCRA section 3006(g). States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble.

B. Effect on State Authorization

As noted above, EPA will implement today's rule in authorized States until they modify their programs to adopt these rules and the modification is approved by EPA. Because today's rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. All HSWA interim authorizations will expire January 1, 2003. (See § 271.24 and 57 FR 60132, December 18, 1992.)

VI. Regulatory Requirements

Analysis Under Executive Order 12866, Executive Order 12875, the Regulatory Flexibility Act, the Unfunded Mandates Reform Act, the Paperwork Reduction Act, National Technology Transfer and Advancement Act of 1995, Executive Order 13045, and Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Today's rule reinstates the regulatory text that existed prior to the August 26, 1996, emergency final rule (61 FR 43924), and extends indefinitely the alternative standards applicable to the seven constituents identified as lacking analytical standards. Today's action has been deemed by the Agency as being a ''significant regulatory action'' for the purposes of Executive Order 12866, and has been reviewed by the Office of Management and Budget. This is not an economically significant regulatory action. Today's rule does not, however, impose obligations on State, local or tribal governments for the purposes of Executive Order 12875. In addition, this action does not impose annual costs of $100 million or more, will not significantly or uniquely affect small governments, and is not a significant federal intergovernmental mandate. The Agency thus has no obligations under sections 202, 203, 204 and 205 of the Unfunded Mandates Reform Act. Furthermore, this action is not subject to the Regulatory Flexibility Act since this rule is exempt from notice and comment rulemaking requirements for good cause which is explained in Section IV. The Administrator is, therefore, not required to certify under the RFA.

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Pub L. No. 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus

standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This rulemaking involves environmental monitoring or measurement. Consistent with the Agency's Performance Based Measurement System (PBMS), EPA has decided not to require the use of specific, prescribed analytic methods. Rather, the rule will allow the use of any method that meets the prescribed performance criteria. The PBMS approach is intended to be more flexible and cost-effective for the regulated community; it is also intended to encourage innovation in analytical technology and improved data quality. EPA is not precluding the use of any method, whether it constitutes a voluntary consensus standard or not, as long as it meets the performance criteria specified.

Today's rule is not subject to E.O. 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), because this action is not an economically significant rule, and it does not involve decisions on environmental health risks or safety risks that may disproportionately affect children. Under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, EPA must consider the paperwork burden imposed by any information collection request in a proposed or final rule. This rule will not impose any new information collection requirements.

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. If the mandate is unfunded, EPA must provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.'' Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. This rule revises waste treatment standards applicable to 40 waste constituents associated with the production of carbamate wastes. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. § 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a good cause finding that notice and public procedure is impracticable, unnecessary or contrary to the public interest. This determination must be supported by a brief statement. 5 U.S.C. 808(2). As stated previously, EPA has made such a good cause finding, including the reasons therefor. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VII. Immediate Effective Date

The final alternative treatment standards for the seven carbamate waste constituents are effective upon publication of this final rule. Also effective upon publication is the deletion of the one constituent for which the method performance is poor. Because the regulated community does not need 6 months to come into compliance with these portions of the rule, EPA finds, pursuant to RCRA section 3010(b)(1), that these actions can be made effective in less than six months.

The reinstatement of treatment standards for the 32 carbamate waste constituents are effective 6 months after publication of this final rule. Also, EPA finds that good cause exists under 5 U.S.C. 553(d)(3) to waive the requirement that regulations be published at least 30 days before they become effective, for the reasons discussed earlier in section IV of this preamble.

List of Subjects

40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Administrative practice and procedure, Hazardous materials transportation, Hazardous waste, Penalties, Reporting and recordkeeping requirements.

Dated: August 26, 1998.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart D—Treatment Standards

2. Section 268.40 is amended in paragraph (g) by revising ''August 26, 1997 and August 26, 1998'' to read ''August 26, 1996 and March 4, 1999''; by adding paragraph (i); by revising in the table ''Treatment Standards for Hazardous Wastes'' the entries for K156–K159, K161, P127, P128, P185, P188–P192, P194, P196–P199, P201–P205, U271, U278–U280, U364, U367, U372, U373, U387, U389, U394–U395, U404, and U409–U411; and by revising footnote 10 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

* * *

(i) Effective September 4, 1998, the treatment standards for the wastes specified in 40 CFR 261.33 as EPA Hazardous Waste numbers P185, P191, P192, P197, U364, U394, and U395 may be satisfied by either meeting the constituent concentrations presented in the table ''Treatment Standards for Hazardous Wastes'' in this section, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST at § 268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as defined by the

technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1 of this Part, for wastewaters.

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

Waste code	Waste description and treatment/regulatory/subcategory [1]	Regulated hazardous constituent		Wastewaters Concentration in mg/L; [3] or technology code [4]	Nonwastewaters Concentration in mg/kg [5] unless noted as "mg/L TCLP" or technology code
		Common name	CAS [2] No.		
*	*	* *	*	*	*
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.	Acetonitrile	75–05–8	5.6	1.8
		Acetophenone	96–86–2	0.010	9.7
		Aniline	62–53–3	0.81	14
		Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbaryl	63–25–2	0.006	0.14
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chlorobenzene	108–90–7	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		o-Dichlorobenzene	95–50–1	0.088	6.0
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Naphthalene	91–20–3	0.059	5.6
		Phenol	108–95–2	0.039	6.2
		Pyridine	110–86–1	0.014	16
		Toluene	108–88–3	0.080	10
		Triethylamine	121–44–8	0.081	1.5
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoly oximes.	Carbon tetrachloride	56–23–5	0.057	6.0
		Chloroform	67–66–3	0.046	6.0
		Chloromethane	74–87–3	0.19	30
		Methomyl	16752–77–5	0.028	0.14
		Methylene chloride	75–09–2	0.089	30
		Methyl ethyl ketone	78–93–3	0.28	36
		Pyridine	110–86–1	0.014	16
		Triethylamine	121–44–8	0.081	1.5
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoly oximes.	Benomyl	17804–35–2	0.056	1.4
		Benzene	71–43–2	0.14	10
		Carbenzadim	10605–21–7	0.056	1.4
		Carbofuran	1563–66–2	0.006	0.14
		Carbosulfan	55285–14–8	0.028	1.4
		Chloroform	67–66–3	0.046	6.0
		Methylene chloride	75–09–2	0.089	30
		Phenol	108–95–2	0.039	6.2
K159	Organics from the treatment of thiocarbamate wastes.	Benzene	71–43–2	0.14	10
		Butylate	2008–41–5	0.003	1.5
		EPTC (Eptam)	759–94–4	0.003	1.4
		Molinate	2212–67–1	0.003	1.4
		Pebulate	1114–71–2	0.003	1.4
		Vernolate	1929–77–7	0.003	1.4
K161	Purification solids (including filtration, evaporation, and centrifugation solids), baghouse dust and floor sweepings from the production of dithiocarbamate acids and their salts.	Antimony	7440–36–0	1.9	[11] 1.15
		Arsenic	7440–38–2	1.4	[11] 5.0
		Carbon disulfide	75–15–0	3.8	[11] 4.8
		Dithiocarbamates (total)	137–30–4	0.028	28
		Lead	7439–92–1	0.69	[11] 0.75
		Nickel	7440–02–0	3.98	[11] 11.0
		Selenium	7782–49–2	0.82	[11] 5.7
*	*	* *	*	*	*
P127	Carbofuran	Carbofuran	1563–66–2	0.006	0.14
P128	Mexacarbate	Mexacarbate	315–18–4	0.056	1.4
P185	Tirpate [10]	Tirpate	26419–73–8	0.056	0.28
P188	Physostigmine salicylate	Physostigmine salicylate	57–64–7	0.056	1.4
P189	Carbosulfan	Carbosulfan	55285–14–8	0.028	1.4
P190	Metolcarb	Metolcarb	1129–41–5	0.056	1.4
P191	Dimetilan [10]	Dimetilan	644–64–4	0.056	1.4
P192	Isolan [10]	Isolan	119–38–0	0.056	1.4
P194	Oxamyl	Oxamyl	23135–22–0	0.056	0.028

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

Waste code	Waste description and treatment/regulatory/subcategory [1]	Regulated hazardous constituent		Wastewaters Concentration in mg/L; [3] or technology code [4]	Nonwastewaters Concentration in mg/kg [5] unless noted as "mg/L TCLP" or technology code
		Common name	CAS [2] No.		
P196	Manganese dimethyldithliocarbamate.	Dithiocarbamates (total)	NA	0.028	28
P197	Formparanate [10]	Formparanate	17702–57–7	0.056	1.4
P198	Formetanate hydrochloride	Formetanate hydrochloride	23422–53–9	0.056	1.4
P199	Methiocarb	Methiocarb	2032–65–7	0.056	1.4
P201	Promecarb	Promecarb	2631–37–0	0.056	1.4
P202	m-Cumenyl methylcarbamate	m-Cumenyl methylcarbamate	64–00–6	0.056	1.4
P203	Aldicarb sulfone	Aldicarb sulfone	1646–88–4	0.056	0.28
P204	Physostigmine	Physostigmine	57–47–6	0.056	1.4
P205	Ziram	Dithiocarbamates (total)	NA	0.028	28
*	*	*	*	*	*
U271	Benomyl	Benomyl	17804–35–2	0.056	1.4
U278	Bendiocarb	Bendiocarb	22781–23–3	0.056	1.4
U279	Carbaryl	Carbaryl	63–25–2	0.006	0.14
U280	Barban	Barban	101–27–9	0.056	1.4
*	*	*	*	*	*
U364	Bendiocarb phenol [10]	Bendiocarb phenol	22961–82–6	0.056	1.4
U367	Carbofuran phenol	Carbofuran phenol	1563–38–8	0.056	1.4
U372	Carbendazim	Carbendazim	10605–21–7	0.056	1.4
U373	Propham	Propham	122–42–9	0.056	1.4
U387	Prosulfocarb	Prosulfocarb	52888–80–9	0.042	1.4
U389	Triallate	Triallate	2303–17–5	0.042	1.4
U394	A2213 [10]	A2213	30558–43–1	0.042	1.4
U395	Diethylene glycol, dicarbamate [10]	Diethylene glycol, dicarbamate	5952–26–1	0.056	1.4
U404	Triethylamine	Triethylamine	101–44–8	0.081	1.5
U409	Thiophanate-methyl	Thiophanate-methyl	23564–05–8	0.056	1.4
U410	Thiodicarb	Thiodicarb	59669–26–0	0.019	1.4
U411	Propoxur	Propoxur	114–26–1	0.056	1.4
*	*	*	*	*	*

Notes to the table:

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264 Subpart O or Part 265 Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

[6] Where an alternate treatment standard or set of alternate standards has been indicated, a facility may comply with this alternate standard, but only for the Treatment/Regulatory Subcategory or physical form (i.e., wastewater and/or nonwastewater) specified for that alternate standard.

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

[8] These wastes, when rendered nonhazardous and then subsequently managed in CWA, CWA-equivalent, or Class I SDWA systems are not subject to treatment standards. (See § 148.1(d) and § 268.1(c)(3) and (4)).

[9] These wastes, when rendered nonhazardous and then subsequently injected in a Class I SDWA well are not subject to treatment standards. (See § 148.1(d)).

[10] The treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST at § 268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1 of this Part, for wastewaters.

[11] "mg/L TCLP".

4. In § 268.48, the table in paragraph (a) is revised by deleting the entries for: "A2213," "Bendiocarb phenol," "Diethylene glycol, dicarbamate," "Dimetilan," "Formparanate," "Isolan," "o-Phenylenediamine," and "Tirpate;" ; by removing footnote number "6" in column one, under the heading *Regulated Constituents/Common Name*, after the following chemical names: "Aldicarb sulfone," "Barban," "Bendiocarb," "Benomyl," "Butylate," "Carbaryl," "Carbenzadim," "Carbofuran," "Carbofuran phenol," "Carbosulfan," "m-Cumenyl methylcarbamate," "Dithiocarbamates (total)," "EPTC," "Formetanate hydrochloride," "Methiocarb,"

''Methomyl,'' ''Metolcarb,'' ''Mexacarbate,'' ''Molinate,'' ''Oxamyl,'' ''Pebulate,'' ''o-Phenylenediamine,'' ''Physostigmine,'' ''Physostigmine salicylate,'' ''Promecarb,'' ''Propham,'' ''Propoxur,'' ''Prosulfocarb,'' ''Thiodicarb,'' ''Thiophanate-methyl,'' ''Triallate,'' ''Triethylamine,'' and ''Vernolate;'' and by removing footnote 6.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

5. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 9602; 33 U.S.C. 1321 and 1361.

Subpart A—Requirements for Final Authorization

6. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by promulgation date in the **Federal Register**, and by adding the following entries to Table 2 in chronological order by effective date in the **Federal Register**, to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	*	*	*
September 4, 1998	Emergency Revision of the Land Disposal Restrictions (LDR) Phase III Treatment Standards for Listed Hazardous Wastes from Carbamate Production.	63 FR [Insert page numbers]	September 4, 1998.
*	*	*	*

* * * * *

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	*	*	*
September 4, 1998	Emergency Revision of the Land Disposal Restrictions (LDR) Phase III Treatment Standards for Listed Hazardous Wastes from Carbamate Production.	3004(m)	63 FR [Insert page numbers].
*	*	*	*

[FR Doc. 98–23507 Filed 9–3–98; 8:45 am]

BILLING CODE 6560–50–P

does not involve or impose any requirements that affect Indian Tribes. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

In addition, since these tolerances and exemptions that are established under FFDCA section 408 (l)(6), such as the tolerances in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*) do not apply. Nevertheless, the Agency has previously assessed whether establishing tolerances, exemptions from tolerances, raising tolerance levels or expanding exemptions might adversely impact small entities and concluded, as a generic matter, that there is no adverse economic impact. The factual basis for the Agency's generic certification for tolerance actions published on May 4, 1981 (46 FR 24950), and was provided to the Chief Counsel for Advocacy of the Small Business Administration.

X. Submission to Congress and the Comptroller General

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: August 19, 1998.

James Jones,

Director, Registration Division, Office of Pesticide Programs.

Therefore, 40 CFR chapter I is amended as follows:

PART 180–[AMENDED]

1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 346a and 371.

2. Section 180.509 is amending paragraph (b) by alphabetically adding the following entries to the table to read as follows:

§ 180.509 HOE-107892 (mefenpyrdiethyl; tolerances for residues.

* * * * *

(b) * * *

Commodity	Parts per million	Expiration/Revocation Date
Barley, bran	0.4	2/1/00
Barley, flour	0.1	2/1/00
Barley, grain	0.05	2/1/00
Barley, hay	0.5	2/1/00
Barley, pearled	1.0	2/1/00
Barley, straw	0.1	2/1/00
* * *	* * * *	

* * * * *

[FR Doc. 98–24150 Filed 9–8–98; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[FRL–6155–7]

Characteristic Slags Generated From Thermal Recovery of Lead by Secondary Lead Smelters; Land Disposal Restrictions; Final Rule; Extension of Compliance Date

AGENCY: Environmental Protection Agency (EPA).

ACTION: Extension of compliance date of final rule.

SUMMARY: The Environmental Protection Agency (EPA) is issuing an extension of the compliance date until November 26, 1998 for a limited portion of the Phase IV Final Rule, published on May 26, 1998 (63 FR 28556), which, in part, amended the Land Disposal Restriction (LDR) treatment standards for metal-bearing hazardous wastes exhibiting the toxicity characteristic. EPA is extending the date for treatment standards only for secondary lead slags exhibiting the toxicity characteristic for one or more metals that are generated from thermal recovery of lead-bearing wastes (principally batteries). The Agency is taking this action because there appear to be short-term logistical difficulties resulting in a temporary shortage of available treatment capacity for these particular wastes. In the interim, the slags affected by this extension remain subject to the treatment standards for toxicity characteristic metals promulgated in the Third Third Final Rule (55 FR 22520; June 1, 1990) and codified at 40 CFR 268.40.

EFFECTIVE DATE: August 28, 1998.

ADDRESSES: The public docket for this document extending the effective date is available for public inspection at EPA's RCRA Information Center, located at Crystal Gateway, First Floor, 1235 Jefferson Davis Highway, Arlington, Virginia. The regulatory docket contains a number of background materials pertinent to this action. To obtain a list of these items, contact the RCRA Docket at (703) 603–9230 and request the list of references in EPA Docket #F–98-LABS-FFFFF.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424–9346 (toll free) or (703) 920–9810 in the Washington, DC metropolitan area. For information on this notice contact Elaine Eby, Anita Cummings or Katrin Kral (5302W), Office of Solid Waste, 401 M Street, SW, Washington DC 20460. Elaine Eby may be reached at (703) 308–8449; Anita Cummings may be reached at (703) 308–8303; and Katrin Kral may be reached at (703) 308–6120.

SUPPLEMENTARY INFORMATION:

Availability of Rule on Internet

This notice is available on the internet, at:

www: http://www.epa.gov/oswer/hazwaste/ldrmetal/facts.htm

FTP: ftp.epa/gov

Login: anonymous
Password: your Internet address

Table of Contents

I. Background

On May 26, 1998, the Agency promulgated the Land Disposal Restrictions (''LDR'') Phase IV Final Rule. This rule revises universal treatment standards (''UTS'') for 12 metal hazardous constituents. The Phase IV Final Rule also requires toxicity characteristic (''TC'') metal wastes—those wastes exhibiting the characteristic levels set out in 261.24, as measured using the Toxicity Characteristic Leaching Procedure (''TCLP'')—to meet the UTS levels for those metal constituents prior to land disposal. In addition, the LDR rules require that underlying hazardous constituents (''UHCs'')—hazardous constituents that are present below characteristic levels but still present at levels higher than those necessary to minimize threats posed by land disposal (see 40 CFR 268.2 (i) (defining ''underlying hazardous constituent'')—present in TC metal wastes must also meet UTS levels before land disposal. Because the Agency found that there was ample stabilization capacity available to treat these metal-bearing wastes, this rule took effect 90 days from the date of promulgation, i.e., August 24, 1998, which date corresponded generally to the time needed to make logistical arrangements for treatment of wastes that were affected by Phase IV (see 63 FR at 285624–25, May 26,1998).

Prior to Phase IV, TC metal wastes were only subject to treatment standards if the wastes exceeded the characteristic level for the various hazardous metals, as established in the Third Third Final Rule (55 FR 22520, June 1, 1990). There was also no requirement to treat these wastes for underlying hazardous constituents. The Phase IV rule amends most of the standards for metals to make them more stringent, and also requires treatment of UHCs in all TC metal wastes. For example, of most relevance here, the treatment standard for lead nonwastewaters exhibiting the Toxicity Characteristic is now 0.75 mg/L (measured by the TCLP), rather than 5.0 mg/L (measured by either the TCLP or the predecessor Extraction Procedure). Further, all UHCs in characteristic lead wastes have to be treated to meet the standards for hazardous constituents set out in Section 268.48. The rule thus assures that threats posed by land disposal of these wastes will be minimized as required by RCRA section 3004 (m). See *Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 16, 27, 32 (D.C. Cir. 1992) (holding first that treatment to characteristic levels was insufficient to minimize threats within the meaning of RCRA section 3004 (m), particularly when further increments of treatment are demonstrated and available, and second that treatment of underlying hazardous constituents was required (*id.* at 16–18)).

The secondary lead industry consists of lead smelters that recover lead metal from secondary materials, primarily spent lead acid batteries. Secondary lead smelters generate slag as a by-product of this process. Secondary lead slags sometime exhibit the toxicity characteristic for lead, and occasionally for other metals as well. These slags, however, may also be nonhazardous. Today's action applies only to secondary lead slags that exhibit the toxicity characteristic for one or more RCRA metals and are therefore characteristically hazardous. See 63 FR at 28566 (May 26, 1998) (secondary lead slags which do not exhibit a characteristic are not subject to further LDR treatment requirements).

II. Today's Action

EPA is today amending the compliance date of the prohibition and treatment standards for slags from secondary lead smelting until November 26, 1998 (i.e., three months from the original effective date). Although EPA believes that the treatment standards for these slags are achievable through stabilization or other means and that there is an ample amount of treatment capacity for these slags, there are certain short-term logistical difficulties in utilizing this capacity resulting in a short-term unavailability of treatment capacity.

Secondary lead slag is generated in the form of large solid blocks of material. Before the slag can be successfully stabilized to meet the amended treatment standards, it must be crushed, a process necessitating use of specialized equipment. One commercial treater presently has such equipment on-site, but most commercial stabilization facilities do not. However, a number of secondary lead plants operate their own on-site crushing equipment. Overall there is enough available crushing equipment to provide sufficient pretreatment capacity for the secondary lead slag. Once the slags are crushed, there should be ample capacity to stabilize the crushed material, either at off-site commercial treatment facilities or on-site.

Based on these facts, EPA reiterates its finding that there is an adequate amount of treatment capacity available to treat secondary lead slag, within the meaning of RCRA section 3004(h)(2). Notwithstanding the fact that this capacity is divided between different entities (i.e. crushing equipment at one locale, stabilization capacity at another), capacity still exists and must be utilized. The whole premise of the Land Disposal Restrictions program is that existing treatment capacity is to be used in lieu of land disposal of untreated hazardous wastes. See 130 Cong. Rec. S9178 (daily ed. July 25, 1984) (statement of Sen. Chafee); see also S. Rep. No. 198, 98th Cong. 1st Sess. 18 (1984). Thus, EPA emphasizes that it does not (and will not) accept any argument that treatment is unavailable because generators refuse to perform pretreatment necessary to facilitate treatment to meet LDR levels.

However, EPA recognizes in this particular case that the physically separate pretreatment and treatment operations result in a situation where additional time is needed to arrange for logistical coordination and shipping. Prospective customers typically send waste samples to commercial treaters, who then develop a stabilization recipe for the waste, a process normally taking several weeks. This process has not yet begun for several reasons. There apparently was some confusion regarding the physical form of the waste to be treated, the result being that at least some treatment facilities believed they would need to treat uncrushed material, resulting in not-fully-informed refusals to accept the waste for treatment. As a result, some limited additional time is needed for commercial treaters to receive crushed samples, develop treatment recipes for that sample, enter into necessary contractual relationships with the generators of secondary lead slag, and finalize other logistical coordination necessities, such as shipping.

In addition, the secondary lead industry is not currently prepared to ship pulverized slag to commercial treaters. Although the crushed slag can readily be shipped by rail car (among other means), it will still take the industry some time to make alternative transport arrangements (contracting to

use a different type of rolling stock, etc.). The Agency estimates that an additional 90 days is needed to resolve these logistical obstacles. Accordingly, the Agency is extending the compliance date of the prohibition and treatment standards for secondary lead slags exhibiting the toxicity characteristic for one or more metals until November 26, 1998. During this time, the slags will remain subject to the existing LDR treatment standards promulgated in the Third Third Final Rule (55 FR at 22690, June 1, 1990), which standards are codified in the present section 268.40, and will also be subject to any other applicable, ancillary LDR requirements (e.g. tracking and recordkeeping requirements in § 268.7).

Two other points regarding this extension should be noted. First, today's limited extension of the compliance date of the land disposal prohibition and treatment standards affects only the date of compliance. It does not mandate a particular means of compliance. Thus, secondary lead smelters are not obligated to have their characteristic slags treated commercially if there is another means of compliance available. Many secondary lead plants operate their own stabilization equipment, and these on-site stabilization processes may be optimized to achieve the amended treatment standards adopted in the Phase IV final rule (63 FR at 28565). Secondary lead plants remain free to treat their own slags (or to adopt some other means of compliance not requiring shipment of pulverized slag to commercial treatment facilities), provided of course that the waste complies with LDR treatment standards before it is land disposed.

Second, the secondary lead industry has questioned whether the amended UTS for lead nonwastewaters (.75 mg/l in a TCLP extract) is achievable for secondary lead blast furnace slags and has raised this as an issue in a petition for judicial review of the Phase IV Final Rule. EPA believes the standard is achievable, based on the information in the administrative record for the rule. However, today's action briefly delaying the Phase IV compliance date also provides an opportunity to develop further treatment data on this particular waste. Based on reasonable assurances from industry representatives, the Agency expects secondary lead facilities to be forthcoming in providing proper samples (i..e., of the crushed slag) to treaters for the verification testing described earlier, and to allow this information to be utilized (with suitable safeguards for business confidentiality) in confirming (or calling into question) the achievability of the Phase IV metal treatment standards with respect to secondary lead slags. If certain slags cannot be treated to meet the UTS lead nonwastewater of 0.75 mg/L, a treatment variance may be sought under the criteria of § 268.44(h) (i.e., physical or chemical properties of the waste differ significantly from wastes analyzed in developing treatment standard).

III. Legal Authority and Rationale for Immediate Effective Date

This document extending the LDR prohibition date for secondary lead smelting slags is being issued without notice and opportunity for general public comment. Under the Administrative Procedure Act (APA), 5 U.S.C. 553 (b) (B), an agency may forego notice and comment in promulgating a rule when the agency for good cause finds (and incorporates the finding and a brief statement of the reasons for that finding into the rule) that notice and public comment procedures are impracticable, unnecessary, or contrary to the public interest. For the reasons set forth below, EPA finds good cause to conclude that notice and comment would be unnecessary and contrary to the public interest, and therefore is not required.

First, many secondary lead plants are currently in a position of being unable to comply with the existing rule because they are not meeting the treatment standards with their own stabilization processes and have not been able to finalize arrangements with commercial treaters (as explained earlier). An immediate delay of the rule's compliance date for this particular waste is needed to provide further time to make the administrative arrangements necessary for the treatment capacity to become available (again as explained earlier).

EPA believes that this short-term emergency arose even though both the generating and commercial treatment industries acted in good faith in preparing to comply with the standards, so that this is not an artificially manipulated situation created in the hope of delaying the rule's compliance date. (Now that the necessary pretreatment steps are identified and understood, however, EPA will not consider a further extension based on generators' need for more time in making arrangements with commercial treatment facilities.)

Second, EPA has been involved in detailed discussions with both the generating and commercial treatment industries, so that there has been direct notice about the possibility of today's extension to the entities most directly affected by today's action.

EPA therefore concludes that notice and comment would be unnecessary and contrary to the public interest in these special circumstances. For these reasons, EPA believes that there is good cause to issue this extension of the compliance date immediately and without prior notice and comment.

IV. Analysis Under Executive Order 12866, Executive Order 12875, the Paperwork Reduction Act, National Technology Transfer and Advancement Act of 1995, Executive Order 13045, and Executive Order 13084: Consultation and Coordination With Indian Tribal Governments; Congressional Review Directory Act

This action extends the compliance date for treatment standards established in the recently promulgated LDR Phase IV Rule for secondary lead slags that exhibit the toxicity characteristic for metals. Since the rule simply extends the rule's compliance date it imposes no new costs and does not raise novel policy issues. EPA therefore does not consider it to be a ''significant regulatory action'' for the purposes of Executive Order 12866, and it therefore is not subject to executive review under that Order. For the same reason, today's rule also does not impose obligations on State, local or tribal governments for the purposes of Executive Order 12875.

Furthermore, this action is not subject to the Regulatory Flexibility Act (RFA) since this rule is exempt from notice and comment rulemaking requirements for good cause, as explained in Section III. The Administrator is, therefore, not required to certify under the RFA regarding the significance of any economic impact on small entities. However, because today's action simply extends the rule's compliance date for 90 days for one type of waste and does not impose any new costs, the Agency believes that the rule will not have a significant economic impact on a substantial number of small entities.

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Pub L. No. 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable

voluntary consensus standards. There are no voluntary consensus technical standards directly applicable to treatment of secondary lead slags that exhibit the toxicity characteristic for metals. Therefore, EPA did not consider the use of any voluntary standards in today's action.

Today's action is not subject to E.O. 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), because this limited extension of the Phase IV compliance date for one waste is not an economically significant rule, and it is not expected to create any environmental health risks or safety risks that may disproportionately affect children. In that regard, the Agency notes that secondary lead slags will continue to be subject to the currently-existing LDR treatment standards during this ninety day period.

Under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, EPA must consider the paperwork burden imposed by any information collection request in a proposed or final rule. Today's extension of the Phase IV compliance date for one waste will not impose any new information collection requirements and therefore EPA has met all Paperwork Reduction Act obligations.

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. If the mandate is unfunded, EPA must provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation.

In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities. Today's action simply delays the compliance date of Phase IV for one waste for ninety days, and does not significantly or uniquely affect the communities of Indian tribal governments. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a good cause finding that notice and public procedure is impracticable, unnecessary or contrary to the public interest. This determination must be supported by a brief statement. 5 U.S.C. 808(2). As stated previously, EPA has made such a good cause finding, including the reasons therefore, and thus is promulgating this document as a final rule. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Land disposal restrictions.

Dated: August 28, 1998.

Carol M. Browner,

Administrator.

For the reasons set forth in the preamble, title 40 chapter I of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart D—Treatment Standards

2. Section 268.34 is amended by redesignating paragraphs (b) through (e) as paragraphs (c) through (f) and by adding a new paragraph (b) to read as follows:

§ 268.34 Waste specific prohibitions—toxicity characteristic metal wastes.

* * * * *

(b) Effective November 26, 1998, the following waste is prohibited from land disposal: Slag from secondary lead smelting which exhibits the Toxicity Characteristic due to the presence of one or more metals.

* * * * *

[FR Doc. 98–24045 Filed 9–8–98; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 721

[OPPTS–50628B; FRL–6020–7]

RIN 2070–AB27

Certain Chemical Substances; Removal of Significant New Use Rules

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is removing significant new use rules (SNUR) promulgated under section 5(a)(2) of the Toxic Substances Control Act (TSCA) for twelve chemical substances which were the subject of premanufacture notice (PMNs). EPA initially published the SNURs using direct final rulemaking procedures. EPA received a notice of intent to submit adverse comments on this rule. Therefore, the Agency is removing these rules, as required under the expedited SNUR rulemaking process (40 CFR part 721, subpart D). In a separate notice of proposed rulemaking in today's **Federal Register**, EPA is proposing a SNUR for these substances with a 30-day comment period.

EFFECTIVE DATE: This action is effective on September 9, 1998.

FOR FURTHER INFORMATION CONTACT: Susan B. Hazen, Director, Environmental Assistance Division (7408), Office of Pollution Prevention and Toxics, Environmental Protection Agency, Rm. E–531, 401 M St., SW., Washington, DC 20460, telephone: (202) 554–1404, TDD: (202) 554–0551; e-mail: TSCA-Hotline@epa.gov.

SUPPLEMENTARY INFORMATION:

Electronic Availability: Electronic copies of this document are available from the EPA Home Page at the **Federal Register**-Environmental Documents entry for this document under ''Laws and Regulations'' (http://www.epa.gov/fedrgstr/).

I. Background

In the **Federal Register** of January 22, 1998 (63 FR 3393) (FRL–5720–3), EPA issued several direct final SNURs, including SNURs for the twelve chemical substances which are the subject of this document. As described in § 721.160, EPA is removing the

Federal Register

Thursday
September 24, 1998

Part VII

Environmental Protection Agency

40 CFR Parts 268 and 271

Land Disposal Restrictions; Treatment Standards for Spent Potliners From Primary Aluminum Reduction (K088); Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 268 and 271

[FRL–6168–7]

RIN 2050–ZA01

Land Disposal Restrictions; Treatment Standards for Spent Potliners From Primary Aluminum Reduction (K088)

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA is promulgating treatment standards for spent potliners from primary aluminum reduction (EPA hazardous waste: K088) under its Land Disposal Restrictions (LDR) program. The purpose of the LDR program, authorized by the Resource Conservation and Recovery Act (RCRA), is to minimize threats to human health and the environment due to land disposal of hazardous wastes. As a result of today's rule, spent potliners will be prohibited from land disposal unless the wastes have been treated in compliance with the numerical standards contained in this rule. These treatment standards are necessary to minimize threats to human health and the environment from exposure to hazardous constituents which may potentially leach from landfills to groundwater.

EFFECTIVE DATE: September 21, 1998.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. The Docket Identification number is F–98–K88F–FFFFF. To review docket materials, it is recommended that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. The index and some supporting materials are available electronically. See the ''Supplementary Information'' section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 (toll-free) or TDD (800) 553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For specific information, contact Elaine Eby, John Austin, or Katrin Kral, Office of Solid Waste (5302W), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460. Elaine Eby may be reached at 703–308–8449, eby.elaine@epamail.epa.gov; John Austin may be reached at 703–308–0436, austin.john@epamail.epa.gov; and Katrin Kral may be reached at 703–308–6120, kral.katrin@epamail.epa.gov. For information on the capacity analysis, contact C. Pan Lee (5302W) at 703–308–8478, lee.cpan@epamail.epa.gov. For questions on the regulatory impact analysis, contact Paul Borst (5307W) at 703–308–0481, borst.paul@epamail.epa.gov.

SUPPLEMENTARY INFORMATION:

Availability of Rule on Internet

Please follow these instructions to access the rule: From the World Wide Web (WWW), type http://www.epa.gov/rules and regulations.

Affected Entities

Entities potentially affected by this action are generators of spent aluminum potliner from primary aluminum reduction, or entities that treat, store, transport, or dispose of these wastes.

Category	Affected entities
Industry	Generators of the following listed wastes, or entities that treat, store, transport, or dispose of these wastes. K088—Spent potliners from primary aluminum reduction.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. This table lists those entities of which EPA now is aware that potentially could be affected by this action. Other entities not listed in the table also could be affected. To determine whether your facility is regulated by this action, you should examine 40 CFR parts 260 and 261 carefully in concert with the amended rules found at the end of this **Federal Register** document. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT SECTION.**

Table of Contents

I. Background

A. Process Description

K088 (spent potliners from primary aluminum reduction) (40 CFR 261.32) is generated by the aluminum manufacturing industry. Aluminum production occurs in four distinct steps: (1) mining of bauxite ores; (2) refining of bauxite to produce alumina; (3) reduction of alumina to aluminum metal; and (4) casting of the molten aluminum. Bauxite is refined by dissolving alumina (aluminum oxide) in a molten cryolite bath. Next, alumina is reduced to aluminum metal. This reduction process requires high purity aluminum oxide, carbon, electrical power, and an electrolytic cell. An electric current reduces the alumina to aluminum metal in electrolytic cells, called pots. These pots consist of a steel shell lined with brick with an inner lining of carbon. During the pot's service the liner is degraded and broken down. Upon failure of a liner in a pot, the cell is emptied, cooled, and the lining is removed. In 1980, EPA originally listed spent potliners as a RCRA hazardous waste and assigned the hazardous waste code K088. See 45 FR 47832.

B. Regulation

The Phase III—Land Disposal Restrictions Rule (61 FR 15566, April 8, 1996) prohibited the land disposal of spent potliner unless the waste satisfied the section 3004(m) treatment standard established in the same rulemaking. The

Phase III rule established treatment standards, expressed as numerical concentration limits, for various constituents in the waste (25 in all, with standards for both wastewaters and non-wastewaters). These constituents included arsenic, cyanide, fluoride, toxic metals, and a group of organic compounds called polycyclic aromatic hydrocarbons (PAHs).

With the exception of fluoride, the treatment standard limits established for K088 were equivalent to the universal treatment standards. See 61 FR 15585; see also 40 CFR 268.48 (''Universal Treatment Standards'' Table). The fluoride standard, however, was based generally on data submitted in a delisting petition from the Reynolds Metals Company. In the Phase III rule, the Agency granted a nine-month national capacity variance pursuant to section 3004(h)(2) ''to allow facilities generating K088 adequate time to work out logistics.'' See 61 FR 15589. Unexpected performance problems in the Reynolds treatment process resulted in the generation of leachate exhibiting characteristics of hazardous waste. In addition, the company was disposing of the treatment residues in non-subtitle C units. EPA therefore felt that further time was needed to evaluate whether adequate protective treatment capacity was available (within the meaning of RCRA section 3004(h)(2)), and, as part of this determination, whether Reynolds' practices in fact satisfied the mandate of section 3004(m) that threats posed by land disposal of the hazardous waste be minimized through treatment. Until these questions were answered, and a finding of sufficient protective treatment capacity made, there was insufficient treatment capacity for the waste because Reynolds, at the time, was the only existing commercial treatment facility for spent potliners. Consequently, on January 14, 1997, the Agency extended the national capacity variance, and postponed implementing the land disposal prohibition for an additional six months to be able to study the efficacy of the Reynolds treatment process and the resulting leachate. See generally 62 FR 1992.

In July 1997, EPA announced that, ''Reynolds'' treatment (albeit imperfect) does reduce the overall toxicity associated with the waste,'' and that disposal of treatment residues would occur only in units meeting subtitle C standards and consequently was an improvement over the disposal of untreated spent potliner and provided adequate protective treatment capacity. See 62 FR 37696 (July 14, 1997). On October 8, 1997, the national capacity extension ended and the prohibition on land disposal of untreated spent potliner took effect.

C. Litigation

Petitions for judicial review of the Phase III rule, and the January 1997, and July 1997 rules were filed by Columbia Falls Aluminum Company, and other aluminum producers from the Pacific Northwest. The petitioners argued (among other things) that the use of the Toxicity Characteristic Leaching Procedure (TCLP) did not accurately predict the leaching of waste constituents, particularly arsenic and fluoride, to the environment and that it was therefore arbitrary to measure compliance with the treatment standard using this test. The United States Court of Appeals for the District of Columbia Circuit decided on April 3, 1998, that EPA's use of the TCLP as a basis for setting treatment standards for K088 was arbitrary and capricious for those constituents for which the TCLP demonstratively and significantly underpredicted the amount of the constituent which would leach. 139 F.3d 914; see also 63 FR 28571 (May 26, 1998) (EPA's interpretation Court's opinion). Notwithstanding that this finding affected only two of the hazardous constituents for which EPA established treatment standards, namely arsenic and fluoride nonwastewaters (so that only 2 of 54 treatment standards were implicated), and the Court's express statement that ''[o]ur decision today does not affect the viability of the concentration limits established for other constituents,'' 139 F. 3d at 923, the Court vacated all of the treatment standards and the prohibition on land disposal. *Id.* at 923–24. In its decision, the Court expressly invited EPA to file a motion to delay issuance of the mandate in this case for a reasonable time in order to develop a replacement standard. *Id.* On May 18, 1998, EPA filed a motion with the Court to stay its mandate for four months while the Agency promulgated a replacement prohibition and accompanying treatment standards. The motion explained at length the type of standard EPA expected to adopt and in fact is adopting in this document. The Court granted this motion over the objections of Petitioners, indicating that its mandate would not issue before September 24, 1998. Today's action promulgates interim replacement standards for K088 which will be in place until EPA has fully reviewed all information on all treatment processes which may serve as a basis for a more permanent revised standard.

II. Prohibition on Land Disposal of Untreated K088

As just noted, this rule promulgates a land disposal prohibition for K088 waste and establishes interim treatment standards. EPA is issuing this replacement prohibition to assure that the fundamental premise of the statute—a prohibition on land disposal of hazardous waste not satisfying treatment standards which result in substantial destruction or immobilization of the waste—is not weakened. See *Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 22, 25 (D.C. Cir. 1992) (prohibition and treatment standards are the heart of the RCRA hazardous waste management scheme). Congress enacted the prohibition regime due to ''the long-term uncertainties associated with land disposal, the goal of managing hazardous waste in an appropriate manner in the first instance, and the persistence, toxicity, mobility, and propensity to bioaccumulate such hazardous wastes and their hazardous constituents.'' RCRA section 3004(d)(1)(A)–(C). The legislative history states that the statute ''makes Congressional intent clear that land disposal without prior treatment of these wastes with significant concentrations of highly persistent, highly toxic, highly mobile and highly bioaccumulative constituents is not protective of human health and the environment.'' 130 Cong. Rec. S9178 (daily ed. July 25, 1984) (floor statement of Sen. Chafee introducing amendment which became section 3004 (m)).

Spent potliners are exactly this type of waste: highly toxic, containing persistent and bioaccumulative hazardous constituents, and associated with numerous damage incidents arising from improper land disposal. Among the highly toxic, mobile, and bioaccumulative hazardous constituents found in the waste are cyanide, polyaromatic hydrocarbons, and toxic metals. The Agency believes that the land disposal of untreated spent potliners (K088) is a highly undesirable management scenario, that would result in large volumes of hazardous constituents being land disposed, constituents which would otherwise be destroyed or immobilized by treatment.

These untreated hazardous constituents can pose significant threats to human health and the environment. For example, treatment of K088 waste to the interim standards promulgated today will ensure that cyanide—the most dangerous constituent in spent potliners based on its concentration, toxicity, and the extent of

contamination caused by past land disposal of untreated spent potliners—will be largely destroyed. See 62 FR 37696 (July 14, 1997) (spent potliners listed as hazardous due to the presence of cyanide). See also Docket items PH3F–S0015 and S0016 (summary of damage incidents involving improper disposal of spent potliners, showing extensive cyanide contamination of groundwater and soil); see also Section VIII A. below, revising EPA's previous erroneous analysis that cyanide leaching from spent potliners would not pose a threat to groundwater. EPA, in fact, estimates that compliance with the land disposal prohibition and interim treatment standard for cyanide will result in the annual reduction of approximately 300 tons of cyanide being land disposed. Docket item P33F–S0012. Cyanide also will leach from untreated spent potliners in concentrations hundreds of times higher than the highest level observed in leachate from potliners treated to meet existing standards. Docket Item PH3F–S0049A at data set J and 62 FR 37695 (July 14, 1997). EPA thus views the prohibition and treatment standards as reducing by orders of magnitude the amount of cyanide actually leached from these wastes.

In addition, treatment to meet the treatment standards will destroy all the polyaromatic hydrocarbons in spent potliners. These are highly carcinogenic compounds which have caused environmental contamination at the spent potliner damage sites. Docket PH3F–S0015 and S0016. Finally, virtually all of the toxic metals—some of which likewise caused environmental contamination at the damage sites, id.—will be immobilized.

Petitioners nevertheless argue in public comments that EPA should not retain a land disposal prohibition at this time, but rather allow spent potliners to be disposed untreated until the Agency completes its evaluation of different treatment technologies and (potentially) amends treatment standards based upon the performance of these technologies. This result is antithetical to the statutory scheme. Congress has found that land disposal is inherently unsafe because landfills are not capable of assuring long-term containment of certain hazardous wastes, and that land disposal of hazardous waste should be minimized in favor of properly conducted treatment. RCRA sections 1002(b)(7) and 1003(a)(6). Congress therefore intended to end land disposal of hazardous waste without prior treatment: ''The intent here is to require utilization of available technology in lieu of continued land disposal without prior treatment.'' 130 Cong. Rec. S9178 (July 25, 1984) (statement of Sen. Chafee). Petitioners' argument to do no treatment at all because two treatment standards out of 54 are not optimized (and one of which is now being appropriately revised) would frustrate this explicit Congressional intent and EPA's overall commitment to protection of human health and the environment. EPA is simply not willing to permit the continued land disposal of 300 tons of untreated cyanide annually in the face of a statutory scheme calling for untreated land disposal to cease and calling for destruction of cyanide before land disposal. 130 Cong. Rec. S 9179. This is particularly the case when destruction of cyanide (and destruction of PAHs and immobilization of hazardous constituent metals) and consequent minimization of threats will be assured through treatment. Finally, the Congressionally mandated date for prohibiting spent potliners from land disposal—March, 1989 (per RCRA section 3004(g)(4))—has long since passed. Consequently, EPA is acting today to assure that spent potliners remain prohibited from land disposal.

III. Interim Treatment Standards

A. Introduction

EPA has both a short-term and long-term objective for treatment standards for K088 waste. The Agency's long-term goal, expected to be completed within two years, is to promulgate another set of treatment standards for spent potliners (K088) based on the performance of a treatment technology which results in the immobilization of arsenic and fluoride, as well as the other toxic metals in the waste (these metals will be immobilized by meeting the treatment standards established in today's rule). The Agency is aware of numerous technologies that may be used to treat K088 waste, a number of which may be finally coming on line as commercially available.[1] However, at the present time, there are insufficient data or information on these technologies to provide the basis for a rapidly implementable final treatment standard. More information is needed to characterize the performance of these technologies, as well as to assess their safety and (in some cases) the safety of hazardous waste-derived products which may be generated as part of these treatment processes. Cf. *Chemical Waste Management,* 976 F. 2d at 17 (treatment technologies whose air emissions are not adequately controlled are not treating in conformance with requirements of section 3004(m)). The Agency is in the process of gathering and identifying potential technologies that may be evaluated as the basis for a permanently revised treatment standard. EPA is studying technologies such as vitrification, gasification, the ''Cashman Process,'' and the ''Alcoa-Selca'' process. The Agency plans to propose a standard for K088 within the next twelve months.

[1] The Agency notes that although there has been much said about potential marketing of potliner treatment technologies, see 60 FR 11724–11725 (March 2, 1995) (detailing technologies potentially able to treat spent potliners), these technologies were not offered commercially until EPA's promulgation of an actual land disposal prohibition. (The notable exception is the Reynolds Metals process, which the company brought to market a bit before spent potliners were prohibited from land disposal in 1996. *Id.* at 11723.) Without a prohibition further development of commercial treatment thus could easily end. This is another reason EPA believes it imperative to retain the prohibition on land disposal of K088 wastes.

B. Detailed Discussion of the New Treatment Standards

1. Cyanide, Polyaromatic Hydrocarbons, and Certain Metals

The D.C. Circuit found the existing treatment standards arbitrary and capricious because the TCLP was significantly overpredicting the extent to which certain hazardous constituents would be immobilized by treatment. The problem arose because certain constituents in the waste are more soluble in alkaline rather than weakly acidic conditions. Since the TCLP uses a weakly acidic extractant for these constituents, the TCLP was not modeling a reasonable worst case disposal situation at all, but instead was failing to predict what occurs when treated potliners are disposed in industrial landfills. See generally 139 F. 3d at 922.

However, only two of the 54 treatment standards suffer from this deficiency. The treatment standards for cyanide and PAHs do not use the TCLP at all, but rather are implemented on a total constituent concentration basis. (As noted earlier, the Court expressly held that these standards are reasonable. (139 F. 3d at 923.)) Likewise, none of the standards for wastewaters use the TCLP. In addition, none of the standards for metals, except for arsenic and fluoride, suffer from any deficiency even though the TCLP is used to measure compliance. These other metals are not highly alkaline soluble, so that the TCLP will not underpredict environmental performance as occurred with arsenic and fluoride. In fact, leachate sampling data from the Reynolds facility shows reasonable correlation with levels predicted by the TCLP, and further indicates that the TCLP is not

underpredicting leachate levels of these metals. Docket Item P33F–S0002.B.[2]

The Agency is thus today repromulgating those portions of the K088 treatment standard that do not suffer from the deficiencies noted in the Court's opinion. These are the standards for the following constituents in both wastewaters and nonwastewaters: acenapthene, anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthacene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene, pyrene, antimony, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, and cyanide. The nonwastewater treatment standards for cyanide and the organic constituents, and all of the standards for wastewaters, are based on a total composition concentration analysis. The nonwastewater treatment standards for the metal constituents are based on analysis using the TCLP. As noted above, these standards are essential in ensuring that the toxicity of K088 is ''substantially diminished'' and threats to human health and the environment are thereby minimized (RCRA section 3004(m)(2)) through the destruction of cyanides and organics and the immobilization of toxic metals prior to land disposal.

2. Total Arsenic Standard

The Agency is promulgating a revised treatment standard for arsenic in nonwastewater forms of K088, based on a total recoverable arsenic concentration from strong acid digestion, as defined by EPA SW–846 Method 3050, 3051, or the equivalent, hereafter referred to as ''total arsenic.'' This change to the K088 treatment standard addresses the D.C. Circuit's holding that EPA arbitrarily relied on an inaccurately predictive model (the TCLP) in promulgating the K088 treatment standard. The Agency recognizes that for K088 nonwastewaters, arsenic treatment, (i.e., immobilization) may not be accurately predicted through the use of the TCLP because the TCLP uses a weakly acidic extractant, whereas actual disposal conditions are often highly alkaline (due to the potliner's alkalinity), and arsenic is more soluble under highly alkaline than weakly acidic conditions. See 62 FR 1993 (January 14, 1997). Specifically, the TCLP uses a weakly acidic leachate (pH 5.0) which, together with the alkaline treatment residual (K088), results in a leachate pH of approximately 7.6 and not the observed landfill pH of approximately 12.5, at which arsenic is highly mobile. However, because there is no other predictive leaching test available at this time, the Agency has developed an alternative treatment standard for arsenic in K088 nonwastewaters based on the total arsenic present in the treatment residue. As explained below, this total arsenic treatment standard for K088 will be consistent with the current improved performance of the Reynolds process, which has been reconfigured to reduce use of arsenic-containing additives during treatment. The standard also should ensure that the treatment process successfully incorporates the arsenic into the matrix of the treated residual and so minimizes environmental release. This is because arsenic is soluble under strongly acidic conditions, so that the total arsenic analytic method (strong acid digestion) measures all arsenic not incorporated into an impervious silica matrix.

On August 4, 1998 (63 FR 41536), the Agency issued a Notice of Data Availability (NODA) identifying four data sets as possible data sets from which a total arsenic standard could be developed. Two of the data sets represented full-scale data from the treatment of K088 at the Reynolds Metals Company treatment facility[3], and two data sets represented pilot-scale data from vitrification[4] treatment studies. We discuss below the Agency's choice of data set for establishing a revised treatment standard.

The first data set, generated in late 1997 by the Reynolds Metals Company, consists of 30 measurements for total arsenic in treated K088 waste. Total arsenic concentrations ranged from 8.77 to 27.6 mg/kg. Quality assurance/quality control (QA/QC) documentation was provided with the data. The second data set has also been generated by Reynolds and identified as a one-page ''Special Laboratory Report'' (December 6, 1996) showing total arsenic concentrations (mg/kg) for K088 potliner in both the untreated and treated forms. This data set consists of six treated and untreated data pairs. No quality assurance/quality control documentation was provided with these data.

The third data set was submitted to the EPA in 1994 from the Ormet Primary Aluminum Corporation facility in Hannibal, Ohio (see 63 FR 41536, August 4, 1998). These data consisted of arsenic samples, analyzed on a total arsenic basis, taken from a pilot-scale vitrification unit treating K088 waste. This data set consists of five treated and untreated data pairs. Partial quality assurance/quality control documentation was provided with this data set.

The fourth data set, generated in 1997, consists of pilot-scale data from two vitrification studies on K088 waste from two different generators. The first study consisted of only one datum point on total arsenic measuring ''not detected'' (less than 3 mg/kg total arsenic). Total arsenic concentrations (mg/kg) for this second study consisted of seven data points. No quality assurance/quality control nor any waste characterization documentation were provided.

When evaluating any performance data set with regard to its treatment effectiveness on a particular hazardous constituent, the Agency's Land Disposal Restrictions Program (LDR) has specific requirements for any data set evaluated for possible Best Demonstrated Available Technology (BDAT) analysis. A full range of information is necessary to determine whether a treatment and its corresponding performance data warrants further evaluation for possible development of the treatment standard. For example, waste characterization; treatment design and operating conditions; and QA/QC documentation are all necessary components of a ''BDAT quality'' data set. See USEPA ''Final Best Demonstrated Available Technology (BDAT) Background Document for Quality Assurance/ Quality Control Procedures and Methodology,'' Office of Solid Waste, October 23, 1991.

[2] Commenters argued that the TCLP could not be used to measure compliance with these standards under the reasoning of *Columbia Falls,* and that there is no information showing that the acidic leaching media used in the TCLP would be a reasonable predictor for leaching of these metals under alkaline disposal conditions. Comment p. 11. As mentioned in the text, these assertions are not correct. The TCLP is not underpredictive of actual leaching for these wastes because the other metals are not more mobile under alkaline conditions. This is borne out by the actual leachate data (cited above) showing reasonable correlation between predicted and actual leachate levels and, most importantly, confirming that all of the other toxic metals are substantially immobilized as required by section 3004(m).

[3] The Reynolds treatment process entails the crushing and sizing of spent potliner materials (K088), the addition of roughly equal portions of limestone and ''sand'' as flux, and the feeding of the combined mixture to a rotary kiln for thermal destruction of cyanide and PAHs, while reducing the mobility of the fluoride and arsenic in the resulting slag. 62 FR 37694, July 14, 1997.

[4] Vitrification is a treatment process which involves dissolving the waste at high temperatures into glass or a glass-like matrix. High temperature vitrification is applicable to nonwastewaters containing arsenic or other characteristic toxic metal constituents that are relatively nonvolatile at the temperatures at which the process is operated. Volatile arsenic compound are usually converted to nonvolatile arsenate salts such as calcium arsenate prior to the use of this process. See USEPA ''Treatment Technology Background Document'', Office of Solid Waste, January 1991. (Document is available in the docket for today's rule. F–98–K88F–FFFFF)

The Agency has completed a thorough evaluation of the four data sets with regard to BDAT protocols. As discussed above, each data set has certain limitations. Faced with imperfect data, EPA has used the best data available to set this interim standard. EPA has determined that the data set consisting of 30 data points submitted by the Reynolds Metals Company is the most appropriate for development of a total arsenic standard for K088 nonwastewaters. This decision was made for a number of reasons. First, when developing any treatment standard, the Agency attempts to collect as much data as possible to reflect the diversity of the waste stream. With respect to the Reynolds 30-day data, the data satisfy this objective by having the most diverse range of total arsenic concentrations (8.77 to 27.6 mg/kg) in treated spent potliners. In fact, the data represented treatment of spent potliners from 15 of the 23 aluminum producers in the United States.[5] Conversely, the vitrification data sets (covering spent aluminum potliners from three different aluminum facilities) show no such diversity and are limited to five, one, and seven data points respectively. While the Agency does not have untreated data on total arsenic concentrations for the Reynolds 30-day data set, the data are consistent with the other data sets and previously reported maximum arsenic concentrations for untreated and treated spent potliner (56 FR 33004, July 18, 1991).

Second, the Reynolds 30-day data are the most current of the four data sets and contain all the necessary quality assurance quality control documentation, unlike the three other data sets. Third, the Reynolds 30-day data set is based on full-scale data while the vitrification data set is based on pilot-scale treatability studies. EPA as part of its LDR program prefers to use full-scale data when developing treatment standards. See ''Final Best Demonstrated Available Technology (BDAT) Background Document for Quality Assurance/Quality Control Procedures and Methodology,'' Office of Solid Waste, October 23, 1991.

Furthermore, the data should be from an optimized and well run process. Reynolds has endeavored to isolate and remove additional sources of arsenic in their process (by changing treatment reagents) and to lower the pH of the residue, which may further reduce arsenic leachability. Reynolds' original process appeared actually to increase the amount of leachable arsenic in the treated waste, possibly due to the destruction of organic components in the K088 combined with the arsenic levels in the sand that is used as a fluxing agent in the process. 62 FR 37694. Reynolds has recently changed the type of sand used as a fluxing agent (from so-called Brown Sand to Red Clay Sand), and the 30-day data was produced using Reynold's revised process utilizing Red Clay Sand as a treatment additive. Two separate landfill leachate analytical results from Reynolds, dated May 26, 1998 and June 25, 1998, indicate that leachate levels for arsenic in Cell 2 (the cell which is currently accepting treated K088 waste and using Red Clay Sand as a treatment additive) are significantly lower than arsenic levels from the leachate in Cell 1 (no longer receiving treated K088 waste and containing instead the waste generated using the Brown Sand fluxing agent): 15.7 mg/L and 21.6 mg/L (Cell 1) versus 3.82 mg/L and 1.23 mg/L (Cell 2), respectively.[6] This suggests that Reynolds is minimizing the amount of arsenic imported to their treatment process, and further minimizing the amount which is released to the environment in accord with section 3004(m). Accordingly, the Agency has calculated and is promulgating an interim final treatment standard of 26.1 mg/kg total arsenic for nonwastewater forms of K088 based on the Reynolds 30-day data set. The total arsenic standard adopted today ''by using data reflecting this improved performance should ensure the observed reduction in mobile arsenic. EPA thus finds that this new standard does result in significant reduction in arsenic mobility and consequent minimization of threats posed by disposal of spent potliners. See RCRA section 3004(m)(1).

3. Fluoride

The solubility of fluoride ions is largely governed by the metal ions present and pH. The conditions of the TCLP fail to predict the mobility of fluoride under actual disposal conditions, since fluoride is more soluble under highly alkaline conditions (like the conditions of a dedicated monofill, such as utilized by Reynolds), and not the neutral to weakly basic conditions that result during the TCLP test conducted on the highly alkaline K088 potliner. 62 FR 1993. Consequently, the Court held that the TCLP was not a proper predictive model for fluoride mobility from these wastes.

EPA has decided not to develop an interim standard for fluoride. It would take significant technical effort to develop a replacement treatment standard for this constituent and EPA would not be able to meet the D.C. Circuit's deadline of September 24, 1998. The current data are insufficient on which to base a treatment standard that would not be TCLP-based. Therefore, EPA would need to engage in a substantial testing and/or a data gathering effort using alternative test methods. EPA believes that this type of considerable technical resource effort is better directed, given current circumstances, to developing the long-term, more permanent treatment standard described earlier. Moreover, as a practical matter, treatment of K088 potliners to meet the other metal treatment standards will result in some immobilization of fluoride as well.[7] As a result, looking at the totality of additional environmental protection gained from these interim standards for the suite of hazardous constituents involved, we conclude that immediate promulgation of these interim standards (even without a specific fluoride standard) constitutes the best practical approach to minimizing threats to human health and the environment. The issue of fluoride treatment will of course be fully explored as part of the longer-term effort to establish more permanent treatment standards for K088 waste.

IV. Capacity Determination

A. Introduction

This section summarizes the results of the capacity analysis for the wastes covered by today's rule. For a detailed discussion of capacity analysis-related data sources, methodology, and summary of analysis for K088 covered in this rule, see the background documents entitled ''Background Document for Capacity Analysis Update for Land Disposal Restrictions—Phase III: Spent Aluminum Potliners (July 1997)'' (62 FR 37694 i.e., referred to as the ''Capacity Background Document'').

In general, EPA's capacity analysis focuses on the amount of waste to be restricted from land disposal that is currently managed in land-based units and that will require alternative treatment as a result of the LDRs. The quantity of wastes that are not managed

[5] Comment K88A–00002.

[6] These leachate levels are in fact significantly lower than the initial treatment standard (5.0 mg/L measured by the TCLP) for arsenic.

[7] For example, the chief existing treatment process, operated by Reynolds Metals, does provide some treatment of fluoride, on the order of at least 28% reduction in fluoride mobility (based on comparison of fluoride leached from untreated potliners using neutral extractant column tests and levels of fluoride in actual leachate from the Reynolds' disposal unit). Docket Items P33F–S0064 and S0049 Attachment A data set J. This level of treatment will necessarily occur, at least in the Reynolds process, because the process does not treat each constituent selectively.

in land-based units (e.g., wastewater managed only in RCRA exempt tanks, with direct discharge to a Publicly Owned Treatment Works (POTW)) is not included in the quantities requiring alternative treatment as a result of the LDRs. Also, wastes that do not require alternative treatment (e.g., those that are currently treated using an appropriate treatment technology) are not included in these quantity estimates.

EPA's decisions on when to establish the effective date of the treatment standards (e.g., whether to grant a national capacity variance) are based on the availability of appropriate treatment or recovery technologies. Consequently, the methodology focuses on deriving estimates of the quantities of waste that will require either commercial treatment or the construction of new on-site treatment as a result of the LDRs. EPA attempts to subtract from the required capacity estimates the quantities of waste that will be treated adequately either on-site in existing systems or off-site by facilities owned by the same company as the generator (i.e., captive facilities). The resulting estimates of required commercial capacity are then compared to estimates of available commercial capacity. If adequate commercial capacity exists, the waste is restricted from further land disposal before meeting the LDR treatment standards. If adequate capacity does not exist, RCRA section 3004(h)(2) authorizes EPA to grant a national capacity variance for the waste for up to two years or until adequate alternative treatment capacity becomes available, whichever is sooner.

B. Capacity Analysis Results Summary

The D.C. Circuit Court decision vacated the prohibition on land disposal of this waste. EPA therefore needs to make a capacity analysis determination for K088 due to the (nominally) new prohibition of this waste.

As indicated in the Background Documents for Capacity Analysis for Land Disposal Restrictions [8], an accurate projection of annual generation of K088 is difficult to develop. Primary aluminum production rates B one of the key determinants of K088 generation B vary from year to year. Other factors include the differences between potliners in terms of their useful life spans, the lag time between aluminum production and waste generation, and the one-time increases in potliner generation due to production starts and stops. Thus, for the purpose of comparing required treatment capacity to available capacity, EPA combined all the data presented in the Capacity Background Document to estimate that approximately 117,000 tons per year of K088 in the U.S. may require off-site alternative treatment. (See memo to this final rule's docket.)

When estimating the available treatment or recovery capacity, the Agency includes the capacity currently available and operating in its analysis if the facility can meet all treatment standards, including the new treatment standard for arsenic in K088 waste. Available treatment capacity for K088 could vary due to several factors, such as the feed rate of the waste into the treatment unit, downtime of the units, the number of units that will be able to accept K088, and the amount of retreatment needed. Considering these factors, EPA estimates that approximately 120,000 tons per year of capacity could be available for treating K088. (See the Capacity Background Document for detailed analysis and Reynolds' comment to K088 NODA, 63 FR 41536, August 4, 1998.) In addition, one other commercial facility indicated that its treatment process is expected to begin operation sometime this year. Also, additional technologies as mentioned in Section III of this rule are under development and, therefore, additional treatment or recovery capacity may come on-line at on-site or off-site facilities for K088 waste.

Based on the results of the Agency's capacity analysis, adequate commercially available treatment (or recovery) capacity does currently exist for K088 waste. The largely-identical existing prohibition and treatment standards are still in effect, so there are no logistical barriers to immediate compliance. Therefore, LDR treatment standards will become effective immediately for the waste covered under this rule. (See RCRA section 3004(h)(1); land disposal prohibitions must take effect immediately when there is sufficient protective treatment capacity for the waste available).

V. Compliance and Implementation

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments (HSWA) of 1984, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State, and EPA could not issue permits for any facilities that the State was authorized to permit. When new, more stringent Federal requirements were promulgated or enacted, the State was obligated to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in unauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so.

Today's rule is being promulgated pursuant to sections 3004 (g)(4) and (m) of RCRA. Therefore, the Agency is adding today's rule to Table 1 in 40 CFR 271.1(j), which identifies the Federal program requirements that are promulgated pursuant to HSWA. This rule is therefore effective in all states immediately pursuant to RCRA section 3006(g). States may apply for final authorization for the HSWA provisions in Table 1, as discussed in the following section of this preamble.

B. Effect on State Authorization

As noted above, EPA will implement today's rule in authorized States until they modify their programs to adopt these rules and the modification is approved by EPA. Because today's rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive interim or final authorization under RCRA section 3006(g)(2) or 3006(b), respectively, on the basis of requirements that are substantially equivalent or equivalent to EPA's. The procedures and schedule for State program modifications for final authorization are described in 40 CFR 271.21. All HSWA interim authorizations will expire January 1,

[8] Background Document for Capacity Analysis for Land Disposal Restrictions—Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners (Final Rule, February 1996, Volume I Capacity Analysis Methodology and Results, pages 4–5 to 4–8); Background Document for Capacity Analysis Update for Land Disposal Restrictions—Phase III: Spent Aluminum Potliners (Final Rule, July 1997). to the Land Disposal Restrictions Phase III—Emergency Extension of the K088 Capacity Variance; Final Rule (62 FR 37694, July 14, 1997).

2003. (See § 271.24 and 57 FR 60132, December 18, 1992.)

VI. Regulatory Requirements

A. Regulatory Impact Analysis Pursuant to Executive Order 12866

Executive Order No. 12866 requires agencies to determine whether a regulatory action is ''significant.'' The Order defines a ''significant'' regulatory action as one that ''is likely to result in a rule that may: (1) have an annual effect on the economy of $100 million or more or adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.''

The Agency estimated the costs of today's final rule to determine if it is a significant regulation as defined by the Executive Order. Because the treatment standard for K088 promulgated in the Phase III final rule has remained in effect and unchanged except for arsenic and fluoride, treatment costs for spent aluminum potliner have been accounted for in the Phase III final rule rather than today's final rule. Accordingly, EPA believes that there are no costs associated with today's final rule. (According to the Court, none of the standards measured by means other than TCLP were affected by the ruling, 139 F.3d at 923, so no costs should be attributed to treating these constituents under this rule in any case.) However, even in the event that treatment costs are attributed to today's final rule, the upper bound treatment estimate of $42 million is not economically significant according to the definition in E.O. 12866. The Agency has, however, determined that this rule is significant for novel policy reasons.

Discussion of the methodology used for estimating the costs and economic impacts attributable to today's final rule for K088 wastes may be found in the background document ''Economic Assessment for Retention of LDR Treatment Standard for Spent Aluminum Potliner (K088) and Evaluation of Draft Groundwater Pathway Analysis For Aluminum Potliners (K088)'' which was placed in the docket for today's final rule.

1. Methodology Section

The Agency examined reported values for K088 generation from the prior Agency estimates in the Phase III LDR final rule to estimate the volumes of K088 affected by today's rule, to determine the national level incremental costs (for both the baseline and post-regulatory scenarios), economic impacts (including first-order measures such as the estimated percentage of compliance cost to industry or firm revenues).

2. Results

a. Volume Results. Spent potliners (SPL) are generated in large volumes ranging from 95,000 to 125,000 tons annually.[9] EPA estimated an average of approximately 120,000 tons annually for purposes of assessing cost and economic impacts from today's final rule. This estimated generation volume for K088 is greater than the estimate used in the capacity section because it includes not only volumes requiring alternative treatment, but also volumes currently undergoing treatment.

b. Cost Results. As stated above, because this rule only modifies the treatment standard for arsenic, the Agency believes that this rule does not impose incremental treatment costs associated with treating K088. EPA notes that analytical costs associated with sampling treated spent aluminum potliner may actually decrease because the cost of completing a totals analysis for arsenic is less than the comparable cost per sample of a TCLP analysis.[10] For purposes of comparison, the Agency has estimated treatment costs for K088. If annual treatment costs were attributed to today's rule, they would range from $9.6 million to $42 million. EPA previously estimated treatment costs between $6.4 million and $42 million for the LDR Phase III final rule. 61 FR 15566, 15591 (April 8, 1996). EPA notes that new K088 treatment technologies are currently being developed that may significantly lower K088 treatment costs nationally.[11] EPA does not believe that this final rule will create barriers to market entry for firms wishing to provide alternative treatment capacity for spent aluminum potliner. The Agency believes that the net effect of today's rule to modify the existing K088 treatment standard by changing the TCLP test for arsenic to a totals number is unlikely to burden alternative treatment processes currently under development for the treatment of spent aluminum potliner.

c. Economic Impact Results. To estimate potential economic impacts resulting from today's proposed rule, EPA has used first order economic impacts measures such as the estimated costs of today's final rule as a percentage of affected firms' sales and/or revenues. When the annual costs of regulation are less than one percent of a firm's annual sales or revenues, this analysis presumes that the regulation does not pose a significant economic impact on the affected facilities absent information to the contrary. Because EPA does not view this rule as imposing costs, the Agency does not believe that this rulemaking imposes economic impacts on regulated entities. But even if treatment costs are attributed to this rulemaking, no significant economic impact will result. In 1996, U.S. primary aluminum producers sold 3.6 million metric tons of aluminum at an average market price of $1400 per ton yielding total sales of $5.04 billion.[12] The $42 million upper bound of the treatment cost estimate represents only 0.8 percent of the total value of the aluminum sold by primary aluminum producers. It is likely, as discussed, that treatment costs will decrease as new firms develop commercial technologies for K088. As a result, this final rule will not pose a significant economic impact on primary aluminum producers in the United

[9] Background Document for Capacity Analysis for Land Disposal Restrictions, Phase III (February 1996, Volume I, pages 4–5 to 4–8)

[10] One commercial testing laboratory provided an estimate of $40 per sample for an arsenic totals analysis. Today's final rule should lower testing costs overall because the $40 cost of total test for arsenic is less expensive than the $90 to $140 that would be required to run a TCLP test for arsenic for a treated residue.

[11] For example, previously Reynolds Metals Company has provided data indicating that the treatment and disposal cost of their process, though variable depending on a series of factors, is between $200 and $500 per ton. Personal Communication with Jack Gates, Vice-President, Reynolds Metals Company, September 28, 1994 as cited in Regulatory Impact Analysis of the Phase III Land Disposal Restrictions Final Rule, U.S. Environmental Protection Agency, Office of Solid Waste, February 15, 1996. Recently, Waste Management has quoted treatment and disposal charges at $160 per ton for treatment capacity now being developed at its Arlington, Oregon facility. Letter from Mitchell S. Hahn, Manager, Environment Health and Safety, Waste Management Inc. to Paul A. Borst, Economist, USEPA, Office of Solid Waste, June 4, 1998. The Waste Management treatment and disposal charge is determined by subtracting the $85 storage price from a new customer price of $245 per ton. Transportation costs are not factored into this estimate. Of the $160 per ton treatment and storage cost, $80 per ton is attributable to treatment and $80 is attributable to disposal. Personal Communication between Mitch Hahn, Chemical Waste Management, and Paul Borst, U.S.E.P.A. August 13, 1998.

[12] Mineral Commodity Summaries 1997, U.S. Department of the Interior, U.S. Geological Survey, February 1997, p. 18.

States. More detailed information on this estimate can be found in the economic assessment placed into today's docket.

d. Benefits Assessment. EPA has not calculated benefits associated with the total limitation on arsenic in today's final rule. Because today's final rule promulgates a prohibition and treatment standard for K088 with modest changes from the previous treatment standard for K088, the Agency believes that there is only likely to be a modest risk reduction because most of the risk reduction has already been accounted for through the K088 treatment standard in the Phase III final rule (as has the cost of treatment), although, as noted earlier, the total arsenic standard will ensure the minimization of leachable arsenic, as shown by recent monitoring data. However, the Agency wishes to correct an error in previous groundwater risk analysis for K088 with respect to cyanide.

EPA's groundwater risk analysis for K088 completed for the Phase III rulemaking indicated that cyanide did not pose a risk to human health.[13] A review of the analysis indicates that the analysis results may have underestimated groundwater risk from cyanides in potliners for a variety of reasons. First, the analysis modeled cyanide ion, CN^- (CAS # 57–12–5), as the cyanide species being considered for mobilization.[14] However, other data indicate that ferrocyanide, $Fe(CN)_6^{-4}$ (CAS # 13408–63–4), rather than cyanide ion is the prevalent cyanide species in spent potliner leachate typically accounting for 89 percent of total cyanide present.[15] This is significant because cyanide ion may be less persistent in the environment than ferrocyanide. Cyanide ion may decompose in soil environments through hydrolysis, biodegradation or other means. Ferrocyanide is an extremely persistent cyanide species.[16] Ferrocyanide mobility may be limited in soil but yet retains the ability to form more toxic forms of cyanide—either hydrogen cyanide or free cyanide decomposition products.[17]

In addition, the groundwater risk analysis modeled K088 cyanide leachate concentrations in a manner lower than what real-world experience has shown. The analysis modeled approximate TCLP cyanide concentrations of 110 ppm.[18] However, in its K088 listing background document, EPA noted slab liquor (the runoff from concrete slabs on which spent potliners were placed during open storage) total cyanide concentrations of 13,000 mg/L total cyanide, more than two orders of magnitude greater than leachate concentration used in the modeling analysis.[19] A second source reports typical cyanide concentrations in potliner leachate at 5000 ppm.[20] See also Docket Item P33F–S0049A data set J (column testing of untreated potliners with neutral extractant showing cyanide concentrations between 1325 and 2885 ppm.)

Third, EPA's groundwater analysis may have underestimated groundwater risk from cyanide by not accounting for high pH conditions caused by the alkalinity of the potliner itself. The analysis used a national distribution of pH values for the saturated zone parameters from EPA's STORET database. This national distribution modeled low (4.9), medium (6.8) and high (8.0) values. However, the pH of the saturated zone in a site where spent potliner is leaching may be substantially higher than the national distribution. Spent aluminum potliner typically has a pH of 12.3 to 12.6.[21] Under these elevated pH conditions, volatilization of cyanide ion as hydrogen cyanide gas, and hydrolysis and biodegradation are limited so cyanide available to contaminate groundwater would not be attenuated (as initially incorrectly modeled).[22]

Finally, at least four damage incidents to groundwater from cyanides from disposed potliner demonstrate the potential of cyanide in this waste to contaminate groundwater. In EPA's listing background document for spent potliner, the Agency documents cyanide contamination of drinking water wells in Washington State from Kaiser Aluminum's Mead Works facility near the Spokane aquifer. Some drinking water wells had levels of cyanide of 1 ppm exceeding the maximum contaminant level (MCL) of 0.2 ppm.[23] In addition, cyanide concentrations in leachate from a landfill containing potliner at a primary aluminum smelter site on the National Priority List (NPL) ranged between 373 and 1280 ppm.[24] Additional damage incidents showing cyanide groundwater contamination caused by improper disposal of spent potliners are summarized at Docket item PH3F–S0015. EPA thus believes the risks of groundwater contamination due to potliner disposal were incorrectly understated in the earlier RIA, and hereby withdraws the earlier conclusions regarding the low possibility and nature of cyanide contamination. Moreover, given the long-term inability of Subtitle C disposal to fully contain hazardous wastes, see RIA for Phase III final rule at 4–13 (Feb. 1996); and Inyang and Tomassoni, *Indexing of Long-Term Effectiveness of Waste Containment Systems for a Regulatory Impact Analysis,* EPA OSW (Nov. 1992), and the demonstrated cyanide contamination of exceeding health-based levels of groundwater already caused by improper disposal of these wastes, EPA finds that disposal of untreated potliners does pose a risk of cyanide contamination of groundwater at levels harmful to human health.

B. Regulatory Flexibility

The Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement and Fairness Act, 5 U.S.C. 601–612, generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. However, the Agency has determined that this final rule is not subject to the Regulatory Flexibility Act (RFA) and, moreover, it will not have a significant economic impact on a substantial number of small entities.

First, by its terms, the RFA applies only to rules subject to notice-and-comment rulemaking requirements under the Administrative Procedure Act (APA) or any other statute. Today's rule is not subject to notice and comment requirements under the APA or any other statute. Although today's rule is

[13] Groundwater Pathway Analysis for Aluminum Potliners (K088), Draft, U.S. Environmental Protection Agency, Office of Solid Waste, February 16, 1996. Tables 3–2 and 3–3.

[14] *Ibid.* p. 9.

[15] F.M. Kimmerle, et al., ''Cyanide Destruction in Spent Potlining.'' Light Metals 1989, Proceedings of the Technical Sessions by the TMS Light Metals Committee, 117th TMS Annual Meeting. Phoenix Arizona, January 25–28, 1988 as cited in Jim Mavis, CH2M Hill, ''Aluminum Industry'' in *Pollution Prevention Handbook,* ed. Thomas Higgins (Boca Raton: CRC Press, 1995), p.379.

[16] Adrian Smith and Terry Mudder, *Chemistry and Treatment of Cyanidation Wastes* (London: Mining Journal Books Ltd, 1991) p.11.

[17] U.S.E.P.A., Listing Background Document—Primary Aluminum Production/Spent Potliners from Primary Aluminum Production, p.7.

[18] Groundwater Pathway Analysis, p.9.

[19] Listing Background Document, p.5.

[20] Kimmerle as cited in Mavis, supra note 6, p.379.

[21] Special Laboratory Report, Reynolds Metals Company, 1996.

[22] Adrian Smith and Terry Mudder, *Chemistry and Treatment of Cyanidation Wastes* (London: Mining Journal Books Ltd, 1991) p.49, 64, and 82.

[23] K088 Listing Background Document, p.8.

[24] Record of Decision, Martin Marietta Corp., RODS DATA, September 29, 1988.

subject to the APA, the Agency has invoked the ''good cause'' exemption under APA section 553(b). As discussed below, the good cause exemption provides the notice and comment rulemaking requirements of the APA do not apply to a rulemaking when an agency finds them to be impracticable, unnecessary or contrary to the public interest.

Second, the Agency nonetheless has assessed the potential of this rule to adversely impact small entities. The Agency finds that this final rule does not have the potential to adversely impact small entities. As discussed above, today's final rule does not impose incremental costs to regulated entities. Also, the Agency has evaluated K088 treatment costs previously accounted for under the Phase III final rule and determined that even if these costs were attributed to today's final rule, they would not exceed 1 percent of the sales of small entities subject to this final rule. More information on this analysis can be found in the background document ''Economic Assessment for Retention of LDR Treatment Standard for Spent Aluminum Potliner (K088) and Evaluation of Draft Groundwater Pathway Analysis For Aluminum Potliners (K088)'' placed in the public docket.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. No. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under Section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate. The rule would not impose any federal intergovernmental mandate because it imposes no enforceable duty upon State, tribal or local governments. States, tribes and local governments would have no compliance costs under this rule. It is expected that states will adopt similar rules, and submit those rules for inclusion in their authorized RCRA programs, but they have no legally enforceable duty to do so. For the same reasons, EPA also has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. In addition, as discussed above, the private sector is not expected to incur costs exceeding $100 million. By these findings, EPA has fulfilled the requirement for analysis under the Unfunded Mandates Reform Act.

D. Executive Order 12875: Enhancing the Intergovernmental Partnership

To reduce the burden of Federal regulations on States and small governments, President Clinton issued Executive Order 12875 on October 26, 1993, entitled ''Enhancing the Intergovernmental Partnership.'' Under Executive Order 12875, EPA may not issue a regulation that is not required by statute unless the Federal Government provides the necessary funds to pay the direct costs incurred by the State and small governments or EPA provides to the Office of Management and Budget both a description of the prior consultation and communications the agency has had with representatives of State and small governments and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process allowing elected and other representatives of State and small governments ''to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates.''

For the reasons described above, today's final rule will not impose any enforceable duty or contain any unfunded mandate upon any State, local, or tribal government; therefore Executive Order 12875 does not apply to this action.

E. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

The Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997), applies to any rule that EPA determines (1) ''economically significant'' as defined under Executive Order 12866, and (2) the environmental health or safety risk addressed by the rule has a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children; and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. This final rule is not subject to E.O. 13045 because this is not an economically significant regulatory action as defined by E.O. 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. The Agency has concluded this because this rulemaking establishes treatment standards for hazardous constituents in spent aluminum potliner that minimize both short-term and long-term threats to human health and the environment. The environmental health risks or safety risks addressed by this action do not have a disproportionate effect on children.

F. Environmental Justice E.O. 12898

EPA is committed to addressing environmental justice concerns and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income bears disproportionately high and adverse human health and environmental impacts as a result of EPA's policies, programs, and activities, and that all people live in clean and sustainable communities. In response to Executive Order 12898 and to concerns voiced by many groups outside the Agency, EPA's Office of Solid Waste

and Emergency Response formed an Environmental Justice Task Force to analyze the array of environmental justice issues specific to waste programs and to develop an overall strategy to identify and address these issues (OSWER Directive No. 9200.3–17).

Today's final rule covers K088 spent potliner wastes from primary aluminum operations. It is not certain whether the environmental problems addressed by this rule could disproportionately affect minority or low income communities due to the location of primary aluminum operations. However, because today's final rule establishes treatment standards for K088 being land disposed, the Agency does not believe that today's rule will increase risks from K088. Indeed, as discussed earlier, these treatment standards will ensure that risks to human health and the environment are minimized for all communities. It is, therefore, not expected to result in any disproportionately negative impacts on minority or low income communities relative to affluent or non-minority communities.

G. Paperwork Reduction Act

To the extent that this rule imposes any information collection requirements under existing RCRA regulations promulgated in previous rulemakings, those requirements have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, and have been assigned OMB control numbers 2050–120 (ICR no. 1573, Part B Permit Application); 2050–120 (ICR 1571, General Facility Standards); 2050–0028 (ICR 261, Notification to Obtain an EPA ID); 2050–0034 (ICR 262, Part A Permit Application); 2050-0039 (ICR 801, Hazardous Waste Manifest); 2050–0035 (ICR 820, Generator Standards); and 2050–0024 (ICR 976, Biennial Report).

H. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Pub. L. No. 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

EPA is not aware of existing voluntary consensus standards that could be used for treatment standards of spent aluminum potliner. EPA believes that such voluntary consensus standards are therefore unavailable. This rulemaking also involves environmental monitoring or measurement. As stated above, this final rule promulgates a revised treatment standard for arsenic in nonwastewater forms of K088, based on a total recoverable arsenic concentration from strong acid digestion as defined by EPA SW–846 Method 3050, 3051 or the equivalent. Consistent with the Agency's Performance Based Measurement System (PBMS), EPA has decided not to require the use of specific, prescribed analytic methods. Rather, the rule will allow the use of any method that meets the prescribed performance criteria. The PBMS approach is intended to be more flexible and cost-effective for regulated entities. It is also intended to encourage innovation in analytical technology and improve data quality. EPA is not precluding the use of any method, whether it constitutes a voluntary consensus standard or not, as long as it meets the performance criteria specified.

I. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments. If the mandate is unfunded, EPA must provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. Aluminum potliners are not currently generated or treated on any known Indian tribal lands. Today's rule does not create a mandate on State, local or tribal governments. The rule does not impose any enforceable duties on these entities. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a rule effective sooner than otherwise provided by the CRA if the agency makes a good cause finding that notice and public procedure is impracticable, unnecessary or contrary to the public interest. This determination must be supported by a brief statement. 5 U.S.C. 808(2). In the following section, EPA has made such a good cause finding, including the reasons therefore, and established an effective date of September 21, 1998. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VII. Good Cause for Immediate Final Rule

Under the Administrative Procedure Act (APA), 5 U.S.C. 553(b)(B), an agency may forego notice and comment in promulgating a rule when the agency for good cause finds (and incorporates the finding and a brief statement of the reasons for that finding into the rule) that notice and public comment procedures are impracticable, unnecessary, or contrary to the public interest. For the reasons set forth below, EPA finds good cause to conclude that notice and comment would be unnecessary and contrary to the public interest, and therefore is not required under the APA.

EPA believes that notice and opportunity for comment has been provided here, albeit not through the means of a proposed rule. The Agency has been in protracted discussions with

the regulated community both directly and through court pleadings. Therefore, members of the regulated community have had opportunity to comment and make their views known. Most recently, the Agency provided for specific notice and comment on the data to be used in the development of a standard based on total arsenic content in treatment residue. See 63 FR 41536, August 4, 1998. EPA received comments addressing every aspect of these standards in response to this document, and is responding to these comments in this preamble and also in a separate Response to Comment Background Document. Furthermore, other than for the arsenic standard, this document makes conforming changes that reinstate and maintain the current standards which were already the subject of exhaustive notice and comment in both the Phase III rulemaking and in response to the January 14 document extending the national capacity variance date. Petitioners in the K088 litigation, for example, filed a multitude of different comments in response to these various documents. Further opportunity to comment therefore is not necessary.

Consequently, EPA today is preserving the core of the K088 treatment standards promulgated in the Phase III rule by ensuring that the K088 wastes are prohibited from land disposal unless they first meet the treatment standards in this rule. At the same time, EPA is eliminating the standards found to be arbitrary by the Court. The Agency also concludes that this action must be taken immediately and that notice and comment would be contrary to the public interest in these special circumstances. Delay past the projected date of issuance of the Court's mandate (September 24, 1998) could result in land disposal of untreated spent potliners, contrary to explicit statutory command that land disposal of this waste be prohibited. (See as well the earlier discussion in this Preamble of the need to assure that this prohibition does not lapse.) For these reasons, EPA believes that there is good cause to issue this final rule immediately without prior notice and comment. This is not to say that EPA would, or could, invoke this type of good cause rationale whenever contemplating promulgation of LDR prohibitions and treatment standards. However, in the present circumstances, where the waste already is prohibited and untreated land disposal of the waste has therefore ended, it appears especially important to avoid backsliding to a regime of untreated land disposal.

For the same reasons, EPA finds, for purposes of 5 U.S.C. 553(d), that there is good cause to make the rule effective immediately. In any case, the statute indicates that LDR prohibitions are to take effect immediately. See RCRA section 3004(h)(1). (Prohibitions on land disposal are effective immediately so long as there is adequate protective treatment capacity available at that time.)

List of Subjects

40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous material transportation, Hazardous waste, Indians-lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

Dated: September 21, 1998.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

1. The authority for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

2. Section 268.39 is amended by revising paragraphs (c) to read as follows:

§ 268.39 Waste specific prohibitions—spent aluminum potliners; and carbamate wastes.

* * * * *

(c) On September 21, 1998, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

* * * * *

3. Section 268.40 is amended by revising the entry for K088 in the table of Treatment Standards to read as follows: (The footnotes are republished without change.)

BILLING CODE 5460–50–P

TREATMENT STANDARDS FOR HAZARDOUS WASTES Note: NA means not applicable					
WASTE CODE	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common Name	CAS[2] Number	Concentration in mg/L[3], or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/L TCLP", or Technology Code
* * * * *	* *				
K088	Spent potliners from primary aluminum reduction.	Acenaphthalene	83-32-9	0.059	3.4
		Anthracene	120-12-7	0.059	3.4
		Benzo(a)anthracene	56-55-3	0.059	3.4
		Benzo(a)pyrene	50-32-8	0.061	3.4
		Benzo(b)fluoranthene	205-99-2	0.11	6.8
		Benzo(k)fluoranthene	207-08-9	0.11	6.8
		Benzo(g,h,i)perylene	191-24-2	0.0055	1.8
		Chrysene	218-01-9	0.059	3.4
		Dibenz(a,h)anthracene	53-70-3	0.055	8.2
		Fluoranthene	206-44-0	0.068	3.4
		Indeno(1,2,3,-c,d)pyrene	193-39-5	0.0055	3.4
		Phenanthrene	85-01-8	0.059	5.6
		Pyrene	129-00-0	0.067	8.2

Antimony	7440-36-0	1.9	1.15 mg/L TCLP
Arsenic	7440-38-2	1.4	26.1 mg/kg
Barium	7440-39-3	1.2	21.0 mg/L TCLP
Beryllium	7440-41-7	0.82	1.22 mg/L TCLP
Cadmium	7440-43-9	0.69	0.11 mg/L TCLP
Chromium (Total)	7440-47-3	2.77	0.60 mg/L TCLP
Lead	7439-92-1	0.69	0.75 mg/L TCLP
Mercury	7439-97-6	0.15	0.025 mg/L TCLP
Nickel	7440-02-0	3.98	11.0 mg/L TCLP
Selenium	7782-49-2	0.82	5.7 mg/L TCLP
Silver	7440-22-4	0.43	0.14 mg/L TCLP
Cyanide (Total)[7]	57-12-5	1.2	590
Cyanide (Amenable)[7]	57-12-5	0.86	30
* * * * *	* *		

* * * * *

BILLING CODE 6560–50–C

Footnotes to Treatment Standard Table 268.40

1 The waste descriptions provided in this table do not replace waste descriptions in 40 CFR part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

2 CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

3 Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.

4 All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

5 Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * *

7 Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

4. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

5. Section 271.1(j) is amended by adding the following entries to Table 1 and Table 2 in chronological order by date of publication to read as follows.

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of Regulation	Federal Register reference	Effective date
* * * * * * *			
Sept. 21, 1998	Treatment Standards for Hazardous Waste K088.	[insert Federal Register page numbers]	Sept. 21, 1998
* * * * * * *			

TABLE 2—SELF-IMPLEMENTING PROVISIONS OF THE SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
* * * * * * *			
Sept. 21, 1998	Prohibition on land disposal of K088 wastes, and prohibition on land disposal of radioactive waste mixed with K088 wastes, including soil and debris.	3004(g)(4)(C) and 3004(m)	Sept. 24, 1998 [Insert FR page numbers].
* * * * * * *			

[FR Doc. 98–25643 Filed 9–23–98; 8:45 am]

BILLING CODE 6560–50–P

Federal Register

Thursday
January 21, 1999

Part V

Environmental Protection Agency

40 CFR Parts 262, 264, and 265

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 262, 264, and 265

[IL–64–2–5807; FRL–6221–9]

RIN 2060–AG44

Hazardous Waste Treatment, Storage, and Disposal Facilities and Hazardous Waste Generators; Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; clarification and technical amendment.

SUMMARY: Under the authority of the Resource Conservation and Recovery Act (RCRA), as amended, the EPA has promulgated standards (59 FR 62896, December 6, 1994) to reduce organic air emissions from certain hazardous waste management activities to levels that are protective of human health and the environment. (The standards are known colloquially as the ''subpart CC'' standards due to their inclusion in subpart CC of parts 264 and 265 of the RCRA subtitle C regulations). These air standards control organic emissions from certain tanks, containers, and surface impoundments (including tanks and containers at generators' facilities) used to manage hazardous waste capable of releasing organic waste constituents at levels which can harm human health and the environment.

Since publication of the final standards on December 6, 1994, the EPA has given public notice and taken comment on several proposed revisions to the final rule, and has made corresponding amendments. In response to public comments and inquiries, today's action makes clarifying amendments to certain regulatory text and reestablishes certain regulatory provisions that were previously contained in the rules and later inadvertently removed.

DATES: These amendments are effective January 21, 1999.

ADDRESSES: *Docket.* The supporting information used for the subpart CC rulemaking is available for public inspection and copying in the RCRA docket. The RCRA docket numbers pertaining to this rulemaking are F–91–CESP–FFFFF, F–92–CESA–FFFFF, F–94–CESF–FFFFF, F–94–CE2A–FFFFF, F–95–CE3A–FFFFF, F–96–CE3F–FFFFF, and F–96–CE4A–FFFFF. The RCRA docket is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia.

Review of docket materials is conducted at the Virginia address; the public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA docket office is RCRA Information Center (5305W), U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: For general information about the RCRA Air Rules, or specific rule requirements of RCRA rules, please contact the RCRA Hotline, toll-free at (800) 424–9346. Contacts for specific information are listed in the ''Supplementary Information'' section of this preamble.

SUPPLEMENTARY INFORMATION:

Regulated Entities

The entities potentially affected by this action include:

Category	Examples of regulated entities
Industry	Businesses that treat, store, or dispose of hazardous waste and are subject to RCRA subtitle C permitting requirements, or that accumulate hazardous waste on-site in RCRA permit-exempt tanks or containers pursuant to 40 CFR 262.34(a).
Federal Government	Federal agencies that treat, store, or dispose of hazardous waste and are subject to RCRA subtitle C permitting requirements, or that accumulate hazardous waste on-site in RCRA permit-exempt tanks or containers pursuant to 40 CFR 262.34(a).

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be interested in the amendments to the regulation affected by this action. To determine whether your facility is regulated by this action, you should carefully examine the applicability criteria in § 264.1030 and § 265.1030 of the RCRA subpart AA rules, § 264.1050 and § 265.1050 of the RCRA subpart BB rules, and § 264.1080 and § 265.1080 of the RCRA subpart CC air rules.

Informational Contacts

If you have questions regarding the applicability of this action to a particular situation, or questions about compliance approaches, permitting, enforcement and rule determinations, please contact the appropriate regional representative in the table below:

Region I:
Stephen Yee, (617) 565–3550
Jim Gaffey, 565–3437
U.S. EPA, Region I
JFK Federal Building
Boston, MA 02203–0001

Region II:
Abdool Jabar, (212) 637–4131
John Brogard, 637–4162
Jim Sullivan, 637–4138
U.S. EPA, Region II
290 Broadway
New York, NY 10007–1866

Region III:
Linda Matyskiela, (215) 566–3420
Andrew Clibanoff, 566–3391
U.S. EPA, Region III
841 Chestnut Building
Philadelphia, PA 19107

Region IV:
Denise Housley, (404) 562–8495
Rick Gillam, 562–8498
Jan Martin, 562–8593
Anita Shipley, 562–8466
Donna Wilkinson, 562–8490
Judy Sophianolpoulos, 562–8604
David Langston, 562–8588
U.S. EPA, Region IV
61 Forsyth Street
Atlanta, GA 30303

Region V:
Jae Lee, (312) 886–3781
Uylaine McMahan, 886–4454
Mike Mikulka, 886–6760
Ivonne Vicente, 886–4449
Wen Huang, 886–6191
U.S. EPA, Region V
77 West Jackson Street
Chicago, IL 60604

Region VI:
Michelle Peace, (214) 665–7430
Teena Wooten, 665–2279
U.S. EPA, Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202–2733

Region VII:
Ed Buckner, (913) 551–7621
Ken Herstowski, 551–7631
U.S. EPA, Region VII
726 Minnesota Avenue
Kansas City, KS 66101

Region VIII:
Mindy Mohr, (303) 312–6525
Janice Pearson, 312–6354
U.S. EPA, Region VIII
999 18th Street, Suite 500
Denver, CO 80202–2466

Region IX:
Stacy Braye, (415) 774–2056
Jean Daniel, 774–2128
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Region X:
Linda Liu, (206) 553–1447
David Bartus, 553–2804
U.S. EPA, Region X

1200 Sixth Avenue
Seattle, WA 98101

For questions about testing or analytical methods mentioned in this document, please contact Ms. Rima Dishakjian, Emission Measurement Center (MD–19), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–0443. For information concerning the analyses performed in developing this rule, contact Ms. Michele Aston, Emission Standards Division (MD–13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541–2363, electronic mail address, aston.michele@epa.gov.

Background

Section 3004(n) of RCRA requires EPA to develop standards to control air emissions from hazardous waste treatment, storage, and disposal facilities (TSDF) as may be necessary to protect human health and the environment. This requirement echoes the general requirement in RCRA section 3004(a) and section 3002(a)(3) to develop standards to control hazardous waste management activities as may be necessary to protect human health and the environment. The Agency has issued a series of regulations to implement the section 3004(n) mandate; these regulations control air emissions from certain process vents and equipment leaks (part 264 and part 265, subparts AA and BB), and emissions from certain tanks, containers, and surface impoundments (the subpart CC standards, which are the primary subject of today's action).

The EPA today is making technical amendments to the final subpart AA and CC standards, and providing interpretations for certain provisions of those rules. Since the publication of the final subpart CC rule (59 FR 69826, December 4, 1994), the EPA has published four **Federal Register** documents that delayed the effective date of that rule, i.e., 60 FR 26828, May 19, 1995; 60 FR 56952, November 13, 1995; 61 FR 28508, June 5, 1996; 61 FR 59931, November 25, 1996). The November 1996 notice established the ultimate effective date of December 6, 1996. The EPA has also issued an indefinite stay of the standards specific to units managing wastes produced by certain organic peroxide manufacturing processes (60 FR 50426, September 29, 1995).

On August 14, 1995, the EPA published a **Federal Register** document entitled, ''Proposed rule; data availability'' (60 FR 41870) and opened RCRA docket F–95–CE3A–FFFFF to accept comments on revisions that the EPA was considering for the final subpart CC standards. The EPA accepted public comments on the appropriateness of these revisions through October 13, 1995. Throughout 1996 and 1997, the EPA engaged in repeated discussions with representatives of the groups filing petitions for review challenging the subpart CC standards.

To further inform the affected public of the major clarifications, compliance options, and technical amendments being considered, the EPA conducted a series of seminars during August and September of 1995. At that time, a total of six seminars were held nationally. An updated series of six seminars was held in September through December 1996 and two additional seminars were held March and April of 1997 in conjunction with an industry trade association. (Refer to EPA RCRA Docket No. F–95–CE3A–FFFFF.) During these seminars, additional comments were received on the RCRA air rules for tanks, surface impoundments, and containers.

On February 9, 1996, the EPA published a **Federal Register** document (61 FR 4903), ''Final rule; technical amendment,'' which made clarifying amendments in the regulatory text of the final standards, corrected typographical and grammatical errors, and clarified certain language in the preamble to the final rule to better convey the EPA's original intent.

On November 25, 1996, the EPA published a **Federal Register** document (61 FR 59932), ''Final rule'' that amended provisions of the final subparts AA, BB, CC rules to better convey the EPA's original intent, to provide additional flexibility to owners and operators who must comply with the rules, and to change the effective date of the requirements contained in the subpart CC rules to be December 6, 1996.

On December 8, 1997, the EPA published a **Federal Register** document (62 FR 64636), ''Final rule; clarification and technical amendment'' that amended provisions of the final subparts AA, BB, CC rules to clarify the regulatory text of the final standards; interpret those standards; correct typographical, printing, and grammatical errors; and clarify certain language published in the preambles of previous **Federal Register** documents.

Today's action makes technical amendments to the final subpart AA and CC rules in order to further clarify the regulatory text of the final standards; interpret those standards; and correct typographical, printing, and grammatical errors.

Outline.

The information presented in this preamble is organized as follows:

I. Subpart B—General Facility Standards

Today's action replaces the references to the subpart AA, BB, and CC standards in §§ 262.34(a)(1)(i) and 262.34(a)(1)(ii) as standards that must be met as conditions where a generator may accumulate hazardous waste on-site for 90 days or less without a RCRA permit or without having interim status. The references to subparts AA, BB, and CC were removed mistakenly by the November 25, 1996, **Federal Register** notice (61 FR 59950). At the time, it was thought that, since the subparts were also referenced in Subpart I—Use and Management of Containers at § 264.179 and in Subpart J—Tank Systems at § 264.200, the references in § 262.34, Accumulation time, were redundant. It was later determined that the references to subparts AA, BB, and CC are needed for clarity and the permit exemption criteria are being replaced by today's notice.

II. Subpart AA: Air Emission Standards for Process Vents

The definition of ''equipment'' contained in subpart AA at § 254.1031 is being revised to include ''other connectors'' in the list of components that are considered equipment under the subpart BB Air Emission Standards

for Equipment Leaks. The applicability section of the subpart BB rules states that the ''subpart applies to equipment that contains or contacts hazardous waste * * *'' However, when the subpart BB rules were originally promulgated in June of 1990 (55 FR 25495) the term ''other connectors'' was inadvertently left out of the equipment definition; this has caused some uncertainty regarding applicability of the rule to other connectors. Nonetheless, it is clear that the EPA intended other connectors to be included in the list of equipment covered by the rule. This is demonstrated by the fact that the term ''other connectors'' is used throughout § 264.1058 and § 265.1058 of the subpart BB standards whenever the equipment that is covered by this section of the rule is listed. Also, the preamble to the final subpart BB rules in Section V.C (i.e., Applicability and Requirements of Today's Final Standards) clearly states in discussing affected equipment at 55 FR 25465 (June 21, 1990) that ''* * * flanges and *other connectors* must be monitored within 5 days by Reference Method 21 if evidence of a potential leak is found * * *'' In addition, the original Clean Air Act equipment leak rules (i.e., subpart VV in 40 CFR 60.481) that served as the technical basis for the RCRA subpart BB equipment leak standards do include the term ''other connector'' in the definition of equipment subject to the rule. To correct this oversight, the definition of ''equipment'' contained in subpart AA at § 254.1031 is being revised to include ''other connectors'' in the list of components that are considered equipment under subpart BB.

The definition for ''open-ended valve or line'' is being amended to replace the term ''process fluid'' with the words ''hazardous waste.'' The definition has included the term ''process fluid'' to characterize an open-ended valve or line since the rule was originally published on June 21, 1990 (55 FR 25495); i.e., ''* * * one side of the valve seat in contact with process fluid and one side open to the atmosphere * * *'' It was recently brought to the EPA's attention that the definition should use the term ''hazardous waste'' rather than ''process fluid'', since the subpart BB rules only apply to equipment (e.g., an open-ended valve or line) that contains or contacts hazardous waste as stated in the applicability sections at § 264.1050(b) and § 265.1050(b). In addition, the RCRA air rules for open-ended valves or lines (at § 264.1056 and § 265.1056) clearly refer to the material or fluid in the valve or line as being hazardous waste. Therefore, as a part of today's action the definition is being revised to avoid any confusion regarding what constitutes an open-ended line or valve.

Also within subpart AA, a definition is being added for ''sampling connection system.'' This is being done in order to clarify the difference between a ''sampling connection'' and an ''open-ended line'' which have significantly different technical requirements under the subpart BB rules. There has been some confusion regarding open-ended lines being considered as sampling connections and the new definition should eliminate any potential for overlap.

III. Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

A. Applicability

In today's action, the EPA is amending paragraph (b)(5) of § 264.1080 and § 265.1080 to clarify that waste management units that are used solely for on-site treatment or storage of hazardous waste that is ''placed in the unit'' as a result of implementing Federally required remedial activities are exempt from the requirements of subpart CC. The language originally used in this paragraph stated that the hazardous waste must be ''generated'' as a result of implementing Federally required remedial activities. The word ''generated'' does carry a certain programmatic connotation; therefore, the word ''generated'' is being replaced because of the potential confusion caused by some of the regulated community taking a strictly regulatory interpretation of the term ''generated'' (i.e. viewing it as a term of art) rather than a more literal, plain English interpretation as was intended by the EPA in this context. For example, under the RCRA regulations, section 260.10, the term ''generate'' carries a particular legal context which was not intended to be strictly applied in this paragraph. Therefore, the word ''generated'' is being replaced to avoid any misinterpretation.

B. Waste Determination Procedures

Paragraph (a)(1)(i) of § 264.1083 and § 265.1084 is being amended to add new paragraphs (i) and (ii) that affect the requirements for when an owner or operator must make a determination of the volatile organic (VO) concentration of the waste stream. These new paragraphs effectively reestablish the previously contained requirements for determining VO concentration for hazardous wastes placed in a waste management unit exempted from using subpart CC air emission controls because the waste has an average VO concentration at the point of waste origination less than the action level of 500 ppmw.

As originally published, the subpart CC rules required that an initial determination of the average VO concentration of the hazardous waste stream be made before the first time any portion of the waste is placed in a waste management unit exempted from subpart CC air emission controls under the action level criteria. (See § 264.1083(a)(1), § 265.1084(a)(1), § 265.1084(a)(2)(i)(A), § 265.1084(a)(2)(ii)(A), § 265.1084(a)(3)(i)(A), and § 265.1084(a)(3)(ii) in 59 FR 62938 through 62939, December 6, 1994.) Thereafter, a determination of the VO concentration was required for each averaging period that a hazardous waste is managed in the unit. (See § 265.1084(a)(5)(ii) in 59 FR 62939, December 6, 1994.) In addition, the owner or operator was required to perform a new determination of the hazardous waste's VO concentration whenever changes to the source generating the waste stream were reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration action level or concentration limits. (See § 265.1084(a)(2)(i)(B), § 265.1084(a)(2)(ii)(B), and § 265.1084(a)(3)(i)(B) in 59 FR 62939, December 6, 1994.)

In November 1996, the EPA expanded and reorganized the waste determination procedures in § 264.1083 and § 265.1084 to allow various test methods other than Method 25D to be used as direct measurement in a waste determination. At this time, the EPA also revised the waste determination procedures such that, for both point of waste origination and point of waste treatment, no distinction was made for batch or continuous processes or for whether the owner or operator is the generator or receives the waste from off-site. In making these changes, the EPA inadvertently removed the requirements, in paragraphs (2) and (3) of § 265.1084(a) and in paragraph § 265.1084(a)(5)(ii), for when a determination of VO concentration is required. Today's amendments reestablish those requirements specifying when an owner or operator must determine the VO concentration of a hazardous waste stream.

Under the restored language in today's amendments, the owner or operator must perform an initial

determination of the average VO concentration of the hazardous waste stream before the first time any portion of the waste is placed in a waste management unit exempted from subpart CC air emission controls under the action level criteria. Following the initial VO concentration determination, a determination of the VO concentration is required for each averaging period that a hazardous waste is managed in the unit. This means that the owner or operator must have a current and up-to-date VO concentration determination on record for each hazardous waste stream managed in a waste management unit exempted from subpart CC air emission controls under the action level criteria. This VO concentration determination must reflect the VO concentration of the waste currently managed in the unit over the time frame covered by the specified averaging period.

In addition, the owner or operator is required to perform a new determination of the hazardous waste's VO concentration whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration action level or concentration limits.

The following example illustrates the requirement that the owner or operator have an initial as well as a current and up-to-date VO concentration determination on record for each hazardous waste stream managed in a waste management unit exempted from subpart CC air emission controls under the action level criteria. Assume that a TSDF owner has a production process that continuously generates a hazardous waste. Just prior to December 6, 1996, the effective date of the rule, the TSDF owner determines by direct measurement using Method 25D that, using a 6-month averaging period, the particular hazardous waste stream had an average VO concentration of 250 ppmw at the point of waste origination. The owner then records that for the 6-month period beginning with December 6, 1996, this particular generated waste stream has an average VO concentration of 250 ppmw; this serves as the initial determination of VO concentration as required under § 265.1084(a)(1)(i) in today's amendments.

Because the example waste stream has a VO concentration less than the action level of 500 ppmw, the owner manages the hazardous waste in a unit that is not equipped with subpart CC air emission controls. Under the requirements being reestablished in today's amendments, by June 6, 1997 (i.e., the end of the first 6-month averaging period) the owner must perform a new waste VO concentration determination for the next 6-month averaging period that would run from June 6 to December 6, 1997. In this example, the owner now elects to perform the new VO concentration determination using knowledge of the waste rather than using direct measurement as was done previously using Method 25D. The owner however does use the results of the first direct measurement, together with process engineering knowledge and experience (e.g., no change has been made to the raw materials or process technology for the steady-state production operation generating the waste) as the basis for the ''knowledge'' based VO concentration determination. Therefore, the owner records that for the 6-month averaging from June 6 to December 6, 1997, this particular waste stream has an average VO concentration of 250 ppmw. This waste VO concentration determination meets the requirements in § 265.1084(a)(1)(i) of today's amendments that a VO concentration determination be made for *each* averaging period that a hazardous waste is managed in a unit exempt from air emission controls under the action level criteria.

To continue the example, the owner repeats this same process for the averaging period that runs from December 6, 1997, to June 6, 1998. However, in April 1998, the owner modifies the production process and determines that this modification has the potential to cause the average VO concentration of the hazardous waste generated to increase to a level that is equal to or greater than the 500 pppmw action level. In this situation, under the requirements reestablished by today's action, the owner would be required to perform a new determination of the average VO concentration because of the changes to the source generating the waste. (See § 265.1084(a)(1)(ii) in today's amendments.)

Without today's amendments to the waste determination requirements of subpart CC, there is effectively no requirement (or guidance) provided within the rules as to when an owner or operator must determine the VO concentration of a hazardous waste stream. This was not EPA's intent. We intended that the owner or operator maintain a current VO concentration determination for each averaging period. This is clearly illustrated by the preamble discussion in the December 6, 1994 **Federal Register** notice, which states (at 59 FR 62916): ''If an average volatile organic concentration is used, an initial waste determination must be performed for *each* averaging period.'' Today's amendments reestablish requirements specifying when an owner or operator must determine the VO concentration of a hazardous waste stream.

In other changes to the waste determination provisions of subpart CC, the EPA is amending the waste sampling provisions of the rule to clarify requirements related to the sampling period. In November 1996, the EPA expanded and reorganized the waste determination procedures in § 264.1083 and § 265.1084; the requirements regarding sampling of the hazardous waste stream for a direct measurement of the VO concentration were also revised and reformatted. In doing so, provisions previously in the rule at § 265.1084(a)(5)(iv)(A) and § 265.1084(b)(4)(iv)(A) (see 59 FR 62939 and 59 FR 62941, December 6, 1994), requiring that all waste samples for a particular waste determination be collected within a 1-hour period and that information on waste quantity and operating conditions relative to the waste samples be prepared and recorded, were inadvertently left out of the rule language. This language is being restored in today's amendments.

On December 8, 1997 (see 62 FR 64664), the EPA amended the language regarding sampling for a waste determination in § 265.1084(a)(3)(ii)(B) and § 265.1084(b)(3)(ii)(B) to clarify the EPA's intent regarding the number of samples required for a waste determination. The amended paragraph stated (as did the published rule language at § 265.1084(a)(5)(iv)(A) and § 265.1084(b)(4)(iv)(A) [see 59 FR 62939, December 6, 1994]), that the average of four or more sample results constitutes a waste determination for the waste stream. This amended paragraph further clarified that one or more waste determinations may be needed to represent the average VO concentration over the complete range of waste compositions and quantities that occur during the entire averaging period (due to normal variations in the operating conditions for the source or process generating the hazardous waste stream). Thus, to determine the average VO concentration of a waste stream generated by a process with large seasonal variations in waste quantity, or fluctuations in ambient temperature, several waste determinations (consisting of four or more samples each) will be required. In making the change in December of 1997, the amendment failed to include the language previously contained at § 265.1084(a)(5)(iv)(A) and § 265.1084(b)(4)(iv)(A) (see 59 FR 62939

and 59 FR 62941, December 6, 1994) that the four samples needed for a waste determination are required to be collected within a 1-hour time period and that certain information relative to the waste samples must be recorded. Today's amendments to § 265.1084(a)(3)(ii) and § 265.1084(b)(3)(ii) add language in paragraph (B) that clearly states that ''all samples for a given waste determination shall be collected within a 1-hour period;'' and add a new paragraph (D) that reestablishes the requirement that ''sufficient information shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the source or process generating [or treating] the hazardous waste represented by the samples.'' The information on waste quantity and operating conditions is needed to properly calculate the mass-weighted average VO concentration over the averaging period and to assess that the averaging period used adequately characterizes the source or process over the time period selected for the averaging period. The type of information and data needed to meet this requirement should be clearly specified in the ''site sampling plan'' required under paragraph (C) of § 265.1084(a)(3)(ii) and § 265.1084(b)(3)(ii).

Also in the waste determination section of the rule, a portion of sections § 265.1084(a)(3)(iii) and § 265.1084(b)(3)(iii) is amended by today's action in order to clarify that, if the owner or operator elects to adjust the individual test data measured by a method other than Method 25D to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D, the adjustment must be made to *all* individual chemical constituents that comprise the average VO concentration. The constituent adjustment cannot be made on a selective constituent basis. Because some of the constituent-specific adjustment factors are greater than 1.0, selective use of the constituent adjustment may not provide an accurate representation of the average VO concentration as measured by Method 25D. The existing rule language at § 265.1084(a)(3)(iii) and § 265.1084(b)(3)(iii) states that ''the concentration of each individual chemical constituent measured in the waste'' may be corrected by multiplying the measured concentration by the constituent-specific adjustment factor. The same point is made in § 265.1084(a)(4)(iii) which specifies the procure to be used to adjust the data. This paragraph states that ''the measured concentration for each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor.'' The EPA's use of the phrase ''each individual chemical constituent contained in the wastes'' is intended to convey the meaning that *all* constituents in the waste must be adjusted using the appropriate individual adjustment factor, if the owner or operator elects to adjust the data. The EPA has in no way stated or otherwise implied that constituent-specific concentration test data can be adjusted on a selective constituent basis to characterize the VO concentration.

C. Standards: Tanks

Paragraph (h)(3) of the tank standards in § 264.1084 and § 265.1085 is being amended to allow owners or operators that elect to use a pressure tank, to control air emissions under the subpart CC rule, to purge the inert materials from the pressure tank as is required by normal operation (i.e., good engineering practices) for this type of tank system. The rule requires that, whenever hazardous waste is in a pressure tank, the tank must operate as a closed system that does not vent to the atmosphere. With today's changes, the owner or operator is allowed to purge the tank as long as the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the subpart CC rule requirements for closed-vent systems and control devices. A tank operating in this manner is technically meeting the alternative requirements for tanks using Tank Level 2 controls as specified in § 264.1084(d)(3) and § 265.1085(d)(3) which applies tanks vented through a closed-vent system to a control device. Therefore, venting of a pressure tank under controlled conditions complies with the subpart CC standards for Tank Level 2 controls and is allowed under the rules.

D. Standards: Containers

Transfer requirements are being added to the Level 3 container standards as a part of today's action. These requirements are essentially the same as those for the (less stringent) Level 2 container standards. These transfer requirements for Level 3 containers were inadvertently left out of the subpart CC requirements when they were published in November 1996, 61 FR 59962. The EPA had intended that the Level 3 container standards incorporate these transfer requirements and today's amendments rectify that oversight.

VI Administrative Requirements

A. Docket

Six RCRA dockets contain information pertaining to today's rulemaking: (1) RCRA docket number F–91–CESP–FFFFF, which contains copies of all BID references and other information related to the development of the rule up through proposal; (2) RCRA docket number F–92–CESA–FFFFF, which contains copies of the supplemental data made available for public comment prior to promulgation; (3) RCRA docket number F–94–CESF–FFFFF, which contains copies of all BID references and other information related to development of the final rule following proposal; (4) RCRA docket number F–94–CE2A–FFFFF, which contains information pertaining to waste stabilization operations performed in tanks; (5) RCRA docket number F–95–CE3A–FFFFF, which contains information about potential final rule revisions made available for public comment; and (6) RCRA docket number F–96–CE4A–FFFFF, which contains a copy of each of the comment letters submitted in regard to the revisions that the EPA was considering for the final subpart CC standards. The public may review all materials in these dockets at the EPA RCRA Docket Office.

The EPA RCRA Docket Office is located at Crystal Gateway, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia. Hand delivery of items and review of docket materials are made at the Virginia address. The public must have an appointment to review docket materials. Appointments can be scheduled by calling the Docket Office at (703) 603–9230. The mailing address for the RCRA Docket Office is RCRA Information Center (5305W), 401 M Street SW, Washington, DC 20460. The Docket Office is open from 9 a.m. to 4 p.m., Monday through Friday, except for Federal holidays.

B. Paperwork Reduction Act

The information collection requirements of the previously promulgated RCRA air rules were submitted to and approved by the Office of Management and Budget (OMB). A copy of this Information Collection Request (ICR) document (OMB control number 1593.02) may be obtained from Sandy Farmer, Information Policy Branch (2136); U.S. Environmental Protection Agency; 401 M Street, SW; Washington, DC 20460 or by calling (202) 260–2740.

Today's amendments to the RCRA air rules should have only a minor impact on the information collection burden estimates made previously, and that impact is expected to be a reduction. The changes consist of new definitions, alternative test procedures, clarifications of requirements, and additional compliance options. The changes are not additional requirements, but rather, are reductions in previously published requirements. In a number of instances, the changes simply restore inadvertently deleted provisions, and all information collection requirements in such provisions were previously approved. The overall information-keeping requirements in the rule are being reduced. Consequently, the ICR has not been revised.

C. Executive Order 12866

Under Executive Order 12866, the EPA must determine whether the proposed regulatory action is ''significant'' and, therefore, subject to the Office of Management and budget (OMB) review and the requirements of the Executive Order. The Executive Order defines ''significant regulatory action'' as one that is likely to lead to a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety in State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

The RCRA subpart CC air rules published on December 6, 1994, were considered significant under Executive Order 12866, and EPA accordingly prepared a regulatory impact analysis (RIA). The amendments published today make technical changes to the rule and correct structural problems with the drafting of some sections. This action is not a ''significant regulatory action'' within the meaning of Executive Order 12866; thus, OMB review of the action is not required.

D. Regulatory Flexibility

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities such as small businesses, small organization and small governments. However, no regulatory flexibility analysis is required if the agency certifies the rule will not have a significant adverse economic impact on a substantial number of small entities. For the reasons discussed in the December 6, 1994 **Federal Register** (59 FR 62923), the subpart CC rules themselves do not have a significant impact on a substantial number of small entities. The present rule only makes technical changes to the subpart AA and CC rules, and does not add new control requirements to the December 1994 rule. The amendments in fact reduce the already-existing requirements. Therefore, I certify that this rule will not have a significant adverse economic impact on a substantial number of small entities and therefore does not require a regulatory flexibility analysis.

E. Unfunded Mandates Reform Act

Under section 202 of the Unfunded Mandates Reform Act of 1995 (''Unfunded Mandates Act''), the EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate, or to the private sector, of $100 million or more. Under section 205, the EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires the EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

The EPA has determined that the action promulgated today does not include a Federal mandate that may result in estimated costs of $100 million or more to either State, local, or tribal governments in the aggregate or to the private sector. Therefore, the requirements of the Unfunded Mandates Act do not apply to this action.

F. Executive Order 13045

Executive Order 13045 applies to any rule that EPA determines (1) economically significant as defined under E.O. 12866, and (2) the environmental health or safety risk addressed by the rule has a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

These final amendments are not subject to E.O. 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997), because they are not economically significant regulatory actions as defined by E.O. 12866.

G. National Technology Transfer and Advancement Act

Under § 12(d) of the National Technology Transfer and Advancement Act (NTTAA), the Agency is required to use voluntary consensus standards in its regulatory and procurement activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (such as materials specifications, test methods, sampling procedures, and business practices) which are developed or adopted by voluntary consensus standard bodies. Where available and potentially applicable voluntary consensus standards are not used by EPA, the Act requires the Agency to provide Congress, through the OMB, an explanation of the reasons for not using such standards. Today's action does not put forth any technical standards as part of the clarifying amendments. Therefore, consideration of voluntary consensus standards was not required.

H. Enhancing the Intergovernmental Partnership Under Executive Order 12875

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, copies of any written communications from the governments, and a statement supporting the need to issue the regulation. In addition,

Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments ''to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates.''

Today's action does not create a mandate on State, local or tribal governments. The amendments to the rule do not impose any new or additional enforceable duties on these entities. Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this action.

I. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statue, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's amendments to the final rule do not significantly or uniquely affect the communities of Indian tribal governments. The amendments to the rule do not impose any new or additional enforceable duties on these entities. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this action.

J. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. However, section 808 provides that any rule for which the issuing agency for good cause finds (and incorporates the finding and a brief statement of reasons therefor in the rule) that notice and public procedure thereon are impracticable, unnecessary or contrary to the public interest, shall take effect at such time as the agency promulgating the rule determines. 5 U.S.C. § 808(2). As stated previously, EPA has made such a good cause finding, including the reasons therefor, and established an effective date of January 21, 1999. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. § 804(2).

K. Pollution Prevention Act

The Pollution Prevention Act of 1990 states that pollution should be prevented or reduced at the source whenever feasible. As originally published, the final subpart AA, BB, and CC emission standards for units managing hazardous wastes contain an applicability threshold or action level formatted in terms of either a total or volatile organic concentration of the hazardous waste that must be exceeded in order for a particular standard to apply. By formulating the standard in this way, flexibility is allowed for facility owners or operators to initiate process modifications or incorporate treatment technologies that will accomplish the same environmental results at lower costs; this encourages pollution prevention alternatives that reduce the organic content of the hazardous waste generated. Today's amendments to the RCRA air rules in no way affect the pollution prevention alternatives and measures previously incorporated into the final rules.

L. Immediate Effective Date

The EPA has determined to issue this rule without first proposing it and to make today's action effective immediately. The EPA believes that the corrections being made in today's action are either interpretations of existing regulations which do not require prior notice and opportunity for comment, or are technical corrections of obvious errors in the published rules (for example, corrections to regulations inconsistent with or not carrying out statements in the preamble or Background Information Document, or restoration of provisions which were deleted inadvertently). Comment on such changes is unnecessary, within the meaning of 5 USC 553(b)(3)(B). For the same reason, there is good cause for the rules to be made effective immediately, within the meaning of 5 U.S.C. 553(d)(3).

VII. Legal Authority

These regulations are amended under the authority of sections 2002, 3001–3007, 3010, and 7004 of the Solid Waste Disposal Act of 1970, as amended by RCRA, as amended (42 U.S.C. 6921–6927, 6930, and 6974).

List of Subjects

40 CFR part 262

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

40 CFR Parts 264 and 265

Environmental protection, Air pollution control, Container, Control device, Hazardous waste, Inspection, Monitoring, Reporting and recordkeeping requirements, Surface impoundment, Tank, TSDF, Waste determination.

Dated: January 8, 1999.

Robert Perciasepe,

Assistant Administrator for Air and Radiation.

For the reasons set out in the preamble, title 40, chapter I, parts 262, 264, and 265 of the Code of Federal Regulations are amended as follows:

PART 262—STANDARD APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

1. The authority citation for part 262 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912, 6299, 6925, 6937, and 6938, unless otherwise noted.

2. Section 262.34 is amended by revising paragraphs (a)(1)(i) and (a)(1)(ii) to read as follows:

§ 262.34 Accumulation time.

(a) * * *

(1) * * *

(i) In containers and the generator complies with the applicable requirements of subparts I, AA, BB, and CC of 40 CFR part 265; and/or

(ii) In tanks and the generator complies with the applicable requirements of subparts J, AA, BB, and CC of 40 CFR part 265 except §§ 265.197(c) and 265.200; and/or

* * * * *

PART 264—STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

3. The authority citation for part 264 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924 and 6925.

Subpart AA—Air Emission Standards for Process Vents

4. Section 264.1031 is amended by revising the definitions of ''Equipment'' and ''Open-ended valve or line'' and adding a new definition for the term ''Sampling connection system'' in alphabetical order to read as follows:

§ 264.1031 Definitions.

* * * * *

Equipment means each valve, pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, or flange or other connector, and any control devices or systems required by this subpart.

* * * * *

Open-ended valve or line means any valve, except pressure relief valves, having one side of the valve seat in contact with hazardous waste and one side open to the atmosphere, either directly or through open piping.

* * * * *

Sampling connection system means an assembly of equipment within a process or waste management unit used during periods of representative operation to take samples of the process or waste fluid. Equipment used to take non-routine grab samples is not considered a sampling connection system.

* * * * *

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

5. Section 264.1080 is amended by revising paragraph (b)(5) to read as follows:

§ 264.1080 Applicability.

* * * * *

(b) * * *

(5) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v), or 3008(h); CERCLA authorities; or similar Federal or State authorities.

* * * * *

6. Section 264.1083 is amended by adding new paragraphs (a)(1)(i), (a)(1)(ii), (b)(1)(i), and (b)(1)(ii) to read as follows:

§ 264.1083 Waste determination procedures.

(a) * * *

(1) * * *

(i) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of § 264.1082(c)(1) of this subpart from using air emission controls, and thereafter an initial determination of the average VO concentration of the waste stream shall be made for each averaging period that a hazardous waste is managed in the unit; and

(ii) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the applicable VO concentration limits specified in § 264.1082 of this subpart.

* * * * *

(b) * * *

(1) * * *

(i) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the treated waste stream is placed in the exempt waste management unit, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and

(ii) Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in § 264.1082 (c)(2) of this subpart are not achieved.

* * * * *

7. Section 264.1084 is amended by revising paragraph (h)(3) to read as follows:

§ 264.1084 Standards: Tanks.

* * * * *

(h) * * *

(3) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except under either or the following conditions as specified in paragraph (h)(3)(i) or (h)(3)(ii) of this section.

(i) At those times when opening of a safety device, as defined in § 265.1081 of this subpart, is required to avoid an unsafe condition.

(ii) At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of § 264.1087 of this subpart.

* * * * *

8. Section 264.1086 is amended by adding new paragraph (e)(6) to read as follows:

§ 264.1086 Standards: Containers.

* * * * *

(e) * * *

(6) Transfer of hazardous waste in or out of a container using Container Level 3 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the EPA considers to meet the requirements of this paragraph include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

* * * * *

PART 265—INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

9. The authority citation for part 265 continues to read as follows:

Authority: 42 U.S.C. 6905, 6906, 6912(a), 6924, 6925, 6912, 6922, 6923, 6935, 6936, and 6937.

Subpart CC—Air Emission Standards for Tanks, Surface Impoundments, and Containers

10. Section 265.1080 is amended by revising paragraph (b)(5) to read as follows:

§ 265.1080 Applicability.

* * * * *

(b) * * *

(5) A waste management unit that is used solely for on-site treatment or storage of hazardous waste that is placed in the unit as a result of implementing remedial activities required under the corrective action authorities of RCRA sections 3004(u), 3004(v), or 3008(h); CERCLA authorities; or similar Federal or State authorities.

* * * * *

11. Section 265.1084 is amended by adding new paragraphs (a)(1)(i), (a)(1)(ii), (a)(3)(ii)(D), (b)(1)(i), (b)(1)(ii) and (b)(3)(ii)(D) and by revising paragraphs (a)(3)(ii)(B), (a)(3)(iii) introductory text, (b)(3)(ii)(B), and (b)(3)(iii) introductory text, to read as follows:

§ 265.1084 Waste determination procedures.

(a) * * *

(1) * * *

(i) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the hazardous waste stream is placed in a waste management unit exempted under the provisions of § 265.1083(c)(1) of this subpart from using air emission controls, and thereafter an initial determination of the average VO concentration of the waste stream shall be made for each averaging period that a hazardous waste is managed in the unit; and

(ii) Perform a new waste determination whenever changes to the source generating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level that is equal to or greater than the VO concentration limit specified in § 265.1083(c)(1) of this subpart.

* * * * *

(3) * * *

(ii) * * *

(B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the source or process generating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

* * * * *

(D) Sufficient information, as specified in the ''site sampling plan'' required under paragraph (a)(3)(ii)(C) of this section, shall be prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the source or process generating the hazardous waste represented by the samples.

(iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (a)(3)(iii)(A) through (a)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m^3] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (a)(3)(iii)(B) through (a)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses EPA Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260 or 8270 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's published list, the procedures in paragraph (a)(3)(iii)(H) of this section must be followed. At the owner or operator's discretion, the owner or operator may adjust test data measured by a method other than Method 25D to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, appendix A. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant value greater than or equal to 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

* * * * *

(b) * * *

(1) * * *

(i) An initial determination of the average VO concentration of the waste stream shall be made before the first time any portion of the material in the treated waste stream is placed in a waste management unit exempted under the provisions of § 265.1083(c)(2), § 265.1083(c)(3), or § 265.1083(c)(4) of this subpart from using air emission controls, and thereafter update the information used for the waste determination at least once every 12 months following the date of the initial waste determination; and

(ii) Perform a new waste determination whenever changes to the process generating or treating the waste stream are reasonably likely to cause the average VO concentration of the hazardous waste to increase to a level such that the applicable treatment conditions specified in § 265.1083(c)(2), § 265.1083(c)(3), or § 265.1083(c)(4) of this subpart are not achieved.

* * * * *

(3) * * *

(ii) * * *

(B) A sufficient number of samples, but no less than four samples, shall be collected and analyzed for a hazardous waste determination. All of the samples for a given waste determination shall be collected within a one-hour period. The average of the four or more sample results constitutes a waste determination for the waste stream. One or more waste determinations may be required to represent the complete range of waste compositions and quantities that occur during the entire averaging period due to normal variations in the operating conditions for the process generating or treating the hazardous waste stream. Examples of such normal variations are seasonal variations in waste quantity or fluctuations in ambient temperature.

* * * * *

(D) Sufficient information, as specified in the ''site sampling plan'' required under paragraph (C) of (b)(3)(ii)this section, § 265.1084(b)(3)(ii), shall be

prepared and recorded to document the waste quantity represented by the samples and, as applicable, the operating conditions for the process treating the hazardous waste represented by the samples.

* * * * *

(iii) Analysis. Each collected sample shall be prepared and analyzed in accordance with one or more of the methods listed in paragraphs (b)(3)(iii)(A) through (b)(3)(iii)(I) of this section, including appropriate quality assurance and quality control (QA/QC) checks and use of target compounds for calibration. When the owner or operator is making a waste determination for a treated hazardous waste that is to be compared to an average VO concentration at the point of waste origination or the point of waste entry to the treatment system to determine if the conditions of § 264.1082(c)(2)(i) through (c)(2)(vi) or § 265.1083(c)(2)(i) through (c)(2)(vi) are met, then the waste samples shall be prepared and analyzed using the same method or methods as were used in making the initial waste determinations at the point of waste origination or at the point of entry to the treatment system. If Method 25D in 40 CFR part 60, appendix A is not used, then one or more methods should be chosen that are appropriate to ensure that the waste determination accounts for and reflects all organic compounds in the waste with Henry's law constant values at least 0.1 mole-fraction-in-the-gas-phase/mole-fraction-in-the-liquid-phase (0.1 Y/X) [which can also be expressed as 1.8×10^{-6} atmospheres/gram-mole/m3] at 25 degrees Celsius. Each of the analytical methods listed in paragraphs (b)(3)(iii)(B) through (b)(3)(iii)(G) of this section has an associated list of approved chemical compounds, for which EPA considers the method appropriate for measurement. If an owner or operator uses EPA Method 624, 625, 1624, or 1625 in 40 CFR part 136, appendix A to analyze one or more compounds that are not on that method's published list, the Alternative Test Procedure contained in 40 CFR 136.4 and 136.5 must be followed. If an owner or operator uses EPA Method 8260 or 8270 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, (incorporated by reference—refer to § 260.11(a) of this chapter) to analyze one or more compounds that are not on that method's published list, the procedures in paragraph (b)(3)(iii)(H) of this section must be followed. At the owner or operator's discretion, the owner or operator may adjust test data measured by a method other than Method 25D to the corresponding average VO concentration value which would have been obtained had the waste samples been analyzed using Method 25D in 40 CFR part 60, appendix A. To adjust these data, the measured concentration of each individual chemical constituent contained in the waste is multiplied by the appropriate constituent-specific adjustment factor (f_{m25D}). If the owner or operator elects to adjust test data, the adjustment must be made to all individual chemical constituents with a Henry's law constant equal to or greater than 0.1 Y/X at 25 degrees Celsius contained in the waste. Constituent-specific adjustment factors (f_{m25D}) can be obtained by contacting the Waste and Chemical Processes Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711.

* * * * *

12. Section 265.1085 is amended by replacing paragraph (h)(3) revising to read as follows:

§ 265.1085 Standards: Tanks.

* * * * *

(h) * * *

(3) Whenever a hazardous waste is in the tank, the tank shall be operated as a closed system that does not vent to the atmosphere except under either or the following conditions as specified in paragraph (h)(3)(i) or (h)(3)(ii) of this section.

(i) At those times when opening of a safety device, as defined in § 265.1081 of this subpart, is required to avoid an unsafe condition.

(ii) At those times when purging of inerts from the tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of § 265.1088 of this subpart.

* * * * *

13. Section 265.1087 is amended by adding new paragraph (e)(6) to read as follows:

§ 265.1087 Standards: Containers.

* * * * *

(e) * * *

(6) Transfer of hazardous waste in or out of a container using Container Level 3 controls shall be conducted in such a manner as to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials. Examples of container loading procedures that the EPA considers to meet the requirements of this paragraph include using any one of the following: A submerged-fill pipe or other submerged-fill method to load liquids into the container; a vapor-balancing system or a vapor-recovery system to collect and control the vapors displaced from the container during filling operations; or a fitted opening in the top of a container through which the hazardous waste is filled and subsequently purging the transfer line before removing it from the container opening.

* * * * *

[FR Doc. 99–1335 Filed 1–20–99; 8:45 am]
BILLING CODE 6560–50–P

Federal Register

Tuesday
May 11, 1999

Part II

Environmental Protection Agency

40 CFR Part 261 et al.

Land Disposal Restrictions Phase IV: Treatment Standards for Wood Preserving Wastes, Treatment Standards for Metal Wastes, Zinc Micronutrient Fertilizers, Carbamate Treatment Standards, and K088 Treatment Standards; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 262, and 268

RIN 2050–AE05

[EPA # F–98–P3F4–FFFFF; FRL–6335–7]

Land Disposal Restrictions Phase IV: Treatment Standards for Wood Preserving Wastes, and Treatment Standards for Metal Wastes, and Zinc Micronutrient Fertilizers, and Carbamate Treatment Standards, and K088 Treatment Standards, Final Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; technical correction.

SUMMARY: This rule corrects and clarifies five related rules the EPA published on May 12, 1997, May 26, 1998, August 31, 1998, September 4, 1998, and September 24, 1998. On May 12, 1997, EPA published regulations promulgating Land Disposal Restrictions (LDR) treatment standards for wood preserving wastes, as well as reducing the paperwork burden for complying with LDRs. On May 26, 1998, EPA published regulations promulgating LDR treatment standards for metal-bearing wastes, as well as amending the LDR treatment standards for soil contaminated with hazardous waste, and amending the definition of which secondary materials from mineral processing are considered to be wastes subject to the LDRs. On August 31, 1998, EPA published an administrative stay of the metal-bearing waste treatment standards as they apply to zinc micronutrient fertilizers. On September 4, 1998, EPA published an emergency revision of the LDR treatment standards for hazardous wastes from the production of carbamate wastes. On September 24, 1998, EPA published revised treatment standards for spent aluminum potliners from primary aluminum production. Today's rule makes technical corrections and clarifications to these final regulations.

EFFECTIVE DATE: This rule is effective on May 11, 1999.

ADDRESSES: The public may obtain a copy of this technical correction at the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424–9346 (toll free) or (703) 920–9810 in the Washington, DC metropolitan area. For information on this rule contact Peggy Vyas (5302W), Office of Solid Waste, 401 M Street, SW, Washington, DC 20460, (703) 308–5477, e-mail address is ''vyas.peggy@epamail.epa.gov''.

SUPPLEMENTARY INFORMATION:

I. Reasons and Basis for Today's Amendments

The Agency has received several comments from the regulated community requesting clarification and correction of certain aspects of five rules all promulgating and revising Phase IV of the LDRs. These are: the May 12, 1997 LDR Phase IV final rule (the so-called ''Mini'' Rule, 62 FR 25998), the May 26, 1998 LDR Phase IV final rule (63 FR 28556), the August 31, 1998 administrative stay of the May 26, 1998 rule's applicability to certain zinc micronutrient fertilizers (63 FR 46332), the September 4, 1998 emergency revisions to the treatment standards for carbamate production wastes (63 FR 172), and the September 24, 1998 revisions to the treatment standards for spent aluminum potliners (63 FR 51254). Today's preamble discussion amendments make clarifications and technical corrections where appropriate in light of the comments received.

II. Clarification of the May 12, 1997 LDR Phase IV ''Mini Rule''

On May 12, 1997, EPA published regulations promulgating certain aspects of the original LDR Phase IV proposal (60 FR 11702, March 2, 1995), including a discussion clarifying point of generation of hazardous wastes (see 60 FR 26006–7, May 12, 1997). That discussion may have been confusing with regard to the status of sludge from high-TOC ignitable waste treated in entirely tank-based NPDES or POTW discharge systems. To clarify, EPA's position is that where wastes are managed in NPDES or POTW discharge systems that are entirely tank-based, the wastes are not destined for land disposal and, therefore, neither the LDR disposal prohibitions nor the treatment standards (or attendant dilution prohibition) apply. Conversely, where an NPDES or POTW discharge system includes a land-based unit (i.e., a surface impoundment), wastes managed in the system are considered to be destined for land disposal, and the LDR regulations do apply. See 61 FR 15566 at 15570 (April 8, 1996), 53 FR 31136 at 31149 (August 17, 1988).

Accordingly, the management of a high-TOC ignitable waste in an entirely tank-based NPDES or POTW discharge system—whether inadvertent or not—would trigger no LDR requirements. Sludge subsequently removed from the tanks would be considered newly-generated waste (for LDR purposes) regardless of any changes in treatability group, and LDR requirements would apply with respect to its management only if the sludge itself is hazardous waste when removed. If the sludge is a hazardous waste, the LDR treatment standard that would apply would depend on the hazardous waste code and treatability group (or subcategory) of the sludge itself.

III. Amendments to and Clarifications of the May 26, 1998 LDR Phase IV Final Rule

Several errors exist in the regulatory language of the LDR Phase IV final rule, which we are correcting with today's rule. We are also making several clarifications to the preamble of the LDR Phase IV final rule.

A. Corrections to the LDR Phase IV Final Rule

1. Section 261.2(e)(1)(iii)

Section 261.2(e) identifies materials that are not solid wastes when recycled. The rule added an amendment to § 261.2(e)(1)(iii), which amendment applies only to secondary materials generated and reclaimed by the primary mineral processing industry. The rule inadvertently deleted language in § 261.2(e)(1)(iii) that applies to other industrial sectors recycling secondary materials. The Agency did not intend to eliminate the long-standing regulatory exclusions for other industrial sectors, and indeed effectively stated that the provision was not being amended for other industry sectors, see 63 FR at 28583–584. We are therefore restoring the omitted text in this section.

2. Section 261.4

The Hazardous Waste Combustion Revised Standards published on June 19, 1998 (63 FR 33782) added a paragraph to § 261.4(a)(16), which inadvertently changed what was promulgated in the LDR Phase IV final rule. To avoid confusion, we are redesignating the language promulgated in § 261.4(a)(16) in the LDR Phase IV final rule as § 261.4(a)(17).

Section 261.4(a)(17) (as renumbered in this rule) identifies certain mineral processing secondary materials as subject to a conditional exclusion from subtitle C regulation as follows:

> Secondary materials * * * generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing.

As noted throughout the preamble, however, the same mineral processing secondary materials are also recovered

in beneficiation operations. See, e.g., 63 FR at 28578. EPA did not intend to restrict the scope of the conditional exclusion to recovery only in mineral processing operations. Id. Consequently, EPA is amending § 261.4(a)(17) to indicate that recovery of these secondary materials may occur in either mineral processing or beneficiation operations.

This same amendment is being made to § 261.4(b)(7)(iii), which sets out the conditions under which wastes from the co-processing of normal feedstock with mineral processing secondary materials remains exempt from subtitle C regulation under the Bevill Amendment. In relevant part, the rule states:

> A residue derived from co-processing mineral processing secondary materials with normal beneficiation raw materials remains excluded under paragraph (b) * * * if the owner or operator:
>
> (A) Processes at least 50 percent by weight normal beneficiation raw materials;

The regulation inadvertently neglected to address the comparable situation when Bevill residues come from mineral processing rather than beneficiation operations. EPA clearly indicates in the preamble that the provisions of paragraph (b)(7)(ii) also apply to co-processing mineral processing secondary materials in beneficiation units. See 63 FR at 28595; see also 54 FR at 36614, 16619–620, 36629 (Sept. 1, 1989); 54 FR at 15324–325, 15341 (April 17, 1989) (prior rulemakings where EPA indicated that these conditions apply). Consequently, EPA is adding clarifying language to § 261.4(b)(7)(iii) to affirm that both beneficiation and mineral processing operations are included.

3. Section 268.7

The tables in § 268.7(a) and (b), entitled ''Generator Paperwork Requirements Table'' and ''Treatment Facility Paperwork Requirements Table,'' are now erroneously missing certain checkmarks, which we are reinstating in today's rule. The LDR Phase IV final rule also added a line eight to the ''Generator Paperwork Requirements Table,'' and a line five to the ''Treatment Facility Paperwork Requirements Table,'' both for contaminated soil, which inadvertently erased the previous lines eight and five. We are correcting this oversight by reinstating the missing lines as nine and six, respectively.

4. Section 268.9

The language in § 268.9(d)(2) currently refers to language in § 268.7(b)(5), which has been renumbered as § 268.7(b)(4). Today's rule amends the language in § 268.9 to correct this miscitation. For more clarification of LDR certifications and how they apply to soil, see the discussion in section B.6.c. below.

5. Section 268.40

Today's rule also amends the treatment standard table found in § 268.40. The entry for P015 incorrectly describes this waste as ''beryllium dust''; the proper term is ''beryllium powder.'' Also, the entry for U408 gave the incorrect CAS number for 2,4,6-Tribromophenol. We are correcting these errors in today's rule. For other errors in the § 268.40 table, see sections V. and VI. below.

B. Clarifications to the LDR Phase IV Final Rule

1. Effective Dates

The Agency has received a number of questions about the dates when various provisions of the LDR Phase IV final rule become effective. A memorandum explaining in further detail the effective dates of the LDR Phase IV final rule is available in the RCRA docket for the rule, and is also available on the internet at: http://www.epa.gov/epaoswer/hazwaste/ldr/ldrmetal/memos/effectiv.pdf.

Part of the confusion over the compliance dates for the LDR Phase IV final rule resulted from EPA incorrectly referring to effective dates as ''compliance dates''. In the ''Effective Dates'' section in the preamble (see page 28556, middle column), the Agency lists four exceptions to the August 24, 1998 effective date for the rule. These exceptions are referred to as ''compliance dates'', when, in fact, they are effective dates.

Another point of clarification relates to the LDR Phase IV final rule amendments of the treatment standards for carbamate wastes, which were originally promulgated in the LDR Phase III final rule on April 8, 1996 (61 FR 15566). The LDR Phase IV amendments went into effect August 24, 1998. However, on September 4, 1998, the Agency changed the compliance dates for the LDR Phase IV carbamate treatment standards. If you have any questions related to compliance with the carbamate treatment standards, we direct you to the Emergency Revision of the Land Disposal Restrictions Treatment Standards for Listed Hazardous Wastes from Carbamate Production, which was published on September 4, 1998 (63 FR 172).

2. Waste as Fill

In the May 12, 1997 second supplemental proposed rule, EPA raised the issue of prohibiting the use of hazardous waste as fill material unless it was demonstrated to the Agency (or authorized State) that the use of the waste minimized threats to human health and the environment (see 62 FR 26061). The Agency did not finalize this issue in the LDR Phase IV final rule, but the proposal remains pending and awaiting EPA further action.

3. Cement Kiln Dust

EPA states at 63 FR at 28600/3 that:

> The Agency is aware that both cement kiln[s] and aggregate kilns may both burn hazardous wast[e] fuels and that the dusts from air pollution control devices are often blended into final products. Under existing regulations, if these dusts resulting from burning listed hazardous waste fuels are blended into products that are used on the land, the product would be subject to RCRA's 'derived from' rules. * * *''

The second sentence refers to a situation where the Bevill amendment does not apply to the residue from burning the hazardous waste derived fuel. The overall sense and intent of this section of the preamble remains that EPA wishes to consider cement kiln dust and dust from lightweight aggregate kilns (including dusts from kilns burning hazardous waste as fuels) in the same fashion because they are similar materials managed in similar manners.

4. D004 Treatment Standards

Some confusion also apparently exists as to whether the Universal Treatment Standards (UTS) apply to D004 arsenic wastes. In the preamble to the LDR Phase IV final rule, we state that the UTS apply to both wastewater and nonwastewater forms of the TC metal wastes. But a parenthetical then states that, for TC arsenic wastes, the UTS applies to the wastewater form only. The Agency unfortunately has caused confusion by this parenthetical language. The parenthetical only meant to explain that we were revising or replacing the standard solely for the nonwastewater form of arsenic in LDR Phase IV. We did not intend by the parenthetical to suggest that the wastewater form of arsenic had changed or been eliminated, or that the UTS do not apply. The existing standard for the wastewater form of arsenic was and remains the UTS. Therefore, the UTS have and will continue to apply to D004 arsenic wastes in both forms.

5. TC Metal Standards and Mixed Wastes

In the preamble to the final rule, EPA refers to characteristic metal mixed wastes that were previously stabilized to meet the then-existing LDR

requirements and that are now being stored prior to disposal. We indicate that these mixed wastes do not have to be re-treated to meet the revised treatment standards prior to disposal (63 FR 28575–28576). Mixed wastes are those that are both radioactive and hazardous. Although we believe that the preamble is clear, EPA has received a number of inquiries on this point. The Agency wishes to reiterate that, for the reasons explained in the LDR Phase IV preamble, if mixed wastes that are characteristically hazardous for metals were treated via stabilization to the old treatment standards before the effective date of the LDR Phase IV rule, these wastes do not need to be re-treated to meet the new treatment standards even if land disposal of the waste occurs after the effective date of the LDR Phase IV rule. Wastes previously treated by methods other than stabilization will have to be re-treated, as indicated clearly in the LDR Phase IV preamble, unless a site-specific variance is granted. Please note that the preamble further indicates EPA's amenability to grant such variances where, for example, there is risk of re-exposure to radiation. See 63 FR at 28576.

6. Soil Issues

EPA has received numerous questions about the alternative soil treatment standards. Two important questions and their answers appear below. Other questions will be handled through regular information channels, such as the RCRA Hotline at 1–800–424–9346. We also wish to remind readers generally that before receiving authorization for the soil treatment standards, states authorized for other portions of the LDR program may, for contaminated soil, use state waivers or other state authorities to waive the duty to comply with the LDR treatment standards for pure hazardous waste and allow, instead, compliance with the soil treatment standards. This is discussed more fully in the guidance memorandum mentioned above on LDR Phase IV rule effective dates.

a. What are the certification requirements for decharacterized soil? The certification requirements for decharacterized soil are similar to the requirements for decharacterized wastes. The certification language found in § 268.7(b)(4) is to be used if underlying hazardous constituents in decharacterized soil have been treated, either to meet the 90% reduction or the ten times UTS provisions in the soil treatment standards. If underlying hazardous constituents in decharacterized soil have not been treated and are above the 10 X UTS soil standard, the soil still requires treatment. In this case, the revised certification language found in § 268.7(b)(4)(iv) must be used instead. See 63 FR at 28620.

b. If constituents of concern in a hazardous contaminated soil have a specified method of treatment, can a facility still use the alternative soil treatment standards? In interpreting the alternative soil treatment standards found at § 268.49(c)(3), questions have arisen, particularly with respect to: (1) use of soil treatment standards where the only constituents of concern are nonanalyzable, and (2) situations in which both analyzable and non-analyzable constituents are present. The table below details the appropriate implementation of the language in § 268.49(c)(3), based on language from the preamble to the proposed and final rules with respect to contaminated soils containing both analyzable and nonanalyzable constituents. Readers should note that the following information only applies to constituents of concern present in a hazardous contaminated soil that must meet LDRs before land disposal.

If these constituents are * * *	And if these constituents * * *	Then soils contaminated with these constituents meet LDR treatment requirements when you * * *
Nonanalyzable only	Have a method of treatment specified in § 268.40	Treat all of these constituents using the treatment method[s] specified in § 268.40.
Analyzable and nonanalyzable.	Are organic compounds	Treat analyzable constituents to numerical soil treatment levels; no need to separately treat nonanalyzable constituents using method specified in § 268.40.
analyzable only	Have a method of treatment specified in § 268.40 AND ALSO a concentration-based limit in the § 268.48 UTS table.	Treat each constituent to numerical soil treatment levels.
	Have only concentration based limits in § 268.40 and § 268.48.	Treat each constituent to numerical soil treatment levels.

The preambles to both the final and proposed rules on contaminated soils make clear that EPA intended to allow treatment of analyzable constituents to serve as a surrogate for treating unanalyzable constituents only when the analyzable and unanalyzable constituents are both organics. The Phase IV preamble thus states that ''[i]n situations where contaminated soil contains both analyzable and nonanalyzable organic constituents, treating the analyzable constituents to meet the soil treatment standards is also reasonably expected to provide adequate treatment of nonanalyzable constituents.'' 63 FR at 28609 (emphasis added). This sentence indicates that it is reasonable to expect that treatment for analyzable organic constituents will be sufficiently effective for other organic, but nonanalyzable, constituents. See also, Phase II proposal, 58 FR at 48124 (col. 2) (Sept. 14, 1993) (likewise stating that the principle of treating only analyzable constituents applies only where analyzable and nonanalyzable constituents are both organics). We are accordingly amending the language of the rule so that it matches these preamble explanations.

This leaves unaddressed in the rule situations (which may or may not actually exist) where analyzable and unanalyzable hazardous constituents are not both organics. If the situation exists, it would not be reasonable to assume in all situations that organic treatment would serve as a surrogate for inorganic or metal treatment, or vice versa. Should the situation arise, EPA believes it should be addressed on a site-specific basis. The relevant factors to be considered include the types of hazardous constituents, their concentrations (for the analyzable constituents), and their amenability to common treatment.

c. What are nonanalyzable constituents? A nonanalyzable constituent is any constituent that does not have appropriate test methods or chemical standards to properly measure compliance with LDR concentration-based standards. A constituent is nonanalyzable under LDR regulation when (1) the appropriate § 268.40 listing

specifies a treatment technology, and (2) there is no concentration-based limit in the § 268.48 UTS table. We note, simply for technical accuracy, that the Phase IV preamble (63 FR 28609, col. 2) refers in a parenthetical statement to nonanalyzable constituents as belonging only to P and U waste codes. That preamble parenthetical is not entirely correct. A limited number of organic nonanalyzable constituents are also regulated under K and F waste codes. This clarification does not affect implementation of § 268.49(c)(3) in any way.

7. Intentional Mixing of Hazardous Waste With Soil or Debris

It is illegal to add soil or debris to a hazardous waste to change the waste's treatment classification to soil or debris and thereby to falsely claim eligibility for the alternative treatment standards for soil or debris. Put another way, addition of soil or debris to a hazardous waste does not change that waste into soil or debris for purposes of LDR treatment. As the Agency stated in the May 26, 1998 preamble, ''[A]ny deliberate mixing of prohibited hazardous waste with soil in order to change its treatment classification (i.e. from waste to contaminated soil) is illegal. Existing regulations concerning impermissible dilution already make this point.'' 63 FR at 28621. The conduct is impermissible dilution because it adds a diluting medium—the soil—that neither contributes to effective treatment nor represents a bona fide substitute for adequate treatment. Id.

EPA further made clear that this conduct subjects generators to civil and criminal penalties. 63 FR at 28621. In addition, the impermissibly diluted waste remains subject to the original treatment standard, ''so no benefit in terms of reduced treatment would occur.'' Id.

EPA had earlier established the same principle for debris: ''[a]lthough EPA is classifying mixtures that are predominantly debris as debris, this does not mean that debris can be deliberately mixed with other wastes in order to change their treatment classification. Such mixing is impermissible dilution under § 268.3 since it is a substitute for adequate treatment.'' 57 FR at 37224 (Aug. 18, 1992); see also 57 FR at 37243 (''if debris is intentionally mixed with contaminated soil or hazardous waste (e.g. after excavation), and the mixture is regulated as debris by the application of the mixture principle and subsequently immobilized, prohibited sham mixing has occurred'').

To ensure that there is no possibility of misunderstanding current law, EPA has decided to amend the definitions in § 268.2 to reflect more directly the preamble language stating that intentional addition of soil or debris to hazardous waste is impermissible. Currently, the definitions of ''soil'' and ''debris'', respectively state that soil or debris is ''made up primarily of soil'' or ''primarily of debris.'' 40 CFR § 268.2 (k) and (g). To remove any possible (albeit unfounded, given the existence of the dilution prohibition in § 268.3 and the preamble language quoted above) confusion regarding the term ''primarily'' in the rules, EPA is incorporating language directly into the respective definitions that states that deliberate mixing of process waste to soil or debris that changes a treatment classification is impermissible dilution. These additions merely incorporate existing preamble text into regulations and do not establish any new principles. Thus, today's correction is at most an interpretive rule because EPA's existing interpretations are being codified as clarifications to the definitions of soil and debris and to the existing dilution prohibition in § 268.3. Moreover, no new obligations are created because existing regulations—viz., the dilution prohibition in § 268.3—already make the conduct illegal. Whether the change is a technical correction or an interpretive rule, no opportunity for notice and comment is required. 5 U.S.C. § 553(b).

8. Treatment Residuals and Point of Generation of a New Hazardous Waste for LDR Purposes

The Agency has received several inquiries concerning treating TC metal wastes and the potential for finding underlying hazardous constituents at levels above the UTS in the treatment residuals that were either not present in the waste prior to treatment or may have been present but only at levels below the UTS. This would occur, for example, if the treatment process is such that certain underlying hazardous constituents (UHCs) might be more concentrated in treatment residuals than in the original waste.

Two illustrative scenarios are useful. The first involves a D007 chromium waste that is incinerated. Trace quantities of lead are present in the original waste, but at levels below the UTS (thus, lead is not a UHC under 40 CFR § 268.2(i)). The resulting ash is no longer characteristic for chromium, but lead is now present at levels above the UTS. The second involves a D008 lead wastewater that contains no underlying hazardous constituents as generated, but that is treated with dithiocarbamate, a metal precipitating agent. Dithiocarbamate is also a hazardous constituent that appears on the list of potential UHCs in § 268.48. The dithiocarbamate assists the stabilization of the lead but, after treatment, is present at levels above the UTS in the treatment residuals.

In both of these cases, the treatment residuals (ash and sludge) demonstrate that the original waste is decharacterized. Under § 268.2(i), the only UHCs that must be treated and that must meet the Universal Treatment Standards (UTS) are those determined to be present above UTS levels in the original waste—either via testing or generator knowledge. Because the treatment process results in non-hazardous residuals, the treatment facility is not responsible for additional testing to determine if any different underlying hazardous constituents are added or created during the treatment process itself. Furthermore, only the original UHCs must meet the UTS.

However, if in either case the treatment residual is also characteristic by having constituents that are not only above the UTS level but also above the TC level, then the residual is a newly-generated hazardous waste for LDR purposes. This result is consistent with the definition of generator at § 260.10: ''Generator means any person, by site, whose act or process produces hazardous waste identified or listed in part 261 * * * '' The result is also consistent with the key LDR principle that hazardous wastes must meet LDR treatment standards to minimize threats before the wastes are land disposed. See, e.g., *Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 16–18 (D.C. Cir. 1992) (treatment must include treatment for both characteristic property and for underlying hazardous constituents). For these reasons, the Agency regards generation of a new characteristic treatment residual as being a new point of generation for LDR purposes. This newly-formed hazardous waste would have to be treated to below the characteristic, and any underlying hazardous constituents would have to be treated to below their UTS levels.[1]

[1] This analysis is consistent with the so-called change of treatability group principle first stated at 55 FR at 22661, col. 2 (June 1, 1990). That principle states that LDR prohibitions remain attached to the initial waste as long as the waste remains within the same treatability group (normally wastewater or nonwastewater). Thus, if a characteristic wastewater is treated and a non-wastewater sludge is generated from the treatment process, the prohibition for the wastewater does not automatically apply to the sludge. Id. The situation discussed in the text above, however, involves the

Continued

Thus, in the first scenario above regarding a decharacterized waste with lead in the ash, if the lead is present in the ash at or above TC levels (i.e., a new D008 waste has been generated), the lead must be treated to UTS levels. Furthermore, the treater has generated the new hazardous waste for LDR purposes and is responsible for a new determination of UHCs that are present and that require treatment to UTS levels. The same is true in the second example if the dithiocarbamate treatment sludge is characteristic.

EPA notes further, however, that in determining whether a treatment process has generated a new hazardous waste for LDR purposes, the Agency looks to the entire treatment process, not to each component part. In general, as explained below, the determination of whether a new hazardous waste is generated—i.e., whether a new point of generation for LDR purposes is created—is made at the completion of the treatment process. Thus:

(i) For residuals that are the end product of a one-step treatment process or the end product of a treatment train, the treater has the obligation to ensure only that the original UHCs meet UTS standards and that the treatment residuals are not themselves characteristic. If a treatment residual in this scenario does not meet the treatment standards for the original characteristic (i.e., when treatment is ineffective or incomplete) and requires further treatment, EPA does not consider the treatment residue to be newly generated for LDR purposes. Such a treatment residue, however, cannot be land disposed until it meets the treatment standard applicable to the original waste. This situation would normally involve re-treating the waste residuals on-site. Any UHCs added or created by the treatment process are not required to be treated because there is no new point of generation for LDR purposes. However, as noted above, if the treatment residuals are themselves characteristic due to a new property (for example, the formerly characteristic chromium D007 waste is now characteristic only for D008 lead), then the treater must make a new determination of the UHCs present—either through knowledge or additional testing. This is the same obligation that attaches to any generator of a hazardous waste.

(ii) For treatment residuals that appear only at intermediate steps of a treatment train, there is no obligation to determine UHCs or to determine whether the residual is itself characteristic. Intermediate-step treatment residuals are not newly generated hazardous wastes for LDR purposes. Thus, even when an intermediate treatment residual is sent off-site for further treatment (such as incinerator ash going offsite for stabilization and landfilling), our current regulations at § 268.7(b)(5) require only that the UHCs identified at the LDR point of generation be identified. There is no such requirement for any new UHCs that may be added or created during the preceding steps of the treatment process.

9. Clarification of Footnote 7 in Preamble

LDR Phase IV, as mentioned earlier, deals with the status of mineral processing materials under the RCRA definition of solid waste at § 261.2. Footnote seven of the preamble to the LDR Phase IV final rule, as printed in the **Federal Register**, reads: ''EPA does note the potential anomaly that non-mineral processing secondary materials, at least for the moment, will be regulated in some cases stringently than those generated and reclaimed within the mineral processing industry.'' 63 FR at 28583 n. 7. This language reflects a printing error by the Office of Federal Register which erroneously omitted the word ''less'' before the word ''stringently'' in this sentence. The footnote thus should read: ''EPA does note the potential anomaly that non-mineral processing secondary materials, at least for the moment, will be regulated in some cases less stringently than those generated and reclaimed within the mineral processing industry.''

Of course, as EPA noted elsewhere in the rule, secondary materials within the mineral processing industry will be regulated in other instances less stringently than those from outside the industry (the principal example being characteristic spent materials being reclaimed). The main point, as expressed in the footnote, is that the new rules establish a separate solid waste classification scheme for the mineral processing industry that differs from the generic classification scheme set out in the remainder of § 261.2.

IV. Amendment to the August 31, 1998 Stay for Certain Zinc Micronutrient Fertilizers

On August 31, 1998, EPA issued an administrative stay of the Phase IV rule as it applies to zinc micronutrient fertilizers that are produced from hazardous wastes exhibiting the toxicity characteristic. 63 FR 46332. Although EPA clearly stated throughout the rule that the administrative stay applied to ''zinc micronutrient fertilizers,'' the regulatory language codifying the stay mistakenly refers instead to ''zinc-containing fertilizers.'' See 63 FR 46334, to be codified at 40 CFR § 268.40(i). There exists a remote possibility that there are fertilizers produced from toxicity characteristic hazardous wastes that do not utilize zinc as a micronutrient but otherwise contain zinc (possibly as a trace element without nutritive value). Since the administrative stay was not meant to apply to such (hypothetical) fertilizers, EPA is amending the regulatory language to cover only zinc micronutrient fertilizers, as intended.

V. Amendments to the September 4, 1998 Emergency Revision of the Treatment Standards for Listed Hazardous Wastes From Carbamate Production

The September 4, 1998 Emergency Revision of the LDR Treatment Standards for Listed Hazardous Wastes from Carbamate Production (63 FR 172) adds a paragraph (i) to § 268.40, which inadvertently replaced the existing paragraph (i) added by the Land Disposal Restrictions final rule published on August 31, 1998 (staying LDR metal standards for zinc micronutrient fertilizers). Today's rule redesignates the current paragraph (i) as paragraph (j), and reinserts the paragraph (i) from the August 31, 1998 rule (as additionally amended in this correction notice, see section IV above). The September 4, 1998 rule also inadvertently changes footnotes eight and 11 to the table of treatment standards found in § 268.40. The correct footnotes are reinstated in today's rule.

A more significant error in the September 4, 1998 Emergency Rule is the removal of footnote six for all constituents listed in the table of Universal Treatment Standards found in § 268.48. In doing so, the rule mistakenly changes the status of certain carbamate constituents, which should not be underlying hazardous constituents until their newly revised treatment standards go into effect on March 4, 1999. By removing the footnote, these carbamate constituents are considered underlying hazardous constituents as of September 4, 1998, the effective date of the Emergency Rule. This was and is not the Agency's intention, and we are therefore reinstating the footnote with the correct date of March 4, 1999.

---

status for this hypothetical sludge if it itself exhibits a characteristic of hazardous waste. EPA views such a characteristic sludge as being newly generated for LDR purposes.

The treatment standards for K159 in the Table of Treatment Standards for Hazardous Wastes in § 268.40 are currently incorrect. The standards were and should be those promulgated in the LDR Phase III final rule (61 FR 15566, April 8, 1996). However, those standards were inadvertently and mistakenly revised in a technical correction on February 19, 1997 (62 FR 7502). Today's rule reinstates the correct treatment standards for K159 in the § 268.40 table.

Finally, today's rule also corrects: (1) the nonwastewater standard for oxamyl, which was listed incorrectly in the entry for P194; and (2) the CAS numbers for acetophenone and triethylamine, which were listed incorrectly in the entries for K156 and U404, respectively.

VI. Amendment to the September 24, 1998 Revision of the Treatment Standards for Spent Potliners From Primary Aluminum Reduction (K088)

On September 24, 1998 EPA promulgated revised LDR treatment standards for waste code K088. The rule changes the nonwastewater standard for arsenic in K088 from 5.0 mg/l TCLP to 26.1 mg/kg total, and also changes the nonwastewater standard for fluoride in K088 from 48 mg/l TCLP to NA. The wastewater standard for fluoride is unaffected by the rule. (That standard also is not affected by the court's rationale in *Columbia Falls Aluminum Co.* v. *EPA*, 139 F. 3d 914, 922–23 (D.C. Cir. 1998) because the standard for fluoride wastewaters does not involve the use of the TCLP.) Unfortunately, the final rule inadvertently omitted fluoride, and its treatment standards, from the entry for K088 in the table of treatment standards in § 268.40. Because of this omission, the change to the nonwastewater standard for fluoride was not codified. Today we are restoring fluoride and its revised standards in the entry for K088 in the § 268.40 table.

VII. Analysis Under Executive Order 12866, Executive Order 12875, Executive Order 12898, Executive Order 13045, Executive Order 13084, the Unfunded Mandates Reform Act of 1995, the Regulatory Flexibility Act, and the Paperwork Reduction Act

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ''significant regulatory action'' and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty, contain any unfunded mandate, or impose any significant or unique impact on small governments as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4). This rule also does not require prior consultation with State, local, and tribal government officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993) or Executive Order 13084 (63 FR 27655, May 10, 1998), or involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). This rule also is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because EPA interprets E.O. 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Order has the potential to influence the regulation. This rule is not subject to E.O. 13045 because it does not establish an environmental standard intended to mitigate health or safety risks. EPA's compliance with these statutes and Executive Orders for the underlying rule is discussed in the May 12, 1997, the May 26, 1998, the August 31, 1998, the September 4, 1998, and the September 24, 1998 **Federal Register** notices.

VIII. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a good cause finding that notice and public procedure is impracticable, unnecessary or contrary to the public interest. This determination must be supported by a brief statement. 5 U.S.C. 808(2). As stated previously, EPA has made such a good cause finding, including the reasons therefor, and established an effective date of May 11, 1999. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

IX. Immediate Effective Date

EPA is making this rule effective immediately. The rule adopts corrections which are purely technical in that they correct outright printing errors, or are manifestly inconsistent with the Agency's stated intent. Comment on such changes is unnecessary, within the meaning of 5 U.S.C. 553(b)(3)(B). For the same reasons, there is good cause to make the rule effective immediately pursuant to 5 U.S.C. 553(d)(3).

List of Subjects

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 262

Hazardous waste, Labeling, Manifest, Reporting and recordkeeping requirements.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

Dated: April 20, 1999.

Timothy Fields, Jr.,

Acting Assistant Administrator.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Subpart A—General

1. The authority citation for Part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

2. Section 261.2 is amended by revising paragraph (c)(3), in Table 1 in paragraph (c)(4) by revising the reference ''261.4(a)(15)'' in the heading of column 3 to read ''261.4(a)(17)'', and paragraph (e)(1)(iii) is revised to read as follows:

§ 261.2 Definition of solid waste.

* * * * *

(c) * * *

(3) *Reclaimed.* Materials noted with a ''*'' in column 3 of Table 1 are solid wastes when reclaimed (except as provided under 40 CFR 261.4(a)(17)). Materials noted with a ''---'' in column 3 of Table 1 are not solid wastes when reclaimed (except as provided under 40 CFR 261.4(a)(17)).

* * * * *

(e) * * *

(1) * * *

(iii) Returned to the original process from which they are generated, without first being reclaimed or land disposed. The material must be returned as a substitute for feedstock materials. In cases where the original process to which the material is returned is a secondary process, the materials must be managed such that there is no placement on the land. In cases where the materials are generated and reclaimed within the primary mineral processing industry, the conditions of the exclusion found at § 261.4(a)(17) apply rather than this paragraph.

3. Section 261.4 is amended by redesignating the first paragraph (a)(16) as (a)(17), and by revising paragraphs (a)(17) introductory text, (a)(17)(v), and (b)(7)(iii) introductory text and (b)(7)(iii)(A) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(17) Secondary materials (i.e., sludges, by-products, and spent materials as defined in § 261.1) (other than hazardous wastes listed in subpart D of this part) generated within the primary mineral processing industry from which minerals, acids, cyanide, water or other values are recovered by mineral processing or by beneficiation, provided that:

* * * * *

(v) The owner or operator provides a notice to the Regional Administrator or State Director, identifying the following information: the types of materials to be recycled; the type and location of the storage units and recycling processes; and the annual quantities expected to be placed in non land-based units. This notification must be updated when there is a change in the type of materials recycled or the location of the recycling process.

* * * * *

(b) * * *

(7) * * *

(iii) A residue derived from co-processing mineral processing secondary materials with normal beneficiation raw materials or with normal mineral processing raw materials remains excluded under paragraph (b) of this section if the owner or operator:

(A) Processes at least 50 percent by weight normal beneficiation raw materials or normal mineral processing raw materials; and,

* * * * *

PART 262—STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

4. The authority citation for part 262 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912, 6922–6925, 6937, and 6938.

Subpart C—Pre-Transport Requirements

5. Section 262.34 is amended by revising paragraph (d)(4) to read as follows:

§ 262.34 Accumulation time.

* * * * *

(d) * * *

(4) The generator complies with the requirements of paragraphs (a)(2) and (a)(3) of this section, the requirements of subpart C of part 265, the requirements of 40 CFR 268.7(a)(5); and

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

6. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

7. Section 268.2 is amended by revising paragraphs (h) and (k) to read as follows:

§ 268.2 Definitions applicable in this part.

* * * * *

(h) Hazardous debris means debris that contains a hazardous waste listed in subpart D of part 261 of this chapter, or that exhibits a characteristic of hazardous waste identified in subpart C of part 261 of this chapter. Any deliberate mixing of prohibited hazardous waste with debris that changes its treatment classification (i.e., from waste to hazardous debris) is not allowed under the dilution prohibition in § 268.3.

* * * * *

(k) *Soil* means unconsolidated earth material composing the superficial geologic strata (material overlying bedrock), consisting of clay, silt, sand, or gravel size particles as classified by the U.S. Natural Resources Conservation Service, or a mixture of such materials with liquids, sludges or solids which is inseparable by simple mechanical removal processes and is made up primarily of soil by volume based on visual inspection. Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (i.e., from waste to contaminated soil) is not allowed under the dilution prohibition in § 268.3.

8. Section 268.7 is amended by revising entries 1, 3, and 8 to the table entitled ''Generator Paperwork Requirements Table'' in paragraph (a)(4), by revising entry 1 to the table entitled ''Treatment Facility Paperwork Requirements Table'' in paragraph (b)(3)(ii), and by revising paragraph (b)(4)(iv) to read as follows:

§ 268.7 Testing, tracking, and recordkeeping requirements for generators, treaters, and disposal facilities.

* * * * *

(a) * * *

(4) * * *

GENERATOR PAPERWORK REQUIREMENTS TABLE

Required information	§ 268.7(a)(2)	§ 268.7(a)(3)	§ 268.7(a)(4)	§ 268.7(a)(9)
1. EPA Hazardous Waste Numbers and Manifest Number of first shipment	✔	✔	✔	✔
* * * *	*	*	*	
3. The waste is subject to the LDRs. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents in characteristic wastes, unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice	✔	✔		

GENERATOR PAPERWORK REQUIREMENTS TABLE—Continued

Required information	§ 268.7(a)(2)	§ 268.7(a)(3)	§ 268.7(a)(4)	§ 268.7(a)(9)
* * * * * * *				
8. For contaminated soil subject to LDRs as provided in § 268.49(a), the constituents subject to treatment as described in § 268.49(d), and the following statement: This contaminated soil [does/does not] contain listed hazardous waste and [does/does not] exhibit a characteristic of hazardous waste and [is subject to/complies with the soil treatment standards as provided by § 268.49(c) or the universal treatment standards	✔	✔		
9. A certification is needed (see applicable section for exact wording)		✔		✔
* * * * *				

(b) * * *
(3) * * *
(ii) * * *

TREATMENT FACILITY PAPERWORK REQUIREMENTS TABLE

Required Information	§ 268.7(b)
1. EPA Hazardous Waste Numbers and Manifest Number of first shipment	✔
* * * * * * *	
6. A certification is needed (see applicable section for exact wording)	✔

* * * * *

(4) * * *

(iv) For characteristic wastes that are subject to the treatment standards in § 268.40 (other than those expressed as a method of treatment), or § 268.49, and that contain underlying hazardous constituents as defined in § 268.2(i); if these wastes are treated on-site to remove the hazardous characteristic; and are then sent off-site for treatment of underlying hazardous constituents, the certification must state the following:

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.49 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

* * * * *

9. Section 268.9 is amended by revising paragraphs (d)(2) introductory text and (d)(2)(i) to read as follows:

§ 268.9 Special rules regarding wastes that exhibit a characteristic.

* * * * *

(d) * * *

(2) The certification must be signed by an authorized representative and must state the language found in § 268.7(b)(4).

(i) If treatment removes the characteristic but does not meet standards applicable to underlying hazardous constituents, then the certification found in § 268.7(b)(4)(iv) applies.

* * * * *

10. Section 268.40 is amended by redesignating the first paragraph (i) as paragraph (j), by revising paragraph (i), and the table at the end of the section is amended by revising the entries for K088, K156, K159, P194, U404 and U408, and footnotes 8 and 11 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

(i) Zinc micronutrient fertilizers that are produced for the general public's use and that are produced from or contain recycled characteristic hazardous wastes (D004–D011) are subject to the applicable treatment standards in § 268.41 contained in the 40 CFR, parts 260 to 299, edition revised as of July 1, 1990.

* * * * *

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[Note: NA means not applicable.]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
K088	Spent potliners from primary aluminum reduction.	Acenaphthene	83–32–9	0.059	3.4
		Anthracene	120–12–7	0.059	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene	205–99–2	0.11	6.8
		Benzo(k)fluoranthene	207–08–9	0.11	6.8
		Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Fluoranthene	206–44–0	0.068	3.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable.]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
	.....	Indeno(1,2,3,-c,d)pyrene	193–39–5	0.0055	3.4
	.....	Phenanthrene	85–01–8	0.059	5.6
	.....	Pyrene	129–00–0	0.067	8.2
	.....	Antimony	7440–36–0	1.9	1.15 mg/l TCLP
	.....	Arsenic	7440–38–2	1.4	26.1 mg/l TCLP
	.....	Barium	7440–39–3	1.2	21 mg/l TCLP
	.....	Beryllium	7440–41–7	0.82	1.22 mg/l TCLP
	.....	Cadmium	7440–43–9	0.69	0.11 mg/l TCLP
	.....	Chromium (Total)	7440–47–3	2.77	0.60 mg/l TCLP
	.....	Lead	7439–92–1	0.69	0.75 mg/l TCLP
	.....	Mercury	7439–97–6	0.15	0.025 mg/l TCLP
	.....	Nickel	7440–02–0	3.98	11 mg/l TCLP
	.....	Selenium	7782–49–2	0.82	5.7 mg/l TCLP
	.....	Silver	7440–22–4	0.43	0.14 mg/l TCLP
	.....	Cyanide (Total) [7]	57–12–5	1.2	590
	.....	Cyanide (Amenable) [7]	57–12–5	0.86	30
	.....	Fluoride	16984–48–8	35	NA
*	*	*	*	*	*
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes.[10].	Acetonitrile	75–05–8	5.6	1.8
	.....	Acetophenone	98–86–2	0.010	9.7
	.....	Aniline	62–53–3	0.81	14
	.....	Benomyl	17804–35–2	0.056	1.4
	.....	Benzene	71–43–2	0.14	10
	.....	Carbaryl	63–25–2	0.006	0.14
	.....	Carbenzadim	10605–21–7	0.056	1.4
	.....	Carbofuran	1563–66–2	0.006	0.14
	.....	Carbosulfan	55285–14–8	0.028	1.4
	.....	Chlorobenzene	108–90–7	0.057	6.0
	.....	Chloroform	67–66–3	0.046	6.0
	.....	o-Dichlorobenzene	95–50–1	0.088	6.0
	.....	Methomyl	16752–77–5	0.028	0.14
	.....	Methylene chloride	75–09–2	0.089	30
	.....	Methyl ethyl ketone	78–93–3	0.28	36
	.....	Naphthalene	91–20–3	0.059	5.6
	.....	Phenol	108–95–2	0.039	6.2
	.....	Pyridine	110–86–1	0.014	16
	.....	Toluene	108–88–3	0.080	10
	.....	Triethylamine	121–44–8	0.081	1.5
*	*	*	*	*	*
K159	Organics from the treatment of thiocarbamate wastes.[10].	Benzene	71–43–2	0.14	10
	.....	Butylate	2008–41–5	0.042	1.4
	.....	EPTC (Eptam)	759–94–4	0.042	1.4
	.....	Molinate	2212–67–1	0.042	1.4
	.....	Pebulate	1114–71–2	0.042	1.4
	.....	Vernolate	1929–77–7	0.042	1.4
*	*	*	*	*	*
P194	Oxamyl	Oxamyl	23135–22–0	0.056	0.28
*	*	*	*	*	*
U404	Triethylamine	Triethylamine	121–44–8	0.081	1.5
*	*	*	*	*	*
U408	2,4,6-Tribromophenol	2,4,6-Tribromophenol	118–79–6	0.035	7.4

TREATMENT STANDARDS FOR HAZARDOUS WASTES—Continued

[Note: NA means not applicable.]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulated hazardous constituent		Wastewaters	Nonwastewaters
		Common name	CAS [2] No.	Concentration in mg/l [3]; or technology code [4]	Concentration in mg/kg [5] unless noted as "mg/l TCLP"; or technology code
*	*	*	*	*	*	*

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264 Subpart O or Part 265 Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * * * *

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

* * * * * * *

[8] These wastes, when rendered nonhazardous and then subsequently managed in CWA, or CWA-equivalent systems, are not subject to treatment standards. (See § 268.1(c)(3) and (4)).

* * * * * * *

[10] The treatment standard for this waste may be satisfied by either meeting the constituent concentrations in this table or by treating the waste by the specified technologies: combustion, as defined by the technology code CMBST at § 268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1 of this Part, for wastewaters.

[11] For these wastes, the definition of CMBST is limited to: (1) combustion units operating under 40 CFR 266, (2) combustion units permitted under 40 CFR Part 264, Subpart O, or (3) combustion units operating under 40 CFR 265, Subpart O, which have obtained a determination of equivalent treatment under 268.42 (b).

11. In § 268.48, the table in paragraph (a) is amended by adding footnote number "6" in column one, under the heading *Regulated Constituents/Common Name,* after the following chemical names: "Aldicarb sulfone," "Barban," "Bendiocarb," "Benomyl," "Butylate," "Carbaryl," "Carbenzadim," "Carbofuran," "Carbofuran phenol," "Carbosulfan," "m-Cumenyl methylcarbamate," "Dithiocarbamates (total)," "EPTC," "Formetanate hydrochloride," "Methiocarb," "Methomyl," "Metolcarb," "Mexacarbate," "Molinate," "Oxamyl," "Pebulate," "Physostigmine," "Physostigmine salicylate," "Promecarb," "Propham," "Propoxur," "Prosulfocarb," "Thiodicarb," "Thiophanate-methyl," "Triallate," "Triethylamine," and "Vernolate;" and by adding footnote 6 to read as follows:

§ 268.48 Universal treatment standards.

(a) * * *

6. Between August 26, 1998 and March 4, 1999, these constituents are not "underlying hazardous constituents" as defined in § 268.2(i) of this part.

12. Section 268.49 is amended by revising paragraph (c)(3) as follows:

§ 268.49 Alternative LDR treatment standards for contaminated soil.

* * * * *

(c) * * *

(3) Soils that contain nonanalyzable constituents. In addition to the treatment requirements of paragraphs (c)(1) and (2) of this section, prior to land disposal, the following treatment is required for soils that contain nonanalyzable constituents:

(A) For soil that contains only analyzable and nonanalyzable organic constituents, treatment of the analyzable organic constituents to the levels specified in paragraphs (c)(1) and (2) of this section; or,

(B) For soil that contains only nonanalyzable constituents, treatment by the method(s) specified in § 268.42 for the waste contained in the soil.

[FR Doc. 99–11271 Filed 5–10–99; 8:45 am]

BILLING CODE 6560–50–P

VIII. Submission to Congress and the Comptroller General I11The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of this rule in the **Federal Register**. This rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: October 5, 1999.

James Jones,

Director, Registration Division, Office of Pesticide Programs.

Therefore, 40 CFR chapter I is amended as follows:

PART 180–[AMENDED]

1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 321(q), (346a) and 371.

2. In § 180.487, by revising paragraph (a) to read as follows:

§ 180.487 Pyrithiobac sodium; tolerances for residues.

(a) *General.* Time-limited tolerances to expire on September 30, 2001 are established for residues of the herbicide, pyrithiobac-sodium, sodium 2-chloro-6-[(4,6-dimethoxypyrimidin-2-yl)thio]benzoate, in or on the following raw agricultural commodities:

Commodity	Parts per million	Expiration/Revocation Date
Cottonseed	0.02	9/30/01

* * * * *

[FR Doc. 99–27392 Filed 10–19–99; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261, 262, and 268

[FRL–6458–8]

RIN 2050–AE05

Land Disposal Restrictions Phase IV: Final Rule Promulgating Treatment Standards for Metal Wastes and Mineral Processing Wastes; Mineral Processing Secondary Materials and Bevill Exclusion Issues; Treatment Standards for Hazardous Soils, and Exclusion of Recycled Wood Preserving Wastewaters

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; technical correction.

SUMMARY: On May 11, 1999, the Agency published technical amendments correcting the Land Disposal Restrictions (LDR) Phase IV final rule. In today's rule, we are correcting two minor typographical errors and one omission in the May 11th rule. Also, we are correcting three other errors in the LDR Phase IV final rule that came to our attention after the May 11th technical amendments were promulgated.

EFFECTIVE DATE: This rule is effective on October 20, 1999.

ADDRESSES: The public may obtain a copy of this technical correction at the RCRA information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia.

FOR FURTHER INFORMATION CONTACT: For general information contact the RCRA Hotline at (800) 424–9346 (toll free) or (703) 920–9810 in the Washington, DC metropolitan area. For information on this rule contact Peggy Vyas (5302W), Office of Solid Waste, 401 M Street, SW, Washington, DC 20460, (703) 308–5477, e-mail address is ''vyas.peggy@epamail.epa.gov''.

SUPPLEMENTARY INFORMATION:

I. Reasons and Basis for Today's Action

The Agency recently published five rules all related to various aspects of the final Phase IV Land Disposal Restrictions (LDR) rule. These are: the May 12, 1997 LDR final rule (the so-called ''Mini'' Phase IV Rule, 62 FR 25998), the May 26, 1998 LDR Phase IV final rule (63 FR 28556), the August 31, 1998 administrative stay regarding certain zinc micronutrient fertilizers (63 FR 46332), the September 4, 1998 emergency revisions to the treatment standards for carbamate production wastes (63 FR 172), and the September 24, 1998 revisions to the treatment standards for spent aluminum potliners (63 FR 51254).

On May 11, 1999, the Agency published technical amendments correcting and clarifying certain aspects of all of these rules (64 FR 25408). The May 11th rule contained two minor typographical errors and one omission that we are correcting along with three other errors in the original May 26, 1998 LDR Phase IV final rule that have recently come to our attention.

II. Corrections to the May 11, 1999 Technical Amendments

A. Arsenic Treatment Standard in K088

In the September 24, 1998 (63 FR 51254) revision of the treatment standards for spent potliners from primary aluminum reduction (K088), the Agency inadvertently omitted the treatment standard adopted for fluoride wastewaters from the entry for K088 in the table of treatment standards in § 268.40. The May 11, 1999 technical amendments restored the fluoride wastewater treatment standard. However, in doing so, EPA inadvertently printed an incorrect measurement unit for the K088 treatment standard for arsenic (a standard which in fact required no correction at all).

The treatment standard for the nonwastewater form of arsenic in K088 (as revised on September 24, 1998) is 26.1 mg/kg, which is to be measured by the total amount of arsenic in the treatment residue. In the May 11, 1999 rule, the treatment standard was incorrectly given as 26.1 mg/l TCLP (a more conventional leaching test not using acid digestion). Today's rule removes the erroneous reference to ''mg/l TCLP'' for the nonwastewater arsenic standard for the K088 entry in the § 268.40 table.

B. Carbamate Treatment Standards

In the September 4, 1998 (63 FR 172) revision of the treatment standards for listed hazardous wastes from carbamate production, the Agency added a paragraph (i) to § 268.40, which inadvertently replaced the existing paragraph (i). The May 11, 1999 technical correction failed to properly reinstate the old paragraph. Today's rule reinserts paragraph § 268.40(i) from the September 4, 1998 rule and redesignates it as § 268.40(j).

C. Citation Within § 262.34(a)(4)

Part 262.34 contains the requirements for accumulating hazardous waste prior to treatment. In the May 11, 1999 technical correction, the Agency

amended § 262.34(d)(4) to change an internal citation reference from § 268.7(a)(4) to § 268.7(a)(5) to reflect some other regulatory changes to LDR paperwork requirements that had been adopted on May 12, 1997 (62 FR 25998). However, a parallel correction was not made to § 262.34(a)(4), which also contains the same outdated reference to § 268.7(a)(4). Today we are amending § 262.34(a)(4) to refer to § 268.7(a)(5).

III. Corrections to the May 26, 1998 LDR Phase IV Final Rule

A. Vacated K-Code Wastes

In the LDR Phase IV final rule, the Agency removed K064, K065, K066, K090, and K091 from the table of treatment standards in § 268.40. These five K-code wastes were vacated on April 9, 1999 in *Great Lakes Chemical Co.* v *EPA* (No. 98–1312 (D.C. Cir.)). However, these wastes still appear in the table of K-code hazardous wastes found in § 261.32. Today's rule removes these vacated K-code wastes from the list in § 261.32.

B. § 268.7(a)(3)(ii)

Also in the LDR Phase IV final rule, the Agency revised paragraph § 268.7(a)(3)(ii) by adding a one-time notification for shipping hazardous soil. However, in doing so, the Agency inadvertently replaced other language in that paragraph. Today's rule reinstates the original language and redesignates it as paragraph § 268.7(a)(3)(iii).

C. Measuring Compliance With Soil Standards

Lastly, the LDR Phase IV final rule promulgated treatment standards for contaminated soil. The preamble states that compliance with the 90% reduction treatment standard should be measured using the toxicity characteristic leachate procedure (TCLP) for metals and three non-metals: carbon disulfide, cyclohexanone, and methanol (see 63 FR at 28602). Although the preamble to the final rule made it clear that the TCLP test should be used for carbon disulfide, cyclohexanone, and methanol, the regulatory language found in § 268.49(c)(1)(A) did not. We are addressing this discrepancy in today's rule by amending the regulatory language to match the preamble because the preamble accurately represents the Agency's position.

IV. Analysis Under Executive Order 12866, Executive Order 12875, Executive Order 12898, Executive Order 13045, Executive Order 13084, the Unfunded Mandates Reform Act of 1995, the Regulatory Flexibility Act, and the Paperwork Reduction Act

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ''significant regulatory action'' and is therefore not subject to review by the Office of Management and Budget. In addition, this action does not impose any enforceable duty, contain any unfunded mandate, or impose any significant or unique impact on small governments as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4). This rule also does not require prior consultation with State, local, and tribal government officials as specified by Executive Order 12875 (58 FR 58093, October 28, 1993) or Executive Order 13084 (63 FR 27655, May 10, 1998), or involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). This rule also is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because EPA interprets E.O. 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Order has the potential to influence the regulation. This rule is not subject to E.O. 13045 because it does not establish an environmental standard intended to mitigate health or safety risks. EPA's compliance with these statutes and Executive Orders for the underlying rule is discussed in the May 12, 1997, the May 26, 1998, the September 4, 1998, and the September 24, 1998 **Federal Register** documents.

V. Submission to Congress and the General Accounting Office

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a good cause finding that notice and public procedure is impracticable, unnecessary or contrary to the public interest. This determination must be supported by a brief statement. 5 U.S.C. 808(2). As stated previously, EPA has made such a good cause finding, including the reasons therefor, and established an effective date of October 20, 1999. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

VI. Immediate Effective Date

EPA is making this rule effective immediately. The rule adopts amendments which are purely technical in that they correct inadvertent printing errors, or mistakes which are clearly inconsistent with the Agency's stated intent. Comment on such changes is unnecessary within the meaning of 5 U.S.C. 553(b)(3)(B). For the same reasons, there is good cause to make the rule effective immediately pursuant to 5 U.S.C. 553(d)(3).

List of Subjects

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

40 CFR Part 262

Hazardous waste, Labeling, Manifest, Reporting and recordkeeping requirements.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

Dated: September 21, 1999.

Michael Shapiro,

Acting Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

Subpart A—General

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

§ 261.32 [Amended]

2. The table in § 261.32 is amended by removing the entries for K064, K065, K066, K090, and K091.

PART 262—STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE

3. The authority citation for part 262 continues to read as follows:

Authority: 42 U.S.C. 6906, 6912, 6922–6925, 6937, and 6938.

Subpart C—Pre-Transport Requirements

4. Section 262.34 is amended by revising paragraph (a)(4) to read as follows:

§ 262.34 Accumulation time.

* * * * *

(a) * * *

(4) The generator complies with the requirements for owners or operators in subparts C and D in 40 CFR part 265, with § 265.16, and with 40 CFR 268.7(a)(5).

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

5. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart A—General

6. Section 268.7 is amended by adding paragraph (a)(3)(iii) to read as follows:

§ 268.7 Testing, tracking, and recordkeeping requirements for generators, treaters, and disposal facilities.

(a) * * *

(3) * * *

(iii) If the waste changes, the generator must send a new notice and certification to the receiving facility, and place a copy in their files. Generators of hazardous debris excluded from the definition of hazardous waste under § 261.3(f) of this chapter are not subject to these requirements.

* * * * *

7. Section 268.40 is amended by revising paragraph (j), and the table at the end of the section is amended by revising the entry for K088 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

(j) Effective September 4, 1998, the treatment standards for the wastes specified in 40 CFR 261.33 as EPA Hazardous Waste numbers P185, P191, P192, P197, U364, U394, and U395 may be satisfied by either meeting the constituent concentrations presented in the table ''Treatment Standards for Hazardous Wastes'' in this section, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST at § 268.42 Table 1 of this Part, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at § 268.42 Table 1 of this Part, for wastewaters.

TREATMENT STANDARDS FOR HAZARDOUS WASTES

[Note: NA means not applicable]

Waste code	Waste description and treatment/regulatory subcategory [1]	Regulation hazardous constituent		Wastewaters—Concentration in mg/l [3]; or technology code [4]	Nonwastewaters—Concentration in mg/kg [5] unless noted as ''mg/l TCLP''; or technology code
		Common name	CAS [2] No.		
*	* *	*	*	*	*
K088	Spent potliners from primary aluminum reduction..	Acenaphthene	83–32–9	0.059	3.4
		Anthracene	120–12–7	0.059	3.4
		Benz(a)anthracene	56–55–3	0.059	3.4
		Benzo(a)pyrene	50–32–8	0.061	3.4
		Benzo(b)fluoranthene	205–99–2	0.11	6.8
		Benzo(k)fluoranthene	207–08–9	0.11	6.8
		Benzo(g,h,i)perylene	191–24–2	0.0055	1.8
		Chrysene	218–01–9	0.059	3.4
		Dibenz(a,h)anthracene	53–70–3	0.055	8.2
		Fluoranthene	206–44–0	0.068	3.4
		Indeno(1,2,3,-c,d)pyrene	193–39–5	0.0055	3.4
		Penanthrene	85–01–8	0.059	5.6
		Pyrene	129–00–0	0.067	8.2
		Antimony	7440–36–0	1.9	1.15 mg/l TCLP.
		Arsenic	7440–38–2	1.4	26.1
		Barium	7440–39–3	1.2	21 mg/l TCLP.
		Beryllium	7440–41–7	0.82	1.22 mg/l TCLP.
		Cadmium	7440–43–9	0.69	0.11 mg/l TCLP.
		Chromium (Total)	7440–47–3	2.77	0.60 mg/l TCLP.
		Lead	7439–92–1	0.69	0.75 mg/l TCLP.
		Mercury	7439–97–6	0.15	0.025 mg/l TCLP.
		Nickel	7440–02–0	3.98	11 mg/l TCLP.
		Selenium	7782–49–2	0.82	5.7 mg/l TCLP.
		Silver	7440–22–4	0.43	0.14 mg/l TCLP.
		Cyanide (Total) [7]	57–12–5	1.2	590
		Cyanide (Amenable) [7]	57–12–5	0.86	30
		Fluoride	16984–48–8	35	NA.

Footnotes to Treatment Standard Table 268.40

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264 Subpart O or Part 265 Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * * * *

[7] Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.

* * * * * * *

8. Section 268.49 is amended by revising paragraphs (c)(1) (A) and (B) to read as follows:

§ 268.49 Alternative LDR treatment standards for contaminated soil.

* * * * *

(c) * * *

(1) * * *

(A) For non-metals except carbon disulfide, cyclohexanone, and methanol, treatment must achieve 90 percent reduction in total constituent concentrations, except as provided by paragraph (c)(1)(C) of this section.

(B) For metals and carbon disulfide, cyclohexanone, and methanol, treatment must achieve 90 percent reduction in constituent concentrations as measured in leachate from the treated media (tested according to the TCLP) or 90 percent reduction in total constituent concentrations (when a metal removal treatment technology is used), except as provided by paragraph (c)(1)(C)of this section.

* * * * * *

[FR Doc. 99–27138 Filed 10–19–99; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 635

[I.D. 100899B]

Atlantic Highly Migratory Species Fisheries; Atlantic Bluefin Tuna

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Opening of General category New York Bight fishery.

SUMMARY: NMFS opens the Atlantic Bluefin Tuna (BFT) General category New York Bight fishery. This action is being taken to provide for General category fishing opportunities in the New York Bight area only and to ensure additional collection of biological assessment and monitoring data.

DATES: Effective 1 a.m. on October 16, 1999, until the date that the set-aside quota is determined to have been taken, which will be published in the **Federal Register**.

FOR FURTHER INFORMATION CONTACT: Sarah McLaughlin or Pat Scida, 978–281–9260.

SUPPLEMENTARY INFORMATION: Regulations implemented under the authority of the Atlantic Tunas Convention Act (16 U.S.C. 971 *et seq.*) and the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*) governing the harvest of BFT by persons and vessels subject to U.S. jurisdiction are found at 50 CFR part 635. Section 635.27 subdivides the U.S. BFT landings quota recommended by the International Commission for the Conservation of Atlantic Tunas among the various domestic fishing categories. The General category landings quota, including time-period subquotas and the New York Bight set-aside, are specified annually as required under § 635.27(a)(1). The 1999 General category quota and effort control specifications were issued June 1, 1999 (64 FR 29806, June 3, 1999).

Opening of the New York Bight fishery

The New York Bight set-aside area is defined as the waters south and west of a straight line originating at a point on the southern shore of Long Island at 72°27' W. long. (Shinnecock Inlet) and running SSE 150° true, and north of 38°47' N. lat. (Delaware Bay). Under § 635.27(a)(1)(iii), NMFS may make available all or part of the 10 mt landings quota set aside for the New York Bight area when the coastwide General category fishery has been closed in any quota period. Previously, NMFS closed the coastwide General category fishery on October 3, 1999. At that time, NMFS announced that it would open the New York Bight fishery when it is determined that large medium and giant BFT are available in the New York Bight area. Allowing a few days transition between the closure of the coastwide fishery and the opening of the New York Bight fishery reduces concerns regarding enforcement of regulations applicable to that area. The New York Bight fishery will open effective 1 a.m., Saturday, October 16, 1999, until the date that the set-aside quota of 10 mt is determined to have been taken, which will be published in the **Federal Register**.

For vessels permitted in the General category: Upon the effective date of the New York Bight opening, retaining or landing large medium or giant BFT is authorized only within the set-aside area, until the set-aside quota for that area has been harvested. BFT harvested from waters outside the defined set-aside area may not be brought into the set-aside area. General category permit holders may tag and release BFT in all areas while the General category is closed, subject to the requirements of the tag-and-release program at § 635.26.

For vessels permitted in the Charter/Headboat category: When participating in the General category New York Bight fishery, i.e., fishing for large medium and giant BFT intended for sale, Charter/Headboat category vessels are subject to the same rules as General category vessels. Charter/Headboat category vessels may continue to fish in all areas under the Angling category regulations while the Angling category is open. Vessels permitted in the Charter/Headboat category that are still eligible for the Angling category trophy fish allowance under § 635.23(c)(1) or (2) may land one large medium or giant BFT prior to May 31, 2000. Trophy BFT may not be sold.

The announcement of the New York Bight fishery closure date will be filed with the Office of the Federal Register, and further communicated through the Highly Migratory Species (HMS) Fax Network, the Atlantic Tunas Information Line, NOAA weather radio,

(Approved by the Office of Management and Budget under control number 2900–0085)

5. In § 20.900, paragraphs (b) and (c) are revised; and paragraph (e) is added, to read as follows:

§ 20.900 Rule 900. Order of consideration of appeals.

* * * * *

(b) *Appeals considered in docket order.* Except as otherwise provided in this Rule, appeals are considered in the order in which they are entered on the docket.

(c) *Advancement on the docket.* A case may be advanced on the docket on the motion of the Chairman, the Vice Chairman, a party to the case before the Board, or such party's representative. Such a motion may be granted only if the case involves interpretation of law of general application affecting other claims, if the appellant is seriously ill or is under severe financial hardship, or if other sufficient cause is shown. ''Other sufficient cause'' shall include, but is not limited to, administrative error resulting in a significant delay in docketing the case. Such motions must be in writing and must identify the specific reason(s) why advancement on the docket is sought, the name of the veteran, the name of the appellant if other than the veteran (*e.g.,* a veteran's survivor, a guardian, or a fiduciary appointed to receive VA benefits on an individual's behalf), and the applicable Department of Veterans Affairs file number. The motion must be filed with: Director, Administrative Service (014), Board of Veterans' Appeals, 810 Vermont Avenue, NW., Washington, DC 20420. Where a motion is received prior to the assignment of the case to an individual member or panel of members, the ruling on the motion will be by the Vice Chairman, who may delegate such authority to a Deputy Vice Chairman. If a motion to advance a case on the docket is denied, the appellant and his or her representative will be immediately notified. If the motion to advance a case on the docket is granted, that fact will be noted in the Board's decision when rendered.

* * * * *

(e) *Postponement to provide hearing.* Any other provision of this Rule notwithstanding, a case may be postponed for later consideration and determination if such postponement is necessary to afford the appellant a hearing.

(Authority: 38 U.S.C. 7107, Pub. Law No. 103–446, § 302)

§ 20.609 [Amended]

6. In § 20.609, paragraph (i) is amended by removing ''the Court of Veterans Appeals'' from the next to the last sentence and adding, in its place, ''the United States Court of Appeals for Veterans Claims''.

§§ 20.714, 207.17, and 20.900 [Amended]

7. Sections 20.714(a)(5), 20.717(b), and 20.900(d) are amended by removing ''the United States Court of Veterans Appeals'' wherever it appears and, in each such section, adding in its place ''the United States Court of Appeals for Veterans Claims''.

[FR Doc. 00–6613 Filed 3–16–00; 8:45 am]

BILLING CODE 83201–01–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261, 268, 271, and 302

[FRL–6560–4]

RIN 2050–AD59

Organobromine Production Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Listing of CERCLA Hazardous Substances, Reportable Quantities; Final Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) today is announcing the vacature of regulatory provisions governing the identification of certain wastes as listed hazardous wastes. EPA is amending its regulations to conform with an order issued by the United States Court of Appeals for the District of Columbia Circuit (D.C. Cir.) in *Great Lakes Chemical Corporation* v. *EPA* (No. 98–1312), that vacated Agency regulations listing certain organobromine wastes as hazardous wastes under the Resource Conservation and Recovery Act (RCRA).

EPA also is modifying the land disposal restrictions treatment standards in 40 CFR part 268 by deleting these wastes and the associated treatment standards. In addition, EPA is vacating the Reportable Quantity (RQ) requirements for these notifications. Under the court's order, and as amended in today's rule, the vacated federal hazardous waste listings and regulatory requirements based on those listings are to be treated as though they were never in effect. State regulations, which may be more stringent than federal rules, were not necessarily affected by the court's ruling.

EFFECTIVE DATE: This rule will be effective on March 17, 2000.

ADDRESSES: EPA does not seek comment on this document. EPA will keep the official record for this action in paper form. The official record of this action is identified by Docket Number F–98–OBLF–FFFFF. The public may view supporting materials in the RCRA Information Center (RIC), located at EPA, Crystal Gateway #1, 1st Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, we recommend that you make an appointment by calling (703) 603–9230. You may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page.

Supporting materials are available for viewing in the RCRA Information Center (RIC), Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters, US EPA Ariel Rios (5101), 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C., metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For information on specific aspects of the rule, contact William (Rick) Brandes of the Office of Solid Waste (5304W), U.S. Environmental Protection Agency, US EPA Ariel Rios, 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460. [E-mail address and telephone numbers: *Brandes.william@epa.gov*, (703) 308–8871.]

SUPPLEMENTARY INFORMATION: . The court order vacating the listing determination will be added to Docket Number F–98–OBLF–FFFFF, the public docket for the rule that listed the organobromine wastes as hazardous. The rule, ''Organobromine Production Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Listing of CERCLA Hazardous Substances, Reportable Quantities,'' was issued in the **Federal Register** at 63 FR 24596 (May 4, 1998). EPA will keep the official record for this action in paper form. The official record is the paper record maintained at the address in the **ADDRESSES** section.

Contents of This Final Rule

I. Background

On May 4, 1998, EPA published in the **Federal Register** (63 FR 24596) a final rule listing as hazardous wastes under RCRA two wastes generated by the organobromine production industry. The rule added 2,4,6-tribromophenol to the list of commercial chemical products that are hazardous wastes only when they are discarded. This list is found at 40 CFR 261.33 and is divided into acutely hazardous wastes (''P-wastes'') and other toxic wastes (U-wastes''). 2,4,6-tribromophenol was designated waste code U408. Sweepings, off-specification product, and spent filter media from the production of 2,4,6-tribromophenol were added to the list of hazardous wastes from specific sources and designated as waste code K140. As part of the listing determination, and in accordance with Agency regulations, EPA also listed in Appendix VII of 40 CFR part 261 the hazardous constituents in the wastes upon which the listings were based.

The May 4, 1998 final rule also designated the two organobromine wastes as hazardous substances under the Comprehensive, Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601, and added them to the hazardous substance list at 40 CFR 302.4 with adjusted reportable quantities (RQs) of 100 pounds. EPA also promulgated land disposal restriction (LDR) regulations for the organobromine wastes. EPA amended its requirements for approval of state hazardous waste programs by adding the organobromine listings and LDR regulations to Tables 1 and 2 of 40 CFR 271.1. These tables list the regulations that establish the requirements and prohibitions applicable to state hazardous waste programs.

On April 9, 1999, the D.C. Circuit in *Great Lakes Chemical Corporation* v. *EPA*, ordered that the organobromine listing determinations be vacated. Accordingly, EPA is removing from the Code of Federal Regulations (CFR) the listings vacated by the court and all references to those listings. Today's document notifies the public that EPA is deleting from the lists of hazardous waste found in 40 CFR part 261, subpart D two wastes previously designated as hazardous waste codes K140 and U408. The first waste, previously designated as K140, is sweepings, off-speculation product and spent filter media from the production of 2,4,6-tribromophenol. The second waste, previously designated as U408, is 2,4,6-tribromophenol (commercial chemical product). EPA also is deleting 2,4,6-tribromophenol from the list of hazardous constituents in Appendix VIII of 40 CFR part 261. In addition, EPA is modifying the land disposal restrictions treatment standards in 40 CFR part 268 by deleting these wastes and the associated treatment standards. EPA also is vacating the Reportable Quantity (RQ) requirements for these notifications.

The effect of vacating the hazardous waste listing determination for these wastes is to clarify that these two wastestreams are not subject to the hazardous waste management and treatment standards under RCRA, as well as not subject to emergency notification requirements for releases of hazardous substances to the environment.

II. Amended Regulations

In 40 CFR 261.32, the following K-waste listing is deleted: K140—Floor sweepings, off-specification product and spent filter media from the production of 2,4,6-tribromophenol.

In the table in 40 CFR 261.33(f) the following U-waste listing is deleted:

Hazardous waste number	Chemical abstracts number	Substance
U408	118–79–6	2,4,6-Tribromophenol.

EPA also is deleting 2,4,6-tribromophenol from the hazardous constituent list in Appendix VII of 40 CFR Part 261. The Agency is deleting any mention of the vacated hazardous waste codes in Appendix VIII.

While the regulations for waste management at 40 CFR parts 262 through 266 are not affected by the court's action with regard to the vacature of the hazardous waste listing determinations for K140 and U408, it is clear that the regulations are not applicable to the vacated hazardous waste listings (unless those wastes exhibit a hazardous waste characteristic described in 40 CFR part 261, subpart C). However, to the extent that the wastes described in the vacated listings were included in federal permits before the ruling, appropriate action may need to be taken by permittees and permitting authorities to amend the permits. Any need to revise state permits will depend on state law. Since state law may be more stringent than federal law, there may be circumstances in which a facility managing organobromine wastes may be required to retain the state permits.

The land disposal restriction (LDR) regulations for hazardous wastes are amended to remove K140 and U408. Specifically, the Agency is amending 40 CFR 268.33 to remove LDR requirements for K140 and U408 and amending the table in 40 CFR 268.40 to remove the entries for K140 and U408. In addition, 2,4,6-tribromophenol is removed from the Universal Treatment Standards table in 40 CFR 268.48.

Today's final rule also removes the vacated K140 and U408 wastes from CERCLA designation as hazardous substances. Accordingly, these wastes are removed from the list of CERCLA hazardous substances at 40 CFR 302.4.

III. State Authority

The tables in 40 CFR 271.1 are amended to reflect the issuance of this document so that states will understand they are not required by the federal Resource Conservation and Recovery Act to adopt the hazardous waste listings for K140 and U408. Since today's rule does not establish any new regulations, no additional requirements or obligations are imposed on the states by its promulgation. RCRA section 3009 provides that states may not issue regulations less stringent than those authorized under subtitle C or RCRA. However, section 3009 of RCRA also provides that states may impose more stringent requirements than those regulations promulgated by EPA under subtitle C. Thus, regulations vacated by the court in *Great Lakes Chemical Corporation* v. *EPA* may be permissible under state law.

IV. Good Cause Exemption from Notice-and-Comment Rulemaking Procedures

The Administrative Procedure Act generally requires agencies to provide prior notice and opportunity for public comment before issuing a final rule (5 U.S.C. 553(b)). Rules are exempt from this requirement if the issuing agency finds for good cause that notice and comment are unnecessary (5 U.S.C. 553(b)(3)(B)).

EPA has determined that providing prior notice and opportunity for comment on the regulations amending the RCRA hazardous waste management requirements to comply with the court decision vacating the hazardous waste listing determinations for waste codes K140 and U408, is not necessary. The regulations are no longer legally in effect by order of the federal court of appeals. Thus, amending the hazardous waste regulations has no legal impact and only states the current legal status of the rules.

For the same reasons stated above, EPA believes there is good cause for making the amending regulations immediately effective. (See 5 U.S.C. 553(d))

V. Administrative Assessments

Under Executive Order 12866 (58 FR 51735, October 4, 1993), today's action has no regulatory impact because it merely reflects the current legal status of the regulations. This ''regulatory action'' does not impose annual costs of $100 million or more and is not a subject to review by the Office of Management and Budget. Because this action only amends the CFR to comply with the current legal status of the rules, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), or to sections 202, 204 and 205 of the Unfunded Mandates Reform Act of 1995 (UMRA) (Public Law 104–4). This action will not significantly or uniquely affect small governments, as specified in section 203 of UMRA, or communities of tribal governments, as specified in Executive Order 13084 (63 FR 27655, May 10, 1998). For the same reason, this rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This rule also is not subject to Executive Order 13045, ''Protection of Children from Environmental Health risks and Safety Risks'' (62 FR 19885, April 23, 1997), because it is not economically significant and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

This rule does not involve technical standards; thus, the requirements of section 12(c) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. As required by section 3 of Executive Order 12988 (61 FR 4729, February 7, 1996), in issuing this rule, EPA has taken the necessary steps to eliminate drafting errors and ambiguity, minimize potential litigation, and provide a clear legal standard for affected conduct. EPA has complied with Executive Order 12630 (53 FR 8859, March 15, 1988) by examining the takings implications of the rule in accordance with the ''Attorney General's Supplemental Guidelines for the Evaluation of Risk and Avoidance of Unanticipated Takings'' issued under the executive order. This rule does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

Today's final rule will have no effect upon minority and/or low-income populations. The amending regulations promulgated today reflect current law and are meant only to amend the Code of Federal Regulations to comply with the current legal status of the rules. Therefore, today's rule is not subject to Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.''

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a rule effective sooner than otherwise provided by the CRA if the agency makes a good cause finding that notice and public procedure is impracticable, unnecessary or contrary to the public interest. This determination must be supported by a brief statement. 5 U.S.C. 808(2). As stated previously, EPA has made such a good cause finding, including the reasons therefor, and established an effective date of March 17, 2000. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 148

Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous materials, Waste treatment and disposal, Recycling.

40 CFR Part 268

Environmental protection, Hazardous materials, Waste management, Reporting and recordkeeping requirements, Land disposal restrictions, Treatment standards.

40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous material transportation, Hazardous waste, Indians-lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 302

Environmental protection, Air pollution control, Chemicals, Emergency Planning and Community Right-to-Know Act, Extremely hazardous substances, Hazardous chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous waste, Intergovernmental relations, Natural resources, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: March 8, 2000.

Timothy R. Fields, Jr.,

Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set forth in the preamble, title 40, chapter 1 of the Code of Federal Regulations is proposed to be amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Sec. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

§ 148.18 [Amended]

2. Section 148.18 is amended by removing and reserving paragraph (f).

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

3. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

§ 261.32 [Amended]

4. Section 261.32 is amended in the table under ''Organic Chemicals'' by removing the entry for K140.

§ 261.33 [Amended]

5. Section 261.33(f) is amended in the table by removing in its entirety the entry for U408 (2,4,6-Tribromophenol).

Appendix VII to Part 261 [Amended]

6. Appendix VII to Part 261 is amended by removing the entire entry for EPA hazardous waste number K140.

Appendix VIII to Part 261 [Amended]

7. Appendix VIII to Part 261 is amended by removing the entire entry for 2,4,6-Tribromophenol.

PART 268—LAND DISPOSAL RESTRICTIONS

8. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart C—Prohibitions on Land Disposal

§ 268.33 [Amended]

9. Section 268.33 is removed and reserved.

Subpart D—Treatment Standards

§ 268.40 [Amended]

10. In § 268.40, the table is amended by removing the entire entries for K140 and U408.

§ 268.48 [Amended]

11. In § 268.48, the table is amended by removing the entire entry for 2,4,6-Tribromophenol.

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

12. The authority citation for part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

13. Section 271.1(j) is amended by adding the following entry to Table 1 in chronological order by date of publication in the **Federal Register**, and by adding the following entries to Table 2 in chronological order by date of publication in the **Federal Register** to read as follows:

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	Federal Register reference	Effective date
*	* * *	*	*
March 17, 2000	Vacated Organobromine wastes	[*insert FEDERAL REGISTER page numbers.*].	November 4, 1998.
*	* * *	*	*

TABLE 2.—SELF-IMPLEMENTING PROVISIONS OF THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	Federal Register reference
*	* * *	*	*
November 4, 1998	Prohibition on land disposal of organobromine waste (Vacated wastes).	3004(g)(4)(c) and 3004(m)	3/17/00. [insert FR page numbers.].
*	* * *	*	*
November 4, 1998	Prohibition on land disposal of radioactive waste mixed with the newly listed and identified wastes, including soil and debris (Vacated organobromine wastes).	3004(m) and 3004(g)(4)(c)	3/17/00. [insert FR page numbers.].
*	* * *	*	*

* * * * *

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

14. The authority citation for part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

§ 302.4 [Amended]

15. Section 302.4 is amended by removing the entries in Table 302.4, in their entirety, for ''2,4,6-Tribromophenol,'' and for ''K140 Floor sweepings, off-specification product and spent filter media from the production of 2,4,6-tribromophenol.''

Appendix A to § 302.4 [Amended]

16. Appendix A to § 302.4—Sequential CAS Registry Number List of CERCLA Hazardous Substances is amended by removing the entire entry for CAS Registry Number 118796.

[FR Doc. 00–6393 Filed 3–16–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 300

[FRL–6561–9]

National Oil and Hazardous Substances Contingency Plan; National Priorities List Update

AGENCY: Environmental Protection Agency.

ACTION: Notice of deletion of the Sand Springs Petrochemical Complex Superfund Site from the National Priorities List (NPL).

SUMMARY: The Environmental Protection Agency (EPA) announces the deletion of the Sand Springs Petrochemical

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261 and 268

[FRL–6711–4]

Organobromines Production Wastes; Petroleum Refining Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Final Rule and Correcting Amendments

AGENCY: Environmental Protection Agency.

ACTION: Final rule; correcting amendments.

SUMMARY: The Environmental Protection Agency (EPA) is correcting errors that appeared in the March 17, 2000 final rule (65 FR 14472) that announced the vacature of regulatory provisions governing the identification of certain organobromine production wastes as listed hazardous wastes under the Resource Conservation and Recovery Act (RCRA). EPA also is correcting a typographical error that appeared in the August 6, 1998 final rule (63 FR 42110) listing four wastes from the petroleum refining industry as hazardous.

This final rule creates no new regulatory requirements. Rather, it corrects errors associated with the March 17, 2000 **Federal Register** document. The rule also corrects a typographical error that appeared in the August 6, 1998 **Federal Register** document.

EFFECTIVE DATE: This rule is effective June 8, 2000.

ADDRESSES: EPA does not seek comment on this document. EPA will keep the official records for today's action in paper form. The official record for the Listing Determination for Organobromine Production Wastes is identified by Docket Number F–98–OBLF–FFFFF. The official record for the Listing Determination for Petroleum Refining Wastes is Docket Number F–98–PRLF–FFFFF. The public may view supporting materials in the RCRA Information Center (RIC), located at EPA, Crystal Gateway #1, 1st Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, we recommend that you make an appointment by calling (703) 603–9230. You may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. Supporting materials are available for viewing in the RCRA Information Center (RIC), Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters, US EPA Ariel Rios (5101), 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C., metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For information on specific aspects of the rule, contact Patricia Overmeyer of the Office of Solid Waste (5304W), U.S. Environmental Protection Agency, US EPA Ariel Rios, 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460. (E-mail address and telephone numbers: *Overmeyer.Patricia @epa.gov,* (703) 605–0708.)

SUPPLEMENTARY INFORMATION: The rule, ''Organobromine Production Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Listing of CERCLA Hazardous Substances, Reportable Quantities,'' was issued in the **Federal Register** at 63 FR 24596 (May 4, 1998). The rule vacating the listing determination for organobromine production wastes was issued in the **Federal Register** at 65 FR 14472 (March 17, 2000). The rule, ''Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Petroleum Refining Process Wastes; Land Disposal Restrictions for Newly Identified Wastesa; and CERCLA Hazardous Substance Designation and Reportable Quantities,'' was issued the **Federal Register** at 63 FR 42110 (August 6, 1998). EPA will keep the official records for these actions in paper form. The official records are the paper records maintained at the address in the **ADDRESSES** section.

Contents of this Final Rule

I. Background

On March 17, 2000 EPA published a final rule announcing the vacature of regulatory provisions governing the identification of certain wastes listed as hazardous. In that final rule, EPA amended its regulations to conform with an order issued by the United States Court of Appeals for the District of Columbia Circuit (D.C. Cir.) in Great Lakes Chemical Corporation v. EPA (No. 98–1312). That court order vacated Agency regulations listing certain organobromine wastes as hazardous wastes under the Resource Conservation and Recovery Act (RCRA). The hazardous waste listing determinations that were vacated by the court and deleted from the regulations in the March 17, 2000 final rule included the wastes listed as K140 and U408. The effect of vacating the hazardous waste listing determination for these wastes was to clarify that these two wastestreams are not subject to the hazardous waste management and treatment standards under RCRA, as well as not subject to emergency notification requirements for releases of hazardous substances to the environment.

On August 6, 1998, EPA amended the regulations for hazardous waste management under RCRA to list as hazardous four wastes generated by the petroleum refining industry. The effect of the final rule was to subject the four wastes to stringent management and treatment standards under RCRA and to emergency notification requirements for releases of hazardous substances to the environment. As part of this final regulation, the Agency also amended the existing listing description for hazardous waste code F037 in 40 CFR 261.31. The intent of the amendment was to clarify that residuals generated from processing or recycling oil-bearing hazardous secondary materials (which are excluded from the definition of solid waste due to the newly promulgated exclusion at 40 CFR 261.4(a)(12)(i)) that are not returned to refinery operations and would otherwise meet a listing under subpart D of 40 CFR part 261, were to be designated as F037 listed wastes when disposed of or intended for disposal. However, the amending language included in the August 6, 1998 FR document included a typographical error that made the intent of the amendment unclear.

II. Amended Regulations

In the March 17, 2000 final rule vacating the hazardous waste listings for K140 and U408, EPA inadvertently removed and reserved paragraph (f) of 40 CFR 148.18. The Agency should have removed and reserved paragraph (h) of 40 CFR 148.18. Paragraph (h) of 40 CFR 148.18 is the provision prohibiting the underground injection of K140 and U408. Today, EPA is correcting this error by reinstating paragraph (f) and removing and reserving paragraph (h) of 40 CFR 148.18.

In addition, in the March 17, 2000 final rule, EPA neglected to delete the reference to U408 in appendix VII of 40 CFR part 268. Today, EPA is deleting the reference to U408 in appendix VII to 40 CFR part 268.

In the August 6, 1998 final rule, a typographical error appeared in the amended listing description for hazardous waste code F037. Today, EPA is revising the listing description for hazardous waste code F037 in 40 CFR 261.31(a) to reflect the Agency's original intent of the amendment, as described in the preamble to the August 6, 1998 final rule.

III. Good Cause Exemption from Notice-and-Comment Rulemaking Procedures

The Administrative Procedure Act generally requires agencies to provide prior notice and opportunity for public comment before issuing a final rule (5 U.S.C. 553(b)). Rules are exempt from this requirement if the issuing agency finds for good cause that notice and comment are unnecessary (5 U.S.C. 553(b)(3)(B)).

EPA has determined that providing prior notice and opportunity for comment on today's notice that corrects regulations amending the RCRA hazardous waste management requirements to comply with the court decision vacating the hazardous waste listing determinations for waste codes K140 and U408, is not necessary. The regulations are no longer legally in effect by order of the federal court of appeals. Thus, amending the hazardous waste regulations has no legal impact and only states the current legal status of the rules.

For the same reasons stated above, EPA believes there is good cause for making the amending regulations immediately effective. (See 5 U.S.C. 553(d))

IV. Administrative Assessments

Today's amendments to the RCRA hazardous waste management regulations only correct errors in **Federal Register** documents issued on March 17, 2000 and August 6, 1998. These corrections have no regulatory impact, and do not impose annual costs of $100 million or more. Therefore, this action is not a ''significant'' regulatory action, as defined by Executive Order 12866, and is not subject to review by the Office of Management and Budget. In addition, the amending regulations promulgated today will have no effect on small entities. This is evidenced by the fact that today's rule only corrects errors in the CFR. There is no impact on public or private entities, or on state, local, and tribal governments. Because the rule will not have a ''significant'' economic impact on small entities, a regulatory flexibility analysis is not required. Also, this final rule is not subject to the Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. Today's rule does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3510 *et seq.*).

Today's action will have no impact upon state, local, and tribal governments, or on the private sector. The amending regulations promulgated today reflect current law, there will be no legal impact on public or private entities. Therefore, today's rule is not subject to the provisions of sections 202, 204 or 205 of the Unfunded Mandates Reform Act of 1995 (UMRA) (Public Law 104–4).

For the same reasons stated above, this rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999).

This rule does not involve technical standards; thus, the requirements of section 12(c) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. As required by section 3 of Executive Order 12988 (61 FR 4729, February 7, 1996), in issuing this rule, EPA has taken the necessary steps to eliminate drafting errors and ambiguity, minimize potential litigation, and provide a clear legal standard for affected conduct. EPA has complied with Executive Order 12630 (53 FR 8859, March 15, 1988) by examining the takings implications of the rule in accordance with the ''Attorney General's Supplemental Guidelines for the Evaluation of Risk and Avoidance of Unanticipated Takings'' issued under the executive order.

Today's final rule will have no effect upon minority and/or low-income populations. Therefore, today's rule is not subject to Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations.''

List of Subjects

40 CFR Part 148

Environmental Protection Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous materials, Recycling, Waste treatment and disposal.

40 CFR Part 268

Environmental protection, Hazardous materials, Land disposal restrictions, Reporting and recordkeeping requirements, Treatment standards, Waste management.

Dated: May 30, 2000.

Timothy R. Fields, Jr.,

Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set forth in the preamble, title 40, chapter 1 of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Sec. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

2. Section 148.18 is amended by removing and reserving paragraph (h) and adding paragraph (f), to read as follows:

§ 148.18 Waste specific prohibitions-newly listed and identified wastes.

* * * * *

(f) On January 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste number K088 is prohibited from underground injection.

* * * * *

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

3. The authority citation for part 261 continues to read as follows:

Authority: Sec. 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

4. In § 261.31(a), the table is amended by revising the entry for F037, to read as follows:

§ 261.31 Hazardous wastes from non-specific sources.

(a) * * *

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
*	* * * * * * *	
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oil cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under § 261.4(a)(12)(i), if those residuals are to be disposed of.	(T)
*	* * * * * * *	

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

5. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Appendix VII to Part 268 [Amended]

6. In appendix VII to part 268 Table 1 is amended by removing the entry for U048.

[FR Doc. 00–14321 Filed 6–7–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[OPP–301004; FRL–6558–4]

RIN 2070–AB78

Imidacloprid; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes time-limited tolerances for the combined residues of imidacloprid and its metabolites containing the 6-chloropyridinyl moiety, all expressed as parent in or on stone fruit (Crop Group 12). This action is in response to EPA's granting of emergency exemptions under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of the pesticide on stone fruit. This regulation establishes maximum permissible levels for residues of imidacloprid on these food commodities. The tolerances will expire and are revoked on December 31, 2001.

DATES: This regulation is effective June 8, 2000. Objections and requests for hearings, identified by docket control number OPP–301004, must be received by EPA on or before August 7, 2000.

ADDRESSES: Written objections and hearing requests may be submitted by mail, in person, or by courier. Please follow the detailed instructions for each method as provided in Unit VII. of the ''SUPPLEMENTARY INFORMATION.'' To ensure proper receipt by EPA, your objections and hearing requests must identify docket control number OPP–301004 in the subject line on the first page of your response.

FOR FURTHER INFORMATION CONTACT: By mail: Andrew Ertman, Registration Division (7505C), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (703) 308–9367; e-mail address: ertman.andrew@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. Potentially affected categories and entities may include, but are not limited to:

Categories	NAICS codes	Examples of potentially affected entities
Industry	111 112 311 32532	Crop production Animal production Food manufacturing Pesticide manufacturing

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in the table could also be affected. The North American Industrial Classification System (NAICS) codes have been provided to assist you and others in determining whether or not this action might apply to certain entities. If you have questions regarding the applicability of this action to a particular entity, consult the person listed under ''FOR FURTHER INFORMATION CONTACT.''

B. How Can I Get Additional Information, Including Copies of This Document and Other Related Documents?

1. *Electronically*. You may obtain electronic copies of this document, and certain other related documents that might be available electronically, from the EPA Internet Home Page at http://www.epa.gov/. To access this document, on the Home Page select ''Laws and Regulations'' and then look up the entry for this document under the ''**Federal Register**—Environmental Documents.'' You can also go directly to the **Federal Register** listings at http://www.epa.gov/fedrgstr/.

2. *In person*. The Agency has established an official record for this action under docket control number OPP–301004. The official record consists of the documents specifically referenced in this action, and other information related to this action, including any information claimed as Confidential Business Information (CBI). This official record includes the documents that are physically located in the docket, as well as the documents that are referenced in those documents. The public version of the official record does not include any information claimed as CBI. The public version of the official record, which includes printed, paper versions of any electronic comments submitted during an

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261 and 268

[FRL–6711–4]

Organobromines Production Wastes; Petroleum Refining Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Final Rule and Correcting Amendments

AGENCY: Environmental Protection Agency.

ACTION: Final rule; correcting amendments.

SUMMARY: The Environmental Protection Agency (EPA) is correcting errors that appeared in the March 17, 2000 final rule (65 FR 14472) that announced the vacature of regulatory provisions governing the identification of certain organobromine production wastes as listed hazardous wastes under the Resource Conservation and Recovery Act (RCRA). EPA also is correcting a typographical error that appeared in the August 6, 1998 final rule (63 FR 42110) listing four wastes from the petroleum refining industry as hazardous.

This final rule creates no new regulatory requirements. Rather, it corrects errors associated with the March 17, 2000 **Federal Register** document. The rule also corrects a typographical error that appeared in the August 6, 1998 **Federal Register** document.

EFFECTIVE DATE: This rule is effective June 8, 2000.

ADDRESSES: EPA does not seek comment on this document. EPA will keep the official records for today's action in paper form. The official record for the Listing Determination for Organobromine Production Wastes is identified by Docket Number F–98–OBLF–FFFFF. The official record for the Listing Determination for Petroleum Refining Wastes is Docket Number F–98–PRLF–FFFFF. The public may view supporting materials in the RCRA Information Center (RIC), located at EPA, Crystal Gateway #1, 1st Floor, 1235 Jefferson Davis Highway, Arlington, VA. The RIC is open from 9:00 a.m. to 4:00 p.m., Monday through Friday, excluding Federal holidays. To review docket materials, we recommend that you make an appointment by calling (703) 603–9230. You may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. Supporting materials are available for viewing in the RCRA Information Center (RIC), Office of Solid Waste (5305G), U.S. Environmental Protection Agency Headquarters, US EPA Ariel Rios (5101), 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C., metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For information on specific aspects of the rule, contact Patricia Overmeyer of the Office of Solid Waste (5304W), U.S. Environmental Protection Agency, US EPA Ariel Rios, 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460. (E-mail address and telephone numbers: *Overmeyer.Patricia @epa.gov,* (703) 605–0708.)

SUPPLEMENTARY INFORMATION: The rule, ''Organobromine Production Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Listing of CERCLA Hazardous Substances, Reportable Quantities,'' was issued in the **Federal Register** at 63 FR 24596 (May 4, 1998). The rule vacating the listing determination for organobromine production wastes was issued in the **Federal Register** at 65 FR 14472 (March 17, 2000). The rule, ''Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Petroleum Refining Process Wastes; Land Disposal Restrictions for Newly Identified Wastesa; and CERCLA Hazardous Substance Designation and Reportable Quantities,'' was issued the **Federal Register** at 63 FR 42110 (August 6, 1998). EPA will keep the official records for these actions in paper form. The official records are the paper records maintained at the address in the **ADDRESSES** section.

Contents of this Final Rule

I. Background

On March 17, 2000 EPA published a final rule announcing the vacature of regulatory provisions governing the identification of certain wastes listed as hazardous. In that final rule, EPA amended its regulations to conform with an order issued by the United States Court of Appeals for the District of Columbia Circuit (D.C. Cir.) in Great Lakes Chemical Corporation v. EPA (No. 98–1312). That court order vacated Agency regulations listing certain organobromine wastes as hazardous wastes under the Resource Conservation and Recovery Act (RCRA). The hazardous waste listing determinations that were vacated by the court and deleted from the regulations in the March 17, 2000 final rule included the wastes listed as K140 and U408. The effect of vacating the hazardous waste listing determination for these wastes was to clarify that these two wastestreams are not subject to the hazardous waste management and treatment standards under RCRA, as well as not subject to emergency notification requirements for releases of hazardous substances to the environment.

On August 6, 1998, EPA amended the regulations for hazardous waste management under RCRA to list as hazardous four wastes generated by the petroleum refining industry. The effect of the final rule was to subject the four wastes to stringent management and treatment standards under RCRA and to emergency notification requirements for releases of hazardous substances to the environment. As part of this final regulation, the Agency also amended the existing listing description for hazardous waste code F037 in 40 CFR 261.31. The intent of the amendment was to clarify that residuals generated from processing or recycling oil-bearing hazardous secondary materials (which are excluded from the definition of solid waste due to the newly promulgated exclusion at 40 CFR 261.4(a)(12)(i)) that are not returned to refinery operations and would otherwise meet a listing under subpart D of 40 CFR part 261, were to be designated as F037 listed wastes when disposed of or intended for disposal. However, the amending language included in the August 6, 1998 FR document included a typographical error that made the intent of the amendment unclear.

II. Amended Regulations

In the March 17, 2000 final rule vacating the hazardous waste listings for K140 and U408, EPA inadvertently removed and reserved paragraph (f) of 40 CFR 148.18. The Agency should have removed and reserved paragraph (h) of 40 CFR 148.18. Paragraph (h) of 40 CFR 148.18 is the provision prohibiting the underground injection of K140 and U408. Today, EPA is correcting this error by reinstating paragraph (f) and removing and reserving paragraph (h) of 40 CFR 148.18.

In addition, in the March 17, 2000 final rule, EPA neglected to delete the reference to U408 in appendix VII of 40 CFR part 268. Today, EPA is deleting the reference to U408 in appendix VII to 40 CFR part 268.

In the August 6, 1998 final rule, a typographical error appeared in the amended listing description for hazardous waste code F037. Today, EPA is revising the listing description for hazardous waste code F037 in 40 CFR 261.31(a) to reflect the Agency's original intent of the amendment, as described in the preamble to the August 6, 1998 final rule.

III. Good Cause Exemption from Notice-and-Comment Rulemaking Procedures

The Administrative Procedure Act generally requires agencies to provide prior notice and opportunity for public comment before issuing a final rule (5 U.S.C. 553(b)). Rules are exempt from this requirement if the issuing agency finds for good cause that notice and comment are unnecessary (5 U.S.C. 553(b)(3)(B)).

EPA has determined that providing prior notice and opportunity for comment on today's notice that corrects regulations amending the RCRA hazardous waste management requirements to comply with the court decision vacating the hazardous waste listing determinations for waste codes K140 and U408, is not necessary. The regulations are no longer legally in effect by order of the federal court of appeals. Thus, amending the hazardous waste regulations has no legal impact and only states the current legal status of the rules.

For the same reasons stated above, EPA believes there is good cause for making the amending regulations immediately effective. (See 5 U.S.C. 553(d))

IV. Administrative Assessments

Today's amendments to the RCRA hazardous waste management regulations only correct errors in **Federal Register** documents issued on March 17, 2000 and August 6, 1998. These corrections have no regulatory impact, and do not impose annual costs of $100 million or more. Therefore, this action is not a ''significant'' regulatory action, as defined by Executive Order 12866, and is not subject to review by the Office of Management and Budget. In addition, the amending regulations promulgated today will have no effect on small entities. This is evidenced by the fact that today's rule only corrects errors in the CFR. There is no impact on public or private entities, or on state, local, and tribal governments. Because the rule will not have a ''significant'' economic impact on small entities, a regulatory flexibility analysis is not required. Also, this final rule is not subject to the Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. Today's rule does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3510 *et seq.*).

Today's action will have no impact upon state, local, and tribal governments, or on the private sector. The amending regulations promulgated today reflect current law, there will be no legal impact on public or private entities. Therefore, today's rule is not subject to the provisions of sections 202, 204 or 205 of the Unfunded Mandates Reform Act of 1995 (UMRA) (Public Law 104–4).

For the same reasons stated above, this rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999).

This rule does not involve technical standards; thus, the requirements of section 12(c) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. As required by section 3 of Executive Order 12988 (61 FR 4729, February 7, 1996), in issuing this rule, EPA has taken the necessary steps to eliminate drafting errors and ambiguity, minimize potential litigation, and provide a clear legal standard for affected conduct. EPA has complied with Executive Order 12630 (53 FR 8859, March 15, 1988) by examining the takings implications of the rule in accordance with the ''Attorney General's Supplemental Guidelines for the Evaluation of Risk and Avoidance of Unanticipated Takings'' issued under the executive order.

Today's final rule will have no effect upon minority and/or low-income populations. Therefore, today's rule is not subject to Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations.''

List of Subjects

40 CFR Part 148

Environmental Protection Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR Part 261

Environmental protection, Hazardous materials, Recycling, Waste treatment and disposal.

40 CFR Part 268

Environmental protection, Hazardous materials, Land disposal restrictions, Reporting and recordkeeping requirements, Treatment standards, Waste management.

Dated: May 30, 2000.

Timothy R. Fields, Jr.,

Assistant Administrator, Office of Solid Waste and Emergency Response.

For the reasons set forth in the preamble, title 40, chapter 1 of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Sec. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

2. Section 148.18 is amended by removing and reserving paragraph (h) and adding paragraph (f), to read as follows:

§ 148.18 Waste specific prohibitions-newly listed and identified wastes.

* * * * *

(f) On January 8, 1997, the wastes specified in 40 CFR 261.32 as EPA Hazardous waste number K088 is prohibited from underground injection.

* * * * *

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

3. The authority citation for part 261 continues to read as follows:

Authority: Sec. 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

4. In § 261.31(a), the table is amended by revising the entry for F037, to read as follows:

§ 261.31 Hazardous wastes from non-specific sources.

(a) * * *

Industry and EPA hazardous waste No.	Hazardous waste	Hazard code
*	* * * * * * *	
F037	Petroleum refinery primary oil/water/solids separation sludge—Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oil cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing. This listing does include residuals generated from processing or recycling oil-bearing hazardous secondary materials excluded under § 261.4(a)(12)(i), if those residuals are to be disposed of.	(T)
*	* * * * * * *	

* * * * *

PART 268—LAND DISPOSAL RESTRICTIONS

5. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Appendix VII to Part 268 [Amended]

6. In appendix VII to part 268 Table 1 is amended by removing the entry for U048.

[FR Doc. 00–14321 Filed 6–7–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[OPP–301004; FRL–6558–4]

RIN 2070–AB78

Imidacloprid; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes time-limited tolerances for the combined residues of imidacloprid and its metabolites containing the 6-chloropyridinyl moiety, all expressed as parent in or on stone fruit (Crop Group 12). This action is in response to EPA's granting of emergency exemptions under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of the pesticide on stone fruit. This regulation establishes maximum permissible levels for residues of imidacloprid on these food commodities. The tolerances will expire and are revoked on December 31, 2001.

DATES: This regulation is effective June 8, 2000. Objections and requests for hearings, identified by docket control number OPP–301004, must be received by EPA on or before August 7, 2000.

ADDRESSES: Written objections and hearing requests may be submitted by mail, in person, or by courier. Please follow the detailed instructions for each method as provided in Unit VII. of the ''SUPPLEMENTARY INFORMATION.'' To ensure proper receipt by EPA, your objections and hearing requests must identify docket control number OPP–301004 in the subject line on the first page of your response.

FOR FURTHER INFORMATION CONTACT: By mail: Andrew Ertman, Registration Division (7505C), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; telephone number: (703) 308–9367; e-mail address: ertman.andrew@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. Potentially affected categories and entities may include, but are not limited to:

Categories	NAICS codes	Examples of potentially affected entities
Industry	111 112 311 32532	Crop production Animal production Food manufacturing Pesticide manufacturing

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in the table could also be affected. The North American Industrial Classification System (NAICS) codes have been provided to assist you and others in determining whether or not this action might apply to certain entities. If you have questions regarding the applicability of this action to a particular entity, consult the person listed under ''FOR FURTHER INFORMATION CONTACT.''

B. How Can I Get Additional Information, Including Copies of This Document and Other Related Documents?

1. *Electronically*. You may obtain electronic copies of this document, and certain other related documents that might be available electronically, from the EPA Internet Home Page at http://www.epa.gov/. To access this document, on the Home Page select ''Laws and Regulations'' and then look up the entry for this document under the ''**Federal Register**—Environmental Documents.'' You can also go directly to the **Federal Register** listings at http://www.epa.gov/fedrgstr/.

2. *In person*. The Agency has established an official record for this action under docket control number OPP–301004. The official record consists of the documents specifically referenced in this action, and other information related to this action, including any information claimed as Confidential Business Information (CBI). This official record includes the documents that are physically located in the docket, as well as the documents that are referenced in those documents. The public version of the official record does not include any information claimed as CBI. The public version of the official record, which includes printed, paper versions of any electronic comments submitted during an

Federal Register

Wednesday,
November 8, 2000

Part III

Environmental Protection Agency

40 CFR Part 148, et al.

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Chlorinated Aliphatics Production Wastes; Land Disposal Restrictions for Newly Identified Wastes; CERCLA Hazardous Substance Designation and Reportable Quantities; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 148, 261, 268, 271, and 302

[SWH–FRL–6882–6]

RIN 2050–AD85

Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Chlorinated Aliphatics Production Wastes; Land Disposal Restrictions for Newly Identified Wastes; and CERCLA Hazardous Substance Designation and Reportable Quantities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is listing as hazardous two wastes generated by the chlorinated aliphatics industry. EPA is finalizing these regulations under the Resource Conservation and Recovery Act (RCRA), which directs EPA to determine whether certain wastes from the chlorinated aliphatics industry may present a substantial hazard to human health or the environment. The effect of listing these two wastes is to subject them to stringent management and treatment standards under RCRA and to subject them to emergency notification requirements for releases of hazardous substances to the environment. EPA is finalizing a contingent-management listing approach for one of these wastes. Under the contingent management listing determination, the waste will not be a listed hazardous waste, if it is sent to a specific type of management facility. EPA also is finalizing determinations not to list as hazardous four wastes generated by the chlorinated aliphatics industry.

EFFECTIVE DATE: This final rule is effective May 7, 2001.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The Docket Identification Number is F–2000–CALF–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. The index and some supporting materials are available electronically. See the beginning of the Supplementary Information section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For information on specific aspects of the rule, contact Ross Elliott of the Office of Solid Waste (5304W), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. [E-mail address and telephone number: elliott.ross@epamail.epa.gov, (703) 308–8748.]

SUPPLEMENTARY INFORMATION: Wherever ''we'' is used throughout this document, it refers to the Environmental Protection Agency (EPA).

The index and some supporting materials for this rulemaking are available on the Internet. Follow these instructions to access these documents.

WWW: http://www.epa.gov/epaoswer/hazwaste/id
FTP: ftp.epa/gov
Login: anonymous
Password: your Internet address
Files are located in /pub/gopher/OSWRCRA

EPA will keep the official record for this action in paper form. The official record is the paper record maintained at the address in **ADDRESSES** at the beginning of this document.

The contents of the preamble to this final rule are listed in the following outline:

I. Who Potentially Will Be Affected by Today's Final Rule?

Today's final rule could directly affect those who generate and handle the types of chlorinated aliphatic hydrocarbon production wastes that EPA is adding to the Agency's list of hazardous industrial wastes under RCRA. Although there are an estimated 39 chlorinated aliphatic hydrocarbon chemical manufacturing facilities in the United States as of 1999, the K174 and K175 listing final rule only applies to 18 of these facilities (17 for the K174 listing and one for the K175 listing), which manufacture two such chemicals; ethylene dichloride (EDC) and vinyl chloride monomer (VCM). Furthermore, because of the final rule's ''conditional listing'' approach, in comparison to current (baseline) waste management practices in this industry, EPA anticipates that three of the 18 chemical manufacturing facilities subject to the final rule as generators of K174 and K175 hazardous wastes, will incur costs to modify their current waste management practices, while the remaining 15 facilities will incur only minimal regulatory costs, primarily associated with documentation of current waste management practices. In addition, EPA anticipates that four industrial waste management facilities also will be affected by the final rule due to potential changes in the annual quantities of hazardous wastes handled and associated changes to business revenues that will be the result of modifications to current waste management practices to comply with the provisions of today's final rule.

In addition to waste generators targeted by the rule, because of RCRA's ''cradle-to-grave'' statutory design, EPA anticipates that four waste handlers (three for the K174 listing and one for the K175 listing) are likely to experience ''induced effects'' from this final rule. In addition, EPA's regional offices and states with RCRA-authorized programs potentially will incur some costs because they must administer new RCRA listings. Several additional stakeholders also will have to read the final rule.

As defined in the Economics Background Document prepared for today's final rule, ''targeted effects'' are the anticipated costs of the final rule incurred by the unique class of industrial facilities that generate the newly listed hazardous wastes K174 and K175. ''Induced effects'' are anticipated costs of direct, indirect or secondary impacts the final rule may have on entities linked economically to the targeted facilities such as offsite waste management facilities, and on entities which are likely affected by other generic provisions of the final rule, such as states with RCRA authorized programs which will implement and enforce the rule. ''Incidental effects'' are anticipated consequential impacts on other types of entities, such as on other chemical manufacturers (to read the rule), other Federal agencies (to read the rule), and other non-governmental organizations (such as industry trade associations to read and propagate the rule to its member companies).

EPA's estimate of expected regulatory costs for these 116 potentially affected entities, is described in EPA's ''Economics Background Document'(USEPA 2000a) [1] for this final rule, which is available for public review from the RCRA Docket. A summary of the potentially affected industry sectors (by respective SIC and NAICS codes) is displayed in the table below.

SUMMARY OF ENTITIES POTENTIALLY AFFECTED BY THE RCRA K174/K175 FINAL RULE

Item	Economic sector classification			Number entities potentially affected			
	SIC	NAICS	Description	Targeted	Induced	Incidental	Total
1	2869	32511	Industrial organic chemical manufacturers* (waste generators).	18	0	21	39
2	4953	562211	Hazardous waste treatment & disposal (waste handlers).	0	4	0	4
3	9511	92411	State government environmental departments (public administration).	0	49	0	49
4	9511 9611 9621	92411 92611 92612	Federal government offices (environmental, economic & transportation public administration).	0	11	1	12
5	8742	54161	Management consulting services (non-governmental organizations).	0	0	12	12
			Total	18	64	34	116

Explanatory Notes:
(a) *Parent company codes may differ from the codes associated with the facility units targeted by the rule.
(b) This list of sector classification codes for ''induced effect'' entities may not be exhaustive for at least two reasons:
- Non-hazardous and hazardous industrial waste collection transporters (SIC 4212, 4953, NAICS 562111, 562112) may be affected, depending upon whether waste collected from K174/K175 generators is transported by waste treatment/disposal facilities, or by separate, unaffiliated transporter companies.
- If waste remediation is required, such entities may be affected (SIC 4959, NAICS 56291).

[1] USEPA. 2000a. Economics Background Document, USEPA Final Rule Listing Industrial Wastewater Treatment Sludges Generated by Chlorinated Aliphatic Chemical Manufacturing Facilities, as RCRA Hazardous Wastecodes K174 & K175: Industry Profile and Estimation of Regulatory Costs. Office of Solid Waste. 31 July.

The list of potentially affected entities in the above table may not be exhaustive. Our aim is to provide a guide for readers regarding those entities that EPA is aware potentially could be affected by this action. However, this action may affect other entities not listed in the table. To determine whether your facility is regulated by this action, you should examine 40 CFR part 260 and 261 carefully in concert with the rules amending RCRA that are found at the end of this **Federal Register** notice. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding section entitled **FOR FURTHER INFORMATION CONTACT.**

II. What Is the Legal Authority and Background of Today's Final Rule?

A. What Are the Statutory Authorities for This Rule?

These regulations are being promulgated under the authority of sections 2002(a), 3001(b), 3001(e)(2) and 3007(a) of the Solid Waste Disposal Act, 42 U.S.C. 6912(a), 6921(b) and (e)(2), and 6927(a) as amended several times, most importantly by the Hazardous and Solid Waste Amendments of 1984 (HSWA). These statutes commonly are referred to as the Resource Conservation and Recovery Act (RCRA), and are codified at Volume 42 of the United States Code (U.S.C.), sections 6901 to 6992(k) (42 U.S.C. 6901–6992(k)).

Section 102(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9602(a) is the authority under which the CERCLA aspects of this rule are being promulgated.

B. Schedule Suit

In 1989, the Environmental Defense Fund (EDF) [2] sued the Environmental Protection Agency (EPA), in part for failing to meet the statutory deadlines of Section 3001(e)(2) of RCRA (EDF vs. Browner; Civ. No. 89–0598 D.D.C.). To resolve most of the issues in the case, EDF and EPA entered into a consent decree, which has been amended several times to revise dates. The consent decree sets out deadlines for promulgating certain RCRA rules and for completing certain studies and reports. The consent decree obliges EPA to propose a hazardous waste listing determination for wastewaters and wastewater treatment sludges generated from the production of specified chlorinated aliphatic chemicals. The wastewater and wastewater treatment sludges subject to the consent decree are those from the production of chlorinated aliphatics for which other process wastes already have been designated as hazardous waste F024 in 40 CFR 261.31. According to the consent decree, EPA was required to propose listing determinations by July 30, 1999 and promulgate final listing determinations on or before September 30, 2000. Today EPA is promulgating listing determinations for these wastes in accordance with the consent decree.

[2] Now known as Environmental Defense.

III. Summary of Today's Action

In today's notice, EPA is promulgating regulations that add two wastes generated by the chlorinated aliphatics industry to the list of hazardous wastes in 40 CFR 261.32. Below are the wastestreams EPA is listing as hazardous with their corresponding EPA Hazardous Waste Numbers.

K174 Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (EDC/VCM)

K175 Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process

EPA is listing these wastes as hazardous based on the criteria set out in 40 CFR 261.11(a)(3) for listing a waste as hazardous. EPA assessed and considered these criteria for each of six wastestreams generated by the chlorinated aliphatics industry through the use of risk assessments and risk modeling, as well as a consideration of other pertinent factors. Today's final listing determination follows the elements of the Agency's listing decision policy that was presented in the proposed listing determination for wastes generated by the dye and pigment industries published in the **Federal Register** on December 22, 1994 (see 59 FR at 66073). This policy uses a ''weight-of-evidence'' approach in which calculated risk information is a key factor considered in making a listing determination.

Upon the effective date of the hazardous waste listings promulgated today, wastes meeting the listing descriptions will become hazardous wastes and need to be managed in accordance with RCRA subtitle C requirements. Residuals from the treatment, storage, or disposal of the wastewater treatment sludges proposed to be listed as hazardous also will be classified as hazardous wastes pursuant to the ''derived-from'' rule (40 CFR 261.3(c)(2)(i)). Also, with certain limited exceptions, any mixture of a listed hazardous waste and a solid waste is itself a RCRA hazardous waste (40 CFR 261.3(a)(2)(iv), ''the mixture rule'').

In today's notice, the Agency is promulgating an alternative approach to listing wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (EDC/VCM), rather than listing this waste in accordance with the Agency's traditional listing approach. The Agency is promulgating a conditional listing approach because the Agency evaluated the ways in which the wastes are likely to be managed and determined that the waste may present significant risks to human health and the environment, although it concluded that a particular waste management practice is protective of human health and the environment. Under the conditional listing approach, EPA is listing the waste as hazardous only if the waste is managed in a way other than the manner in which the Agency has determined is protective of human health and the environment. In developing this conditional-listing approach, the Agency has determined that wastes that fall outside the scope of the listing description (e.g., are destined for the appropriate type of disposal) are non-hazardous when generated. However, if it turns out that the waste actually is not handled in accordance with the conditions of the listing at any point in its management, the generators or other handlers of the waste will be subject to enforcement actions. The conditional-listing approach being promulgated today for certain wastes generated from chlorinated aliphatics processes is further discussed in section VI.B. of today's rule.

Today's action also promulgates no list decisions for the following four wastes:

- Process wastewaters from the production of chlorinated aliphatics (other than wastewaters from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process),
- Process wastewaters from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process,
- Wastewater treatment sludges from the production of methyl chloride, and
- Wastewater treatment sludges from the production of allyl chloride.

EPA considers the listing criteria set out in 40 CFR 261.11, in light of information relevant to the criteria, in making listing determinations. The criteria provided in 40 CFR 261.11 include eleven factors for determining whether a waste is capable of posing a ''substantial present or potential hazard to human health and the environment.'' Nine of these factors, as described

generally below, are directly incorporated into EPA's completion of a risk assessment for the wastestreams of concern:

- Toxicity (§ 261.11(a)(3)(i)) is considered in developing the health benchmarks used in the risk assessment modeling.
- Constituent concentrations and waste quantities (§§ 261.11(a)(3)(ii) and 261.11(a)(3)(viii)) are used to define the initial conditions for the risk evaluation.
- Potential to migrate, persistence, degradation, and bioaccumulation of the hazardous constituents and any degradation products (§§ 261.11(a)(3)(iii), 261.11(a)(3)(iv), 261.11(a)(3)(v), and 261.11(a)(3)(vi)) are all considered in the design of the fate and transport models used to determine the concentrations of the contaminants to which individuals are exposed.

We consider two of the remaining factors, plausible mismanagement and other regulatory actions (§§ 261.11(a)(3)(vii) and 261.11(a)(3)(x)) in establishing the waste management scenario(s) modeled in the risk assessment.

EPA conducted analyses of the risks posed by wastewaters and wastewater treatment sludges from the production of chlorinated aliphatic chemicals to assist in the determination of whether the wastes meet the criteria for listing set forth in 40 CFR 261.11(a)(3). In the preamble to the proposed rule (64 FR 46476), we discussed the human health risk analyses and ecological risk screening analyses EPA conducted to support our proposed listing determinations for chlorinated aliphatics wastewaters, EDC/VCM wastewater treatment sludges, and methyl chloride wastewater treatment sludges. These analyses, as well as comments EPA received on the analyses, are further discussed in this notice in section VI below. We considered the results of the risk analyses, as well as comments received, and the results of analyses conducted in response to information provided by public commenters in finalizing our listing decisions for each wastestream. The risk analyses conducted in support of our proposed listing determination are presented in detail in the Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination and in the 1999 Addendum to Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination which are located in the docket for the proposed rule. Additional information and analyses conducted with regard to our original risk assessment in response to comments received on our proposed rule are included in the September 2000 Addendum to Risk Assessment Background Document for the Chlorinated Aliphatics Listing Determination. This document is located in the docket for today's final rule.

IV. What Proposed Listing Determinations Led to Today's Final Rule?

In the August 25, 1999 proposed rule (64 FR 46476), EPA proposed to list three wastes generated by the chlorinated aliphatics production industry as hazardous wastes under RCRA. The wastes the Agency proposed to list as hazardous included chlorinated aliphatics manufacturing process wastewaters, wastewater treatment sludges generated from the treatment of wastewaters from the production of ethylene dichloride and/or vinyl chloride monomer (EDC/VCM), and wastewater treatment sludges from the treatment of wastewaters from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process (VCM–A). EPA proposed a conditional listing approach for EDC/VCM wastewater treatment sludges, based upon available information regarding the management of these sludges and the results of the Agency's risk assessment.

In connection with the proposed listings, EPA proposed to amend Appendix VIII of 40 CFR Part 261 to add two constituents, octachlorodibenzo-p-dioxin (OCDD) and octachlorodibenzofuran (OCDF). These constituents are found in chlorinated aliphatic wastewaters and in EDC/VCM wastewater treatment sludges.

In the proposed rule, the Agency also proposed not to list as hazardous wastewater treatment sludges generated from the treatment of wastewaters from the production of methyl chloride and the production of allyl chloride. In addition, the Agency proposed not to list process wastewaters from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.

The Agency proposed to add to the list of CERCLA hazardous substances those wastes that were proposed to be listed as hazardous. EPA also proposed adjusted Reportable Quantities (RQs) for each waste.

A. What Was the Proposed Listing Determination for Chlorinated Aliphatic Wastewaters?

As explained in Section III.A.1. of the proposed rule (64 FR 46479), the Agency segregated wastewaters from the chlorinated aliphatics industry into two waste groupings. Based upon current waste management practices, we grouped all chlorinated aliphatic wastewaters, except for those wastewaters generated from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process, into a single waste category for the listing determination investigation. We decided to study these wastewaters collectively because most chlorinated aliphatic manufacturers commingle wastewaters generated by individual processes prior to treating the wastewaters in a common wastewater treatment system. In addition, many process wastewaters generated from the production of chlorinated aliphatic hydrocarbons contain similar constituents of concern.

EPA proposed to list as hazardous process wastewaters generated from the production of chlorinated aliphatic hydrocarbons (other than those wastewaters generated from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process). Results of the risk assessment conducted in support of the proposed rule, indicated that the wastewaters met the criteria set out at 40 CFR 261.11(a)(3) for listing a waste as hazardous. Risk assessment results identified risks of concern associated with air releases of dioxins from wastewater treatment systems using aerated biological treatment in open tanks.

EPA proposed not to list as hazardous process wastewaters generated from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process (VCM–A wastewaters). EPA proposed not to list this waste as hazardous due to the fact that the wastewater exhibits the toxicity characteristic for both mercury and vinyl chloride. Therefore, the wastewater already is defined as hazardous waste. In addition, any risks associated with the management and disposal not addressed by RCRA (*i.e.,* direct discharge) of the wastewaters are addressed by other environmental regulations. With respect to the discharge of this wastewater, the facility treats and discharges the wastewater in compliance with the conditions of a NPDES permit. Regarding any air emissions of vinyl chloride from these wastewaters, vinyl chloride is a hazardous air pollutant, therefore the facility is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements specific to vinyl chloride emissions (40 CFR 61.65), as well as the Hazardous

Organic NESHAP for the synthetic and organic chemical manufacturing industry sector (40 CFR Part 63, subpart G)(59 FR 19468, April 22, 1994). For these reasons, the Agency proposed not to list VCM–A wastewaters as hazardous waste.

B. What Were the Proposed Listing Determinations for Wastewater Treatment Sludges?

1. EDC/VCM Wastewater Treatment Sludges

EPA proposed to list as hazardous sludges generated from treating wastewaters from the production of ethylene dichloride (EDC) and/or vinyl chloride monomer (VCM). The Agency proposed to list this waste due to the fact that the Agency identified risks of concern associated with the management of this waste in a land treatment unit. Our risk assessment identified dioxin and arsenic as contaminants of concern, and found that high-end cancer risk to the farmer receptor from dioxin was 2E–04. The dioxin risks are associated with airborne releases and subsequent deposition and food chain contamination from dioxin. Surface erosion due to runoff also contributes to risk from dioxin. The risk assessment results for the land treatment unit scenario indicated a risk level above EPA's levels of concern for dioxin.

The risk assessment for EDC/VCM wastewater treatment sludges also included modeling a landfill management scenario. Our risk assessment showed no significant risk from dioxin, and only marginal risk from arsenic associated with the groundwater pathway. Based upon the Agency's findings that EDC/VCM wastewater treatment sludges pose significant risks when managed in land treatment units but do not pose significant risks when managed in landfills, the Agency proposed a ''contingent management listing'' for this waste. EPA proposed to list EDC/VCM wastewater treatment sludges as hazardous, unless the sludges are managed in landfills.

As explained in the proposal, the Agency believes that allowing the waste to continue to be managed under a low risk management scenario (*i.e.,* non-hazardous waste landfilling) outside of the subtitle C system achieves protection of human health and the environment, and that little additional benefit will be gained by requiring that all EDC/VCM wastewater treatment sludges be managed in accordance with RCRA subtitle C management standards. Given the Agency's finding that no significant risks are posed from managing EDC/VCM wastewater treatment sludges in a landfill, the Agency sees no reason to include sludges managed in this manner in the scope of the hazardous waste listing. Additionally (and after consideration of the predicted risk differential between land treatment and landfilling), because only one facility identified in the RCRA 3007 Survey employs land treatment for these wastes, this practice is somewhat anomalous compared with land disposal. The Agency proposed that it does not make sense to apply a traditional listing approach (*i.e.,* list all wastes regardless of management practice) based upon a practice occurring at one facility, especially if a more tailored listing can prevent this risk.

2. VCM–A Wastewater Treatment Sludges

EPA proposed to list as hazardous wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process (VCM–A). EPA proposed to list this waste as hazardous based upon the fact that it exhibited the toxicity characteristic for mercury when sampled by the Agency and based upon the Agency's assessment of potential risks from this waste, given its high mercury content and given the uncertainties associated with the disposal of untreated wastes of potential high toxicity in lined landfills.

3. Methyl Chloride Wastewater Treatment Sludges

EPA proposed not to list as hazardous sludges from the treatment of wastewaters generated from methyl chloride production processes. The results of our risk assessment indicated that this waste does not pose a substantial present or potential hazard to human health or the environment. As explained in the proposal, EPA identified only one facility that generates sludges from the treatment of wastewaters from the production of methyl chloride and does not currently manage the waste as hazardous. This facility generates less than 800 metric tons of this sludge each year and disposes of the sludge in an on-site landfill along with other wastes from the facility. The landfill is lined and has a leachate collection system. The Agency analyzed potential risks from methyl chloride wastewater treatment sludge by modeling non-groundwater pathways and conducting a screening analysis for groundwater pathway risk. The Agency concluded that no significant risks are posed by the management of methyl chloride sludges in an on-site landfill.

4. Allyl Chloride Wastewater Treatment Sludges

EPA proposed not to list as hazardous sludges generated from treating wastewaters associated with the manufacture of allyl chloride. The Agency identified no risks of concern associated with the current management of the waste.

Only one facility generates wastewater treatment sludge from the production of allyl chloride, and this facility does not currently manage the sludge as hazardous waste. The sludge is generated from the treatment of commingled wastewaters managed at the facility's centralized wastewater treatment system. This wastewater treatment system is a non-dedicated system in that wastewaters from the facility's multiple production processes are discharged to the single system for combined treatment. Wastewaters from the production of allyl chloride contribute less than two percent to the system's total sludge loading. The sludge generated from the facility's wastewater treatment system is incinerated on site in a non-hazardous waste incinerator.

TCLP analyses of the sludge conducted by EPA indicated the presence of no TCLP constituents above regulatory levels. As explained in the proposal, the Agency does not anticipate any significant risk from the incineration of allyl chloride wastewater treatment sludge in a non-hazardous waste incinerator, since both the total arsenic level and the dioxin level detected in the sludge are well within typical soil background levels for these constituents.

C. Which Constituents Did EPA Propose To Add to Appendix VIII of 40 CFR Part 261?

EPA proposed to add two constituents, octachlorodibenzo-p-dioxin (OCDD) and octachlorodibenzofuran (OCDF) to the list of hazardous constituents at 40 CFR part 261, Appendix VIII. These two constituents of concern are present in the EDC/VCM wastewater treatment sludges and the chlorinated aliphatic wastewaters that the Agency proposed to list as hazardous. OCDD and OCDF are members of the large family of polychlorinated dioxins and furans. The Agency proposed to add these two dioxin congeners to Appendix VIII of 40 CFR part 261 because they are constituents of concern in the wastes proposed to be listed as hazardous, studies showed that OCDD and OCDF

have toxic effects and are therefore hazardous, and EPA also noted that OCDD and OCDF are the only congeners that make up 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD or ''TCDD'') toxic equivalence (TEQ) that are not currently listed in Appendix VIII.

D. What Were the Proposed Treatment Standards Under RCRA's Land Disposal Restrictions Standards?

In the proposal, EPA proposed to apply existing universal treatment standards (UTS) to the regulated hazardous constituents of concern in the wastes that were proposed to be listed as K173 (chlorinated aliphatic wastewaters) and K174 (EDC/VCM wastewater treatment sludges). For K175 (VCM–A wastewater treatment sludges), EPA proposed a metals recovery requirement, roasting and retorting, as the treatment standard. Since treatment residuals would exist after mercury recovery, EPA proposed the residuals meet existing UTS prior to land disposal. Information available to the Agency at the time of the proposal indicated that each of the wastes proposed to be listed as hazardous, as well as the treatment residuals, could be managed in existing treatment and reclamation units that routinely manage similar or as-difficult-to-treat hazardous wastes that currently are prohibited from land disposal. The BDAT background document provided detailed information on EPA's rationale for proposing to apply UTS to the wastes and for proposing a treatment standard of metals recovery to K175.

In the case of hazardous debris contaminated with proposed K173, K174 and K175, EPA proposed that the provisions in 40 CFR 268.45 apply to the treatment and disposal of hazardous debris. Hazardous debris treated in accordance with the provisions of 40 CFR 268.45 may be allowed for land disposal in a hazardous waste disposal facility. As a result, debris contaminated with proposed K173, K174, and K175 would be required to be treated prior to land disposal, using specific debris treatment technologies such as extraction, destruction, or immobilization. Residuals generated from the treatment of contaminated debris would have to meet the applicable UTS limits proposed for K173, K174, and K175.

In the case of proposed K175, EPA proposed an alternative treatment standard. The alternative standard proposed was to subject K175 to a numerical concentration limit of 0.025 mg/L TCLP mercury. Under the alternative proposal, K175 could be land disposed if a standard of 0.025 mg/L TCLP mercury is achieved using any technology other than impermissible dilution.

In the proposal, the Agency explained that the solubility of the mercury in K175 (in the form of mercuric sulfide) varies as a function of pH. In fact, above pH 6.0 the presence of sulfide complexes results in significantly increased solubility. Therefore, controlled treatment and disposal pH conditions were proposed to avoid mobilization of the mercury in the waste. To insure operational stability of the treatment process and proper long-term disposal, EPA proposed two conditions as part of the LDR treatment standards. First, the waste would have to be treated to (or otherwise be generated to meet) a pH of 6.0 or below. Second, EPA proposed that if K175 were to be co-disposed in a landfill with other wastes, co-disposal would be restricted to wastes with similar pH (*i.e.,* pH not greater than 6.0). EPA proposed that disposal facilities be required to certify and maintain operating records demonstrating compliance with this disposal condition.

EPA also proposed to add the numerical standards derived for the 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-heptachlorodibenzofuran;, 1,2,3,4,7,8,9-heptachlorodibenzofuran; 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (OCDD); and 1,2,3,4,6,7,8,9-octachlorodibenzofuran (OCDF) to the Table of Universal Treatment Standards (UTS) at 40 CFR 268.48. As explained in the proposal, these constituents have been shown to have the potential to cause significant risks to human health or the environment and their presence in wastes should be mitigated to avoid such potential risks. EPA proposed that all characteristic wastes which have these constituents as underlying hazardous constituents above the UTS be required to be treated to UTS levels for those constituents before land disposal.

Furthermore, EPA proposed that the constituents 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-heptachlorodibenzofuran; 1,2,3,4,7,8,9-heptachlorodibenzofuran; OCDD; and OCDF be added to the list of regulated constituents in hazardous waste F039 multisource leachate. F039 applies to multiple listed hazardous waste landfill leachates in lieu of the original waste codes, and F039 wastes are subject to all numerical treatment standards applicable to all listed wastes. To maintain the regulatory implementation benefits of having one waste code for multisource leachate, the treatment standards for F039 must be updated to include the constituents of newly listed wastes.

E. What Risk Assessment Approach Was Used for the Proposed Rule?

EPA conducted human health risk analyses for chlorinated aliphatics wastewaters, EDC/VCM wastewater treatment sludges and methyl chloride wastewater treatment sludges that provided estimates of the incremental human health risks resulting from exposure to contaminants detected in these wastes. The incremental human health risks were expressed as estimates of excess lifetime cancer risk for carcinogenic (cancer-causing) contaminants and hazard quotients (HQs) for those contaminants that produce noncancer health effects.

EPA used two different methods of analysis to estimate risks. These methods are called ''deterministic risk analysis'' and ''probabilistic risk analysis.'' A deterministic risk analysis produces a point estimate of risk or hazard for each receptor based on using a single value for each parameter in the analysis. A probabilistic analysis calculates risk or hazard by allowing some of the parameters to have more than one value, consequently producing a distribution of risk or hazard for each receptor.

EPA conducted both ''central tendency'' and ''high end'' deterministic risk assessments to attempt to quantify the cancer risk or non-cancer hazard for the typical receptor in the population (the central tendency risk) and the risk or hazard for individuals in small, but definable ''high end'' segments of the population (the high end risk). In the case of the central tendency deterministic risk analyses, we set all parameters at their central tendency values. For the chlorinated aliphatics risk assessments, the central tendency values generally were either mean (average) or 50th percentile (median) values.

We used high end deterministic risk analysis to predict the risks and hazards for those individuals exposed at the upper range of the distribution of exposures. EPA's Guidance For Risk Characterization (EPA 1995) [3] advises that ''conceptually, high end exposure means exposure above about the 90th percentile of the population distribution, but not higher than the individual in the population who has the highest exposure,'' and recommends that ''* * * the assessor should approach estimating high end by

[3] EPA. 1995. Guidance for Risk Characterization. U.S. Environmental Protection Agency Science Policy Council. February.

identifying the most sensitive variables and using high end values for a subset of these variables, leaving others at their central values.'' For the chlorinated aliphatics high end deterministic risk analyses, EPA set two parameters at their high end values (generally 90th percentile values), and set all other parameters at their central tendency values. We used a ''sensitivity analysis'' to identify the two parameters that we set at high end.

EPA used probabilistic risk assessment to support the results of the deterministic risk analyses and to allow us to quantify individual risk at selected percentiles of the risk distribution (for example, 50th percentile, 90th percentile, 95th percentile). EPA conducted probabilistic risk analyses for those combinations of receptor, contaminant, and pathway for which risk or hazard estimated using a high end deterministic analysis exceeded the following criteria: a cancer risk of 1×10^{-6} or a hazard quotient of 1. The Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination describes the input parameters used in the probabilistic analysis. In the probabilistic analysis, risk was approximated through repetitive calculation of the fate and transport and exposure equations and models using input parameters randomly selected from the Probability Density Functions (PDFs). The result of the probabilistic analysis is a distribution of the risks or hazards for each of the receptors.

The human health risk assessments that EPA conducted to support the chlorinated aliphatics listing determination included five primary tasks: (1) Establishing that there are constituents in the wastes that are of concern to the Agency and that warrant analysis to determine their risk to human health; (2) establishing a scenario under which contaminants are released from a waste management unit and subsequently are transported in the environment to a human receptor; (3) estimating the concentrations of contaminants to which the receptor might be exposed; (4) quantifying the receptor's exposure to contaminants and the contaminants' toxicity to the receptor; and (5) describing the receptor's predicted risk. The preamble to proposed rule provided a detailed discussion of how EPA completed each of these tasks for the risk assessments conducted to support the chlorinated aliphatics listing determination (see 64 FR 46483).

V. What Changes Were Made to the Proposed Rule?

As a result of comments and additional information provided to the Agency in response to the proposed rule, we made certain modifications to the risk modeling assumptions used in the risk assessment for the proposed rule. Changes made to the risk analysis resulted in changes in our risk assessment results. These changes subsequently caused us to re-evaluate, and in some instances change, our proposed listing determinations. These changes and the consequent scope of today's final action are described below. Detailed reasoning behind these changes and a summary of each of our final listing determinations is provided in Section VI.

A. Listing Determination for Chlorinated Aliphatic Wastewaters

In response to comments and information provided by commenters in response to the proposed rule, the Agency examined the record and reconsidered the risk assessment and proposed listing determination for chlorinated aliphatic wastewaters. Commenters to the proposed rule provided detailed comments on the risk assessment approach used to evaluate the potential risks from the management of chlorinated aliphatic wastewaters in aerated biological treatment tanks. These comments generally fell into one of six topic areas: concern about the waste management scenarios EPA evaluated; concern about the exposure scenarios EPA evaluated; EPA's methods for calculating exposure point concentrations; the way that EPA estimated exposure; EPA's assessment of contaminant toxicity; and EPA's characterization of estimated risks. To fully respond to critical issues raised by commenters, EPA decided to make modifications to some modeling assumptions and data inputs used in the risk assessment for the proposed rule. Modifications were made to fully consider the potential impacts of those issues raised by commenters that the Agency found to have merit. In addition, we evaluated the merits of other suggestions provided by commenters, and found these to be of no importance to the listing determination, or we disagreed with the suggested changes. Specifically, we agreed with commenters who pointed out that the intake rates that we used to calculate exposure to beef should have accounted for the mass of beef that is lost during cooking and post-cooking activities (for example, dripping and volatile losses, bones, excess fat, scraps, and juices). We also adjusted our analysis to reflect the variability of dioxin concentrations in air over an area that would be more consistent with the area of a pasture where cattle graze. In addition we were convinced by commenters that our modeling assumptions should have accounted for the removal of wastewater solids prior to wastewaters entering aerated biological treatment tanks.

After we accounted for these modifications, our adjusted risk assessment results indicated that the management of chlorinated aliphatic wastewaters in aerated biological treatment tanks do not pose substantial risks to human health and the environment. The Agency has concluded that available information provides sufficient basis to determine that chlorinated aliphatic wastewaters should not be listed as hazardous waste. A more detailed discussion of the issues raised by public commenters and the modifications made to our risk assessment results to account for some of these issues is provided in Section VI below.

The final listing determination for chlorinated aliphatic wastewaters is based upon EPA's consideration and review of public comments submitted in response to the proposed listing determination, and other relevant information available to the Agency and in the rulemaking record. The final determination is based on the Agency's evaluation as to whether the waste meets the criteria in 40 CFR 261.11(a)(3) for listing wastes as hazardous. We have assessed and considered the factors contained in these criteria primarily by incorporating them as elements in the revised risk assessment, which is based on the methodology described in the preamble to the proposed rule and subsequent modifications described in this preamble and the support documents in the rulemaking record. EPA bases its final listing determinations on the entire rulemaking record, including applicable sections of the preamble to the proposed rule, analyses and background documents developed for the proposed rule, the Agency's responses to the comments on significant issues raised in the preamble to the proposal, and all other relevant information available to the Agency.

B. Modification of Wastewater Treatment Unit Exemption and Application of Subpart CC Requirements for Tanks Managing Chlorinated Aliphatic Wastewaters

Because we are not finalizing the listing for chlorinated aliphatic wastewaters as proposed, the proposed amendments to regulations for tanks

managing chlorinated aliphatic wastewaters are not necessary and are not being finalized in today's rule. This includes the proposed amendments to the wastewater treatment unit exemption in 40 CFR 264.1 and 265.1, as well as the proposed amendments to the 40 CFR parts 264 and 265 subpart CC requirements for implementing the tank cover requirements and the waste sampling and analysis requirements.

C. Landfill Leachate Derived From Previously Disposed VCM–A Wastewater Treatment Sludges

In the proposal, EPA proposed amending the existing exemption from the definition of hazardous waste (40 CFR 261.4(b)(15)) to include leachate derived from non-hazardous waste landfills that previously accepted newly-listed VCM–A wastewater treatment sludges (K175). The Agency would have temporarily deferred the application of the new waste code to such leachate to avoid disruption of ongoing leachate management activities during a time period in which the Agency would decide how to integrate RCRA and CWA regulations governing the management of landfill leachate.

The Agency proposed the deferral because information available to EPA at the time of the proposal indicated that VCM–A wastewater treatment sludges may have been managed previously in non-hazardous waste landfills. However, information provided by the one generator of this waste in response to the proposed rule, indicates that since 1985 these sludges have not been disposed in a non-hazardous waste landfill. The generator has assured EPA that the VCM–A sludges always have been disposed in subtitle C landfills. Based upon this information, the Agency sees no need to finalize the proposed deferral for landfill leachate at this time.

The Agency is not finalizing (but is deferring a final decision on) the proposed temporary deferral for applying the new K175 waste code to leachate from non-hazardous waste landfills that previously accepted waste that meets the K175 listing description. Should the Agency receive information at a later date indicating that one or more non-hazardous waste landfills did accept this waste prior to the effective date of today's rulemaking, we may re-consider our decision not to finalize the proposed deferral.

VI. What is the Rationale for Today's Final Rule, and What Are EPA's Responses to the Comments?

A. Chlorinated Aliphatic Wastewaters (Other Than Wastewaters From the Production of VCM–A Using Mercuric Chloride Catalyst in an Acetylene-Based Process)

The sections that follow provide a discussion of the comments received by the Agency in response to the EPA's proposal to list chlorinated aliphatic wastewaters as hazardous waste, the Agency's response to these comments, and the impact of the comments on the Agency's evaluation of risk and the final listing determination.

1. Summary of the Agency's Listing Decision for Chlorinated Aliphatic Wastewaters

EPA is issuing a final decision not to list wastewaters from chlorinated aliphatic production processes. The Agency has determined that these wastewaters do not pose substantial risks when managed in aerated biological treatment tanks.

The Agency proposed to list chlorinated aliphatic wastewaters based upon an estimated high-end deterministic risk from dioxin for an adult farmer of 2E–05. As explained in more detail below, as a result of our analysis of information provided by commenters, we determined that it was appropriate to adjust our risk assessment results to account for certain factors not addressed in the risk assessment for the proposed rule. These factors include accounting for cooking and post-cooking losses for beef, assuming a more realistic size of the pasture (or field) supporting cattle that are indirectly exposed to dioxin emissions, and accounting for the potential for solids removal prior to wastewater treatment in aerated biological treatment tanks. After calculating these adjustments to our proposed risk assessment results, EPA found that they would reduce our high end deterministic risk estimate for the adult farmer. Specifically, accounting for cooking and post-cooking losses for beef would modify the risk estimate by a factor of 0.78, and accounting for a more reasonable pasture size would modify the risk estimate by a factor of approximately 0.50, resulting in an overall risk estimate of 7E–06. Accounting for solids removal from the wastewater prior to biological treatment could modify the overall risk estimate by an additional factor of 0.67 to 0.94, that is, could result in a risk estimate as low as 4E–06.

Given the Agency's finding, we are not finalizing the proposed amendment to the existing wastewater treatment unit exemption (40 CFR 264.1(g)(6) and 265.1(c)(10)). In addition, the Agency is not finalizing the proposed requirement that wastewater treatment units used to treat chlorinated aliphatic wastewaters comply with specific RCRA air emissions standards.

Today's decision not to list chlorinated aliphatic wastewaters applies to all chlorinated aliphatic wastewaters, including wastewaters managed in underground injection control units. As explained further below, in the case of chlorinated aliphatic wastewaters managed in surface impoundments, although the wastewaters are not listed hazardous wastes, sludges derived from EDC/VCM process wastewaters and generated in impoundments will meet the scope of the hazardous waste listing for EDC/VCM wastewater treatment sludges after the effective date of today's rule.

2. Response to Major Comments Received on Proposed Rule for Chlorinated Aliphatic Wastewaters

EPA received comments on a number of issues concerning the data and analyses EPA used to arrive at our listing decision for chlorinated aliphatic wastewaters. The most significant comments that we received may be divided generally into six categories: (1) Comments on EPA's waste management assumptions; (2) comments on the exposure scenarios we evaluated in our risk assessment; (3) comments on how we calculated exposure point concentrations in the risk assessment; (4) comments on EPA's exposure assessment; (5) comments on EPA's toxicity assessment for dioxin and chloroform; and (6) comments on how we characterized risks associated with dioxin and chloroform. These comments, and the Agency's responses to these comments, are summarized below. We have developed responses to all of the public comments received in response to the proposed rule. The verbatim comments and our responses to all comments are provided in Response to Public Comments; Final Listing Determination for Chlorinated Aliphatics Industry Wastes in the docket for today's rule.

a. Waste Management Assumptions

The majority of chlorinated aliphatic wastewaters is managed in on-site, tank-based wastewater treatment systems prior to direct discharge of the wastewaters in accordance with facility-specific NPDES permits or discharge to an off-site POTW. As explained in the

preamble to the proposed rule, two chlorinated aliphatic production facilities manage their wastewaters in underground injection control (UIC) wells. In addition, commenters provided information indicating that one facility pipes its chlorinated aliphatic wastewaters off-site for treatment in a wastewater treatment system that includes biological treatment in surface impoundments.

i. Why Did EPA Only Evaluate Air Releases From Tanks?

One commenter asserted that EPA did not consider releases from tanks other than air emissions from treatment tanks managing chlorinated aliphatics wastewaters. As the commenter pointed out, EPA assumed that the wastewater treatment system tanks are of sufficient integrity to prevent releases and that the tanks are equipped with overflow and spill controls that will prevent non-air releases of wastewaters, even though (as the commenter also points out) no overflow and spill controls are required for nonhazardous storage waste tanks, including tanks that manage wastewaters subsequently discharged either to Publicly Owned Treatment Works (POTWs) or surface waters. The commenter states that EPA's failure to consider non-air releases from wastewater treatment system tanks, which in the commenter's opinion are plausible mismanagement scenarios, violates EPA's criteria for listing determinations, which requires an assessment of ''plausible types of improper management.''

When EPA set out to assess risks from managing wastewaters in tank-based systems, we chose to model only air emissions because we determined that this was the greatest potential pathway of exposure for constituents from the tank systems (therefore causing the greatest potential risk), particularly since we knew from the RCRA Section 3007 Survey responses that the industry uses aerated biological treatment tanks, many of which are uncovered, or open to the atmosphere. In addition, survey responses indicated that the tanks are positioned aboveground and a majority of them are equipped with secondary containment. Therefore, EPA determined that any leaks or catastrophic releases from such tanks would be detected relatively quickly and corrective measures likely would be implemented prior to a release of significant quantity. In addition, these types of releases, if they were to occur, are not predictable or routine but rather would be the result of inordinate events or accidents such as upset conditions or catastrophic failures, which the Agency presumes would not be routine, frequent or plausible (mis)management. In sum, we continue to believe that air emissions from aerated biological treatment tanks is the predominate exposure pathway and that risks resulting from this pathway are significantly greater than any risk that may periodically arise from spills or leaks.

ii. Why Did EPA Not Evaluate Storage of Wastewater?

One commenter stated that EPA did not consider other air emissions from the storage of chlorinated aliphatic wastewaters prior to placing these materials in tanks. The commenter said that such analysis is not needed if EPA finalizes a ''standard'' listing mechanism for K173, but that EPA must undertake such an analysis if a concentration-based listing is adopted. EPA assumes that the commenter is describing wastewaters managed in tanks between the point the wastewater is first generated until it reaches the headworks of the wastewater treatment facility. (This is because under the proposed listing options, wastewater would not be tested to determine whether it exceeds the 1 ng/L dioxin trigger until it enters the first tank in the wastewater treatment system.) Although EPA is not finalizing the proposed chlorinated aliphatic wastewater listing in today's rule, we note that the RCRA Section 3007 questionnaire results indicate that only a few facilities manage wastewaters in tanks that are not a part of the wastewater treatment train. In all cases where a facility indicated having wastewater storage tanks that are not part of the wastewater treatment system the facility indicated that the tanks are covered. The fact that such tanks are covered would limit the potential for air releases. In our risk assessment, we chose to analyze air emissions from wastewater treatment tanks because, based upon information provided to the Agency in facility responses to the RCRA Section 3007 questionnaire, such tanks may be used to manage relatively large quantities of chlorinated aliphatic wastewaters, and often are not covered and are aerated. In view of our revised risk estimate for potential releases from these tanks, any potential risks from the covered, upstream tanks would not be substantial.

b. Exposure Scenarios Evaluated in EPA's Risk Assessment

EPA received comments from a number of parties that challenged EPA's basic methodology for establishing the exposure scenarios evaluated in the chlorinated aliphatic wastewater risk analyses. The commenters believed that EPA should have used a site (or facility)-specific approach for conducting the risk assessments. The commenters raised general concerns regarding EPA's approach, and also challenged specific aspects of EPA's analysis. These two issues are discussed separately below.

i. Evaluating Site-Specific Exposure Scenarios—General Comments

Commenters on the proposed rule stated that EPA should have used a site-specific approach to assessing risks from management of chlorinated aliphatic wastewaters, and presented general arguments why EPA should adopt a site-specific approach. Specifically, the commenters believed that EPA should have conducted the chlorinated aliphatics risk assessments using an approach similar to that used in the final combustion Maximum Achievable Control Technology (MACT) rulemaking under the Clean Air Act. For that rulemaking, EPA used facility-specific data in determining risks (64 FR 52828, September 30, 1999). The commenters contended that as a result of the public and peer review comments received on the risk assessment in the proposed combustion MACT, EPA modified its risk analysis to focus on the entire population of persons that are exposed to facility emissions rather than persons living on a few individual farms and residences. Some commenters recommended that EPA adopt a regulatory approach allowing generators themselves to determine the site-specific risk (using site-specific distances to the nearest receptor, wastewater concentrations, etc.) and subsequently the regulatory status of the wastes addressed under EPA's proposed rule.

Similarly, some commenters expressed general concern over EPA's use of ''assumptions,'' rather than site-specific data, in the risk assessment. The commenters believe that if EPA were challenged with evaluating hundreds of scenarios across the entire nation, then the use of assumptions from statistical sampling of databases or best judgment could be better understood. However, with the limited number of facilities and waste management units involved in this proposed rule making (23), the commenters believe that EPA could have spent more time gathering real, site-specific data to reduce the uncertainty in risk modeling. The commenters pointed to the limited set of waste sample data, the lack of site-specific information regarding waste

management units for the chlorinated aliphatics industry, and the regional databases used to obtain the parameter values necessary to model containment fate and transport as data elements that should have been more site-specific.

EPA acknowledges that we did not conduct site-specific risk assessments to support the chlorinated aliphatics wastewater listing determination, but rather evaluated plausible exposure scenarios that are based on a combination of national data, regional data, and data collected from the facilities themselves. In some cases we believe that only one specific management practice is plausible, and existing locations for that practice are not likely to change. For example, certain economic or natural resource factors may restrict the nature of wastes in terms of their constituent concentrations, their quantities, or the ways in which the wastes are managed. This generally is not the case for the chlorinated aliphatic chemicals production industry. EPA described the continued and projected growth of the chlorinated aliphatic chemicals industry in the Economics Background Document for the proposed rule, and documented evidence of the industry's historically dynamic nature (USEPA, 1999b).[4] Nevertheless, there is considerable uncertainty in predicting a relationship between industry growth and waste generation and management. We cannot foresee the effects that potential (and possibly simultaneous) changes in technology, facility expansion practices (that is, increasing production capacity at existing facilities versus building new facilities), and waste minimization activities may have on waste generation and management. We also cannot predict whether there will be an increase in global marketshare of off-shore (non-U.S.) chlorinated aliphatic chemical production. Consequently, we based our evaluation on general information describing current chlorinated aliphatic waste management and exposure scenarios. This is not to say we based the modeling entirely on assumptions or hypothetical values. Rather, we used the combination of site-specific information, and other types of information that we thought would effectively capture what we expected would remain relatively consistent for one industry while accounting for likely future variability. For example, we surveyed the potentially affected facilities to identify existing waste management practices, and then assumed that those same management practices will continue to be used by the industry in the future. Additionally, we identified the location of chlorinated aliphatics facilities, and assumed that in the future, facilities might locate in the same general geographic regions (for example, regions with the same meteorological conditions), and in areas with the same general land use patterns (for example, agricultural areas). Similarly, we assumed that, although the exact numbers and locations of facilities may change, the quantities of the wastes, as well as the types and concentrations of contaminants in the wastes, will be generally the same over the near to long term. Again, the specific mix of site-specific and more general information will vary from one listing rule to another and potentially from one waste to another within a given rulemaking, depending on how dynamic EPA expects future waste management practices to be.

By evaluating the data using the probabilistic and two-high end deterministic approaches discussed in the preamble to the proposed rule (64 FR 46483), EPA endeavors to avoid regulating wastes based on exposure scenarios that are unrealistic (that is, based on too many protective [high end] assumptions). However, in the case of the chlorinated aliphatics industry, we did not feel our information justified an assumption that there would always exist exactly 23 chlorinated aliphatics facilities at 23 specific locations that continue to generate the same quantities of wastewaters, with the same types and concentrations of contaminants, that are managed in aerated biological wastewater treatment tanks under a static set of operating conditions. Historically, EPA's policy under the listing program has been to conduct national-scale evaluations that consider the general characteristics of the wastes under review, and allow facilities to petition the Agency to have their wastes ''delisted'' if they believe that the wastes do not meet the criteria for hazardous waste listing.

EPA also notes that, in view of the Congressional mandate to make final listing determinations on seventeen waste categories in fifteen months, Congress does not appear to have anticipated that each of these listings efforts would involve a detailed, facility-by-facility analysis (RCRA 3001(e)).

ii. Evaluating Site-Specific Exposure Scenarios—Specific Comments

Commenters on the proposed rule raised objections to three specific aspects of the exposure scenarios on which EPA's risk assessments for wastewaters are based. The following discussion describes those comments and EPA's response.

A number of commenters noted that EPA's high end human health risk analyses are based on dioxin exposures to farmers who live at the same location within 300 meters (0.18 miles) of a chlorinated aliphatics facility for 48.3 years or more, who raise fruits, exposed vegetables, root vegetables, beef cattle, and dairy cattle within this 0.18 mile range, and whose diet consists of approximately 42 percent home-grown exposed vegetables, 17 percent home-grown root vegetables, 33 percent home-grown fruits, 49 percent home-produced beef, and 25 percent home-produced dairy.[5] Some commenters questioned why their operations would be regulated under EPA's proposed rule, contending that it does not make sense to regulate a waste stream or to require controls and expenditures to protect a type of individual that will not be present. Many of the commenters claimed that they were not aware of any farmers living within 0.18 miles of a chlorinated aliphatics facility that met all these criteria, and found it difficult to believe that such a farmer would grow fruit trees and vegetables, and raise beef and dairy cattle, all on the same plot of land. Moreover, the commenters maintained that in the south Texas area where several EDC/VCM manufacturing facilities are located, dairy cattle production is non-existent due to the climate. One commenter that represents facilities in Louisiana stated that of the nine companies that they represent, only at two facilities is there farmland within 300 meters of the facility boundary (not 300 meters from the wastewater treatment tanks). The commenters stated that beef cattle are raised on one of the two farms, and that beef cattle and sugar cane are raised on the other farm.

[4] USEPA. 1999b. Economics Background Document, Proposal by the USEPA To List Wastewaters and Wastewater Sludges from Chlorinated Aliphatic Chemical Manufacturing Plants, as RCRA Hazardous Wastecodes K173, K174, K175: Industry Profile and Estimation of Industry Regulatory Compliance Costs. Office of Solid Waste. 30 July.

[5] The public comments suggest that the commenters believe that EPA assumed that the farmer consumes 42 percent of the exposed vegetables, 17 percent of the root vegetables, 33 percent of the fruits, 49 percent of the beef, and 25 percent of the dairy products that the farmer grows. EPA assumes that the commenters meant to take issue with the EPA's assumption that 42 percent of the exposed vegetables, 17 percent of the root vegetables, 33 percent of the fruits, 49 percent of the beef, and 25 percent of the dairy products that the farmer consumes are home-produced (i.e., the rest of the farmer's diet would be obtained from other sources, such as a grocery store).

In response, EPA notes that exposure duration was one of the two high end parameters in our proposed high end dioxin risk estimate for the farmer, and that the value of 48.3 years is the 90th percentile exposure duration for households in the ''farm'' housing category as presented in Table 15–164 of the Exposure Factors Handbook (USEPA, 1997 [6]). Moreover, the information provided in the public comments confirms that an exposure scenario in which a farmer raises beef cattle on a farm located within 300 meters of a chlorinated aliphatics facility (and presumably a wastewater treatment tank located near the facility boundary) is plausible. Although the commenters clearly disagree that a farmer also might produce fruits and vegetables on this farm, these concerns are unwarranted. Table 5–3 of the Risk Assessment Technical Background Document (USEPA, 1999a) [7] shows that for the adult farmer, 99.3 percent of the high end risk from chlorinated aliphatic wastewaters was due to ingestion of beef and dairy products and only 0.7 percent was due to ingestion of home grown fruits and vegetables. As a result, even though EPA believes it is plausible that a subsistence or hobby farmer would raise fruits and vegetables for home consumption, the validity of EPA's risk estimate depends almost entirely on the validity of our assumption that a farmer might consume both beef and dairy products from cattle raised on a farm located in the vicinity of a chlorinated aliphatics production facility. To evaluate the commenters' concerns regarding dairy cattle production in the vicinity of chlorinated aliphatics facilities, EPA referred to public data on agricultural production in the regions surrounding chlorinated aliphatics production facilities that are available from the Agricultural Census of the United States (see reference for *http://govinfo.library.orst.edu* that is included in the docket for the proposed rule). The census data demonstrate that, in fact, of the 23 chlorinated aliphatic facilities that manage wastewaters, 21 facilities, including all of the facilities in the south Texas area, are located in counties where dairy cattle were reported to have been raised in 1997 (all of the facilities are located in counties where beef cattle were reported to have been raised in 1997). EPA believes that an individual who raises cattle to support a subsistence lifestyle might reasonably consume both dairy and beef products from his/her cattle.

Some commenters also challenged EPA's assumptions regarding the percentages of beef and dairy products consumed by the farmer that are home produced (that is, assumed to be from a contaminated source). Specifically, EPA assumed that 25.4 percent of the dairy products a farmer consumes are home produced, and that 48.5 percent of the beef products a farmer consumes are home-produced. The commenters asserted that the percentages EPA used apply to a relatively small fraction of the surveyed population who farm, and as such are overly conservative by a factor of 21.2 for dairy,[8] and a factor of 12.7 for beef,[9] if applied to the general population (USEPA, 1997). The commenters held the opinion that the percentages used by EPA overstate the upper end homegrown beef and dairy consumption markedly. However, one of the same commenters acknowledged that the commenter was unable to confirm alternate values that EPA should have used for percentage of beef and dairy consumed by the farmer that is home grown. One peer reviewer asked where EPA obtained the values for the percentages of food eaten by the farmer (EPA provided the source of the values in the preamble to the proposed rule), but did not indicate whether he believed the percentages were right or wrong.

EPA's estimates of the portion (percentage or fraction) of a farmer's diet that is home-produced are presented in EPA's Exposure Factors Handbook (USEPA, 1997), and are based on the U.S. Department of Agriculture's 1987–1988 Nationwide Food Consumption Survey (NFCS).[10] We did not use the percentages that reflect the consumption of home-produced foods by the general population in our risk assessment, as suggested by the commenters, because EPA's objective was to evaluate risks to farmers, not members of the general population, who consume home-produced food items. As one would expect, the data in the Exposure Factors Handbook indicate that farm households consume more home-produced foods than do households in the general population. The percentages that correspond to the general population would be applied more appropriately to an evaluation of residential receptors.

One commenter claimed that in EPA's Combustion MACT rulemaking, EPA indicated that according to USDA information, only 40% of farmers who raise beef eat their own beef (64 FR 52998), and that the percentage of dairy farmers who consume home grown dairy products is only 40% in the Northeast, 20% in the Midwest, lower elsewhere in the country, and averages only 13% nationally (64 FR 52998). The commenter also noted that in the Combustion MACT rulemaking, EPA acknowledged that information on the number of farms that produce more than one food commodity (for example, beef and milk) is not available from the U.S. Census of Agriculture (64 FR 52828, see 53005–53006), and that in determining the risk to commercial farmers under the Combustion MACT rule, EPA stated: ''only the primary food commodity produced on the farm was assumed to be consumed by farm households (64 FR 52998).

It appears that the commenter somewhat misrepresented the data from the final MACT rule. Specifically, the **Federal Register** notice to which the commenter refers is very clear that while ''[o]nly the primary food commodity produced on the farm was assumed to be consumed by farm households,'' ''[a] wide variety of foods was assumed to be produced and consumed by households engaged in subsistence farming'' (64 FR 52999). In fact, under the subsistence farmer scenario evaluated for the MACT rulemaking, EPA assumed that 100 percent of the food that the farmer consumes is home-produced. This assumption clearly results in greater exposure than the assumptions used in EPA's analysis of the farmer scenario in the chlorinated aliphatics analysis. Moreover, the commenter misinterpreted data presented in the MACT rulemaking that describe the percentages of households that consume beef and dairy products in various parts of the country. The **Federal Register** notice to which the commenters refers states:

In particular, we re-analyzed data collected by USDA to estimate consumption of home-produced foods, such as meat, milk, poultry, fish, and eggs. Over half of farm households report consuming home-produced meats, including nearly 40 percent that report

[6] U.S. EPA. 1997. Exposure Factors Handbook, Volumes I, II, and III. EPA/600/P–95/002Fa, b, c. Office of Research and Development, Washington, D.C., August.

[7] U.S. EPA. 1999a. Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination. Office of Solid Waste. July.

[8] The proportion of home-produced dairy consumed by ''households who farm'' (0.254) divided by the proportion of home-produced dairy consumed by persons in the general population (0.012).

[9] The proportion of home-produced beef consumed by ''households who farm'' (0.485) divided by the proportion of home-produced beef consumed by persons in the general population (0.038).

[10] The 1987–1988 NFCS data on intake of home-produced foods are included for use in the recent (1997) Exposure Factors Handbook (U.S.EPA, 1997), which has been reviewed by EPA's Science Advisory Board (SAB) as well as numerous other external reviewers.

consumption of home-produced beef. In the Northeast, nearly 40 percent of farm households report consuming home-produced dairy products, and in the Midwest, nearly 20 percent do. The percentage is lower elsewhere, averaging about 13 percent nationally.

The data cited by EPA pertains to the number of all farm households that consume home-produced beef and dairy products. The commenters incorrectly assumed that the data applied specifically to households engaged in raising beef cattle and households engaged in raising dairy cows, respectively. EPA expects that the consumption of home-produced beef and dairy products would be much greater for households engaged in production of these commodities compared to the consumption for all farm households.

c. Calculation of Contaminant Concentrations at the Point of Human Exposure (Contaminant Fate and Transport Modeling)

EPA received comments questioning the way that we estimated emissions from aerated biological wastewater treatment tanks, and the way that we estimated the concentrations of dioxins in beef and dairy products. These comments included concerns about how CHEMDAT8 evaluates dioxins that are sorbed onto solids in wastewaters, and about how EPA estimated the amount of solids influent to aerated biological wastewater treatment tanks. Commenters also took issue with the Agency's assumptions about the diet of dairy and beef cattle and the productivity of the modeled farm. Each of these assumptions significantly affects our calculation of contaminant concentrations to which human receptors are exposed.

i. EPA Did Not Correctly Consider Sorption of Dioxin Onto Solids and Solids Removal From Wastewater

To evaluate the human health risks posed by dioxins in chlorinated aliphatic wastewaters, EPA modeled air emissions from aerated biological wastewater treatment tanks. We conducted the emissions modeling assuming that the concentrations of dioxins in wastewaters flowing to aerated biological treatment tanks were equivalent to the concentrations of dioxins in certain wastewater samples we collected. For the proposal, we constrained (''capped'') the influent concentrations of four congeners in the wastewaters at their aqueous solubility concentrations to account for the fact that dioxins are strongly hydrophobic and are expected to be sorbed to solids preferentially in the wastewater influent, thus are unlikely to exist in the dissolved phase in excess of their solubility limits.

Commenters on the proposed rule expressed a number of concerns regarding the way that EPA evaluated the solids fraction of chlorinated aliphatics wastewaters. The commenters' primary concern was that EPA did not appropriately consider that most dioxins in chlorinated aliphatics facility wastewaters will be sorbed onto solids in the wastewaters even when the dioxin congener concentrations in wastewaters are less than their solubility limits. Certain commenters contended that in EDC/VCM production facilities that use fluidized bed oxychlorination processes, attrited catalyst fines (small particles that are 1 to 20 micrometers in size) that exit the facility process via the wastewater treatment system have very high surface area (approximately > 50 m2/g) and thus strongly sorb dioxins that are present in the wastewaters. The commenters asserted that EPA failed to account for the fact that almost all of the dioxins in wastewaters are sorbed to solids and are removed in primary clarifiers prior to aeration. Moreover, the commenters believed that EPA's model for estimating emissions from wastewater treatment tanks (CHEMDAT8) does not correctly model sorption. One commenter stated that CHEMDAT8 takes into account adsorption onto biomass solids, but claimed that CHEMDAT8 does not adequately address the fact that most dioxin is already sorbed onto solids (and not available for volatilization) when it enters an aerated tank. Commenters submitted various analyses and data to substantiate their claims, and contended that EPA had overestimated the concentration of dioxins available for volatilization by at least an order of magnitude.

Although EPA agrees that the primary removal mechanism of dioxins in wastewater treatment tanks will be through the sorption of dioxins onto solids (see p. 3–2 of EPA's 1999 Risk Assessment Technical Background Document, USEPA 1999a), EPA does not agree with the commenters' concerns that CHEMDAT8 fails to correctly account for sorption. CHEMDAT8 does in fact model sorption as a reversible, linear, equilibrium partitioning process, the same process that the commenters believed should be considered to account for the sorption of dioxins onto solids in wastewater. CHEMDAT8 is designed to evaluate the contaminant loss rates for the competing removal mechanisms of volatilization, biodegradation, sorption and hydrolysis based on the total contaminant load influent to the system (whether associated with the dissolved or solid phase). The contaminant loss rate due to sorption is based on the equilibrium solids partitioning coefficient and the rate at which solids enter or are generated within the system. Thus, in estimating the amount of solids available to sorb dioxins, CHEMDAT8 considers total suspended solids (TSS) in the influent stream as well as new biomass growth. It does not matter how dioxin is partitioned onto solids when the wastewater enters the tank, because the model repartitions the dioxins inside the tank according to the model's equilibrium partitioning relationship and the relative rates of the competing removal mechanisms. Consequently, in our analyses we evaluated the total contaminant load in the tank influent, regardless of whether the contaminants were associated with the dissolved or solid phase. In cases where solids are present in the influent, limiting a CHEMDAT8 analysis to dissolved phase wastewater influent concentrations might seriously under-represent the total contaminant load to the tank and result in greatly underestimating emissions, especially for sorptive chemicals like dioxins. Because CHEMDAT8 considers partitioning and removal by sorption within the tank, limiting the mass of dioxin influent to the system (by limiting the influent concentration to the dissolved phase concentration) may result in greatly underestimating emissions because only the contaminant mass in the dissolved phase would be partitioned in the tank, rather than the total contaminant mass associated with the influent's dissolved plus solid wastewater phases.

In contrast, EPA agrees with the commenters concerns that we failed to accurately account for the fact that in aerated biological wastewater treatment systems, at least some solids removal generally will occur between the headworks of the wastewater treatment system and the influent to an aerated biological treatment tank (we addressed risks from the management of solids separately in this listing determination). In the preamble to the proposed rule, EPA specifically stated that we selected wastewater data for evaluation that we believed represented the concentrations of contaminants in wastewaters at the influent (headworks) of treatment systems that are used to manage only wastewaters from the production of chlorinated aliphatic chemicals (''dedicated'' chlorinated aliphatics wastewater samples; 64 FR 46483). In

retrospect, our assumption that the same data that represent contaminant concentrations at the headworks of wastewater treatment systems could represent contaminant concentrations at the influent to aerated biological wastewater treatment tanks was somewhat flawed. The Agency reviewed information previously provided to us in industry survey responses and determined that of the eleven facilities that employ aerated biological processes to treat their wastewaters, nine employ primary clarification or other processes that have the effect of removing solids from wastewaters prior to their discharge to aerated biological treatment tanks. (One of these nine facilities is the facility from which we collected the ''high end'' wastewater sample used in the risk analysis that served as the basis for our proposed listing decision.) The remaining two facilities perform wastewater equalization in tanks prior to aerated biological treatment. One of these two facilities also employs wastewater pH adjustment with resultant precipitation of metal hydroxides prior to aerated biological treatment. Both of these processes are expected to result in at least some solids removal from the wastestream. Moreover, EPA does not anticipate that treatment of the wastewaters in units such as primary clarifiers and equalization basins would result in dioxin air emissions greater than those that we originally predicted from aerated biological treatment tanks, because primary clarifiers are, by design, quiescent units (Metcalf and Eddy, 1991,[11] p. 472), and we have no information that leads us to believe that the equalization tanks in use by the facilities are agitated.

To model the aerated biological treatment tanks correctly, that is, to determine what the appropriate influent concentration to the biological treatment tank should be, would have required that EPA model the wastewater treatment train from the point where wastewater enters the headworks of the treatment system to the point where the wastewater enters the aerated biological tank. Metcalf and Eddy (1991, p. 473) state that ''efficiently designed and operated primary sedimentation tanks should remove from 50 to 70 percent of the suspended solids * * * '' from wastewater. Assuming this level of solids removal from chlorinated aliphatics wastewaters prior to biological treatment we estimate that the high end deterministic risk estimate for the adult farmer reported in the proposal would be reduced by a factor ranging from approximately 0.67 (70 percent removal of solids) to 0.94 (50 percent removal of solids) (USEPA, 2000b).[12] A complete description of our analysis is provided in the Addendum to the 1999 Risk Assessment Technical Background Document (USEPA, 2000).

ii. EPA Incorrectly Evaluated the Contribution of Feed to Dioxin Levels in Dairy and Beef

To support the chlorinated aliphatics wastewater listing determination we estimated risks to a farmer who ingests beef and dairy products derived from cattle raised on a farmer's pastureland. EPA assumed that the beef and dairy cattle consume home-grown forage, grain, and silage, and incidentally ingest pasture soil. We assumed that beef cattle consume different quantities of the various food items (and pasture soil) than do dairy cattle. We also assumed that 100% of the cattle's feed is contaminated by releases from the wastes we evaluated, that is, that cattle are not provided feed from other (uncontaminated) sources.

The commenters believed that EPA should have considered that a cow's consumption of various food sources varies according to the animal's life stage and intended use. The commenters contended that these considerations influence both a cow's exposure and the potential translocation of dioxin to meat or milk. As an example, the commenters pointed out that beef cattle may be raised for part of their lives on pasture, but typically are raised on grain prior to slaughter. The commenters noted that, for instance, the beef cow nurses and pastures for approximately 180 days, pastures exclusively for 55 days, and subsists on a grain only diet for the final 130 days of its life (Stevens and Gerbec, 1988). The commenters asserted that EPA's risk assessment should have considered contaminant losses from a beef cow's tissue in the time period between the cow's consumption of contaminated feed and the cow's slaughter. The commenters also presented alternate information that they said could be considered in EPA's evaluation of risk. First, EPA assumed that dairy cattle consume 13.2 kg/day of forage, 4.1 kg/day of silage, 3 kg/day of grain, and 0.4 kg/day of soil, based on data cited by Rice (1994)[13]. In contrast, the commenters presented data from Stevens and Gerbec (1988) [14] who reported dairy cattle consumption rates of 6.8 kg/day of forage, 16.3 kg/day of silage, 4.5 kg/day of grain, and 0.14 kg/day of soil. Second, EPA assumed that beef cattle consume 8.8 kg/day of forage, 2.5 kg/day of silage, 0.47 kg/day of grain, and 0.5 kg/day of soil (Rice, 1994). The commenters contended that during the nursing phase the beef cow receives practically all of its daily dioxin dose through the mother's milk and this dose has been (and could be) calculated for nursing cattle (Stevens and Gerbec, 1988). The commenters continued that EPA should assume that during the pasture phase of its life the beef cow consumes 13.6 kg/day of feed: 10.2 kg/day of forage, 3.4 kg of silage, and 0.05 kg/day of soil. The commenters argued that during the cow's fattening stage of growth prior to its slaughter, during which the beef cow gains as much as 60 to 70% of its body weight, the cow's diet consists entirely of grain. The commenters suggested that EPA needs to take into account the impact of this body weight gain and consider how dioxin half-life influences the concentration of dioxin residuals in the meat.

The commenters also asserted that EPA's assumption that all of a cow's feed is contaminated seemed unrealistic. The commenters believed that such an assumption implies that a farm not only has both a dairy and beef cattle operation, but raises grain and silage (in addition to crops for human consumption) while still maintaining enough pasture to graze the animals. They noted that the same issue was raised by the peer reviewers who found some of the assumptions on productivity of the theoretical farmer unrealistically high and suggested that productivity necessary to maintain such a farm be researched and used to adjust EPA's assumptions accordingly. The commenters reasoned that since grain and silage often are purchased elsewhere, it would be more appropriate to assume that less than 100% of the cattle's feed is contaminated. They believed that fixing the percentage of contaminated feed consumed by the cattle at 100% is not a central tendency assumption, and fails to reflect the lack of certainty in this parameter. Therefore, they recommended that EPA assume

[11] Metcalf & Eddy, Inc. 1991. Wastewater Engineering: Treatment, Disposal, and Reuse. Revised by G. Tchobanoglous and F. Burton. Irwin McGraw-Hill, Boston. 1334 pp.

[12] 12 U.S. EPA. 2000b. Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination, Addendum. Office of Solid Waste. September.

[13] Rice, G. 1994. Quantity of Plants and Soil Consumed by Animal. Draft Working Papers. Office of Research and Development. U.S. Environmental Protection Agency, Washington D.C.

[14] Stevens, J.B. and Gerbec, E.N. 1988. Dioxin in the agricultural food chain. Risk Analysis. 8(3):329–335.

that only 50% of the feed is contaminated in the deterministic assessment, and that a uniform distribution of values be adopted for the Monte Carlo assessment, with percentages ranging from 0 to 100 percent.

To understand EPA's response to these comments, it is important to recall two pieces of information presented in EPA's Risk Assessment Technical Background Document for the proposed rule. First, as discussed previously in Section VI.A.2.b.ii, the risks that EPA estimated for the farmer are due almost exclusively to the farmer's ingestion of beef and dairy products (Table 5–3; USEPA, 1999a). Second, the dioxins in the beef and dairy products result almost entirely from the cattle's consumption of forage that is contaminated by air emissions from the modeled wastewater treatment tank—negligible levels of dioxins are contributed to cattle as a result of the cattle's ingestion of grain, silage, or soil (Appendix H.1, Table H.1–1a; USEPA, 1999a). Consequently, all that is required for the adult farmer to realize the risk that EPA presented in the proposed rule is that the farmer consume beef and dairy products derived from cattle that consume forage from the farmer's pastureland/field. That is, it is not necessary that the farmer consume home-grown fruits and vegetables, or that the farmer produce grain or silage for use as cattle feed. Therefore, in responding to the concerns of the commenters, EPA focused primarily on the technical validity and plausibility of our assumptions regarding the (1) consumption rates of forage by beef and dairy cattle and (2) the percentage of the forage that cattle consume that is contaminated.

EPA disagrees with the commenters' alternate recommendations regarding animal feeding practices. Although the feeding practices that the commenters describe, particularly those for beef cattle, may be applicable to commercial farming operations, EPA does not believe that such practices apply to hobby or subsistence farming. As noted by Rice (1994), a subsistence farmer will tend to feed his/her cattle an ''unsupplemented'' diet, meaning that the cattle will primarily feed on forage (because the cattle are permitted to graze more in the pasture), and will not be fattened at a feedlot prior to slaughter. Rice (1994) explains that in the southern part of the country (where most of the chlorinated aliphatics facilities are located), cattle will consume pasture as their major source of roughage the entire year (except in drought). Consequently, we believe that our assumptions regarding cattle ingestion of forage under a subsistence/hobby farming scenario are reasonable. We used the assumptions presented by Rice (1994) in other rulemakings [15] and have recommended that these assumptions be used in estimating risks under other hazardous waste programs (USEPA, 1998 [16]). Furthermore, the feed ingestion rate for dairy cows presented by the commenters is an average ingestion rate for a dairy cow in Minnesota (Stevens and Gerbec, 1988). In contrast, EPA's data for the intake rates of forage, grain, and silage for dairy cows are based either on data from the South Carolina-Georgia region (see Boone et al., 1981 [17]) or on more general data (Shor and Fields, 1980; [18] NAS, 1987; [19] and Boone et al., 1981). Chlorinated aliphatics facilities are located primarily in Texas and Louisiana, which we believe are probably more similar to South Carolina-Georgia than Minnesota in terms of cattle feeding practices.

With regard to EPA's assumptions for the percent of the cattle's feed derived from a contaminated source, EPA believes that it is appropriate to assume that a hobby or subsistence farmer is not supplying forage to his/her cattle from an outside source, such that 100 percent of the forage that the cattle consumes will be from the farmer's pasture or field (in our risk assessment, a contaminated source). This assumption is consistent with the assumptions made for both the subsistence and commercial farmers in the combustion MACT final rulemaking, as well as other EPA rulemakings and guidance.[20] However, in response to the commenters' concerns, we reviewed our methodology for estimating the concentrations of dioxins in forage to ensure that we were adequately considering the size of the contaminated source versus its expected productivity. In the proposed rule we explained that in evaluating the air pathway we always assume that the cattle are located along the centerline of the area most greatly impacted by air releases from the waste management units (64 FR 46486). We said that the air concentrations within about a 100-meter lateral distance from this point do not vary appreciably, and stated specifically in our Risk Assessment Technical Background Document (Addendum; USEPA, 1999a) that the concentrations vary about 20% within 200 meters of the point of maximum concentration. In the course of our reevaluation of these data in response to public comments, we concluded that we should have considered how the concentrations of dioxins in air, therefore in forage, vary over a wider aerial extent that would be more consistent with the area of a pasture. We concluded that a more reasonable approach would be to consider that the size of the pasture that is used to support the cattle is approximately 275 meters by 275 meters (75,625 m^2, approximately 19 acres). We believe a field of this size would be large enough to support sufficient cattle to sustain the family of a subsistence farmer (USEPA, 2000b). We used the results of the air modeling we conducted for the proposed rulemaking to determine the approximate difference between the air concentration that we used to calculate the proposed risk estimate (the air concentration corresponding to a point located 300m from the modeled wastewater treatment tank) and the average air concentration at a 75,625 m^2 field located 300m from the modeled wastewater treatment tank. In fact, EPA determined that more reasonably considering the area that is affected by the emissions from the modeled wastewater treatment tank would reduce the risk estimate on which our proposed rule was based, modifying the risk estimate (2×10^{-5}) by a factor of 0.50 (USEPA, 2000b).

[15] We used the assumptions of Rice (1994) in the risk assessment to support the final combustion MACT Rulemaking (64 FR 52828, September 30, 1999). In addition, we used some of the same assumptions in the Proposed HWIR Rule (November 19, 1999 **Federal Register**; 64 FR 63382) and the Petroleum Refining Residuals Final Listing (August 6, 1998 **Federal Register**; 63 FR 42210).

[16] USEPA. 1998. Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. Peer Review Draft. Office of Solid Waste and Emergency Response. EPA530–D–98–001A. July.

[17] Boone, F.W., Y.C. Ng, and J.M. Palms. 1981. Terrestrial Pathways of Radionuclide Particulates. Health Physics, vol 41, no. 5, pp. 735–747. November.

[18] Shor, R.W. and D.E. Fields. 1980. ''Agricultural Factors Affecting the Radionuclide Foodchain Pathway: Green Forage Consumption of Dairy Cows.'' Health Physics. vol. 39, pp. 325–332.

[19] NAS. 1987. Predicting Feed Intake of Food-Producing Animals. National Research Council, Committee on Animal Nutrition. National Academy Press, Washington, D.C.

[20] For example:

USEPA. 1998. Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities. Peer Review Draft. Office of Solid Waste and Emergency Response. EPA530–D–98–001A. July.

USEPA. 1998. Methodology for Assessing Health Risks Associated with Multiple Pathways of Exposure to Combustor Emissions. National Center for Environmental Assessment. EPA600/R–98/137.

Proposed HWIR Rule (November 19, 1999 **Federal Register**; 64 FR 63382)

Final Petroleum Listing Rule (August 6, 1998 **Federal Register**; 63 FR 42210)

d. Exposure Assessment—Cooking and Post-cooking Food Losses

Commenters contended that the equations in the risk assessment used to characterize exposure to chemicals from the consumption of beef do not appear to account for loss of chemicals due to food preparation, cooking, and consumption practices. The commenters pointed out that The Exposure Factors Handbook (''the Handbook;'' USEPA, 1997; referenced in the preamble to the proposed rule) recommends that these losses be considered, and provides estimates for percent weight losses from preparation of various meats from cooking and post cooking actions. Beef-specific loss estimates range from 11%–42% (mean = 27%) due to cooking and 10%–46% (mean = 24%) due to post cooking actions. Therefore, the cancer risk estimates associated with the beef ingestion pathway should be adjusted by a factor of 0.55 (0.73×0.76).[21]

EPA agrees that the intake rates that we used for the adult farmer (and certain child of farmer age cohorts) should have incorporated loss of beef due to cooking and post-cooking activities. The Handbook explains that the intake rates it provides for home-produced food items do not reflect actual food consumption (intake), but instead were derived from the amount of household food consumption in an economic sense, that is, they are the measure of the weight of food brought into the household that has been consumed (used up) in some manner. The Handbook explains that in addition to food being consumed by individuals, food may be used up by spoiling, by being discarded (for example, inedible parts), through cooking processes, etc. The Handbook provides estimated preparation losses for beef that include cooking losses (which include dripping and volatile losses) and post-cooking losses (which include cutting, bones, excess fat, scraps, and juices.) The authors of the Handbook averaged these losses across all cuts and cooking methods to obtain a mean net cooking loss and a mean net post-cooking loss for beef. The Handbook explains that the preparation loss factors presented ''are intended to convert intake rates based on 'household consumption' to rates reflective of what individuals actually consume. However, these factors do not include losses to spoilage, feeding to pets, food thrown away, etc.'' EPA acknowledges that considering the mean cooking and post-cooking losses for beef (45%) as presented by the commenters would result in reducing the risk estimate, modifying the total (beef plus dairy, see section VI.A.3) high end deterministic dioxin risk estimate for the adult farmer (2E–05) by a factor of 0.78.

e. Toxicity Assessment

The proposed rule presented an assessment of the toxicity of dioxins and chloroform, the constituents of concern in chlorinated aliphatics wastewaters. Commenters on the proposed rule challenged data and analyses EPA relied upon to characterize the toxicity of the dioxins and chloroform. First, the commenters believed that EPA's use of draft documents under review was inappropriate for obtaining toxicity information for dioxins. Second, the commenters contended that EPA should have used a different cancer slope factor to calculate risks for two of the hexachlorodibenzo-p-dioxin (H_XCDD) congeners. Third, the commenters believed that EPA overestimated certain toxicity equivalency factors (TEFs, described below) that we used in our risk analysis. Lastly, commenters on the proposed rule challenged two of the assumptions inherent in the development of the toxicity benchmarks that we used to evaluate dioxins and chloroform. These two assumptions are as follows:

- To develop cancer benchmarks using animal studies, scientists often extrapolate dose-response data derived from the animal studies to lower levels that are within the range of human exposure. EPA historically has extrapolated response data in the low-dose range using a linear approach called the linearized multistage (LMS) model. However, in 1996, EPA published the Proposed Guidelines for Carcinogen Risk Assessment (hereafter referred to as the ''1996 Guidelines;'' USEPA, 1996 [22]) that provided new recommendations for evaluating responses in the low-dose range when biologically-based or case-specific models are not available. While still recommending a linear extrapolation (a straight line extrapolation) as a default procedure for evaluating low-dose response, the 1996 Guidelines also suggest that extrapolation in the low-dose range can be performed using a nonlinear approach, when the data on the mode of action for the contaminant are sufficient to support such an approach. Commenters on the proposed rule contended that, for 2,3,7,8-TCDD (''TCDD'') and chloroform, a nonlinear approach is more appropriate for extrapolating response data in the low-dose range than the LMS approach used by EPA.
- To calculate human equivalent doses from animal doses used in toxicity studies, scientists typically scale animal doses based on the ratio of animal and human body weights. The 1996 Guidelines recommend that the default approach is to scale daily applied doses experienced for a lifetime in proportion to body weight raised to the ¾ power. This recommendation is a change from EPA's previous recommendation to scale doses in proportion to body weight raised to the ⅔ power.

Commenters on the proposed rule believed that EPA should account for this revised guidance in our risk assessments for dioxin and chloroform.

i. Assessment of the Toxicity of Dioxins and Furans

EPA used a cancer slope factor of 156,000 $(mg/kg\text{-}day)^{-1}$ for TCDD to calculate cancer risk from exposure to dioxins and furans in chlorinated aliphatics wastes. The cancer slope factor is a measure of the relative potency of carcinogens. That is, the higher the cancer slope factor, the more potent the carcinogen. The toxicity of each of the 17 dioxin and furan congeners with TCDD-like toxicity is expressed in terms of TEFs. TEFs are estimates of the toxicity of specific dioxin and furan congeners relative to the toxicity of TCDD, which is assigned a TEF of 1. The sections that follow present public comments on the slope factor and TEFs that EPA used to evaluate dioxins and furans, and provide the Agency's response to those comments.

TCDD Cancer Slope Factor and Health Effects

The existing cancer slope factor for TCDD is based on human equivalent doses calculated from laboratory animal data by scaling doses to body weight raised to the ⅔ power. Commenters maintained that this practice is obsolete, and does not reflect a change in EPA policy recommending that doses be scaled to body weight raised to the ¾ power. The commenters calculated that compared to a cancer slope factor that is based on scaling doses to body weight raised to the ¾ power, the existing cancer slope factor overestimates cancer risk from dioxin-like compounds by at least 35% (assuming a linear dose-response), and as a result, all of EPA's cancer risk estimates for dioxin-like compounds should be adjusted by at least a factor of 0.65. Commenters also claimed that the existing slope factor for TCDD does not take into account mechanistic information suggesting there is a threshold for TCDD

[21] The value 0.55 is calculated as follows: If 27 percent of the mass of meat is lost during cooking, then 73 percent of the meat remains. Of the remaining 73 percent, 24 percent more is lost after cooking (76 percent is retained). As a result, the mass of meat *remaining* after cooking and post-cooking activities is 76 percent of 73 percent, or 55 percent of the original mass. Therefore, the amount of meat *lost* through cooking and post-cooking activities is 45 percent.

[22] USEPA. 1996. Proposed Guidelines for Carcinogen Risk Assessment. 61 FR 17960.

carcinogenesis. The commenters noted that this point is emphasized in a recent letter to the editor of Risk Analysis, written and signed by nearly twenty of the world's leading pharmacologists (Byrd et al., 1998 [23]) which states: ''A dose-response assessment for dioxin based on receptor binding would predict a nonlinear dose-response relationship with a threshold for tumor induction. A nonlinear relationship is more consistent with the available chronic animal bioassays and human epidemiology studies.'' The commenters contended that, given this information, the cancer risk posed by all of the dioxin-like dioxin and furans may well be zero for all pathways considered in EPA's risk assessment.

Commenters also took issue with EPA's use of the Health Assessment Document for 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds issued by EPA in 1994. These documents have been reviewed by the EPA Science Advisory Board (SAB), but have not been finalized. Some commenters noted that the SAB made substantial comments on the 1994 draft documents that are directly relevant to the risk assessment for the Chlorinated Aliphatics Listing Determination, and, because the SAB comments have not yet been incorporated in a final document, it is premature and incorrect to use the draft in this current rulemaking. The commenters noted that the front cover of the draft chapters state: ''Review Draft (Do not Cite or Quote)'' and

Notice: This document is a preliminary draft. It has not been formally released by EPA and should not at this stage be construed to represent Agency Policy. It is being circulated for comment on its technical accuracy and policy implications.

In addition, the commenters pointed out that page 5–33 of EPA's Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination, July 30, 1999, states: ''Most of the information in this summary is from this draft document and is subject to change, pending release of the final document.'' Thus, the commenters believe that conclusions made concerning dioxin in the risk assessment for chlorinated aliphatics wastes are based on a document that is preliminary and possibly incorrect.

In contrast to the comments above, one commenter strongly supported the proposal to list chlorinated aliphatics wastewaters because of significant risks posed by dioxins, and cited the 1994 draft Health Assessment Document for 2,3,7,8-TCDD and Related Compounds that was challenged by other commenters. The commenter asserted that dioxins are a probable human carcinogen and that, in animal testing, TCDD is one of the most potent carcinogens ever evaluated. The commenter noted that noncarcinogenic effects resulting from TCDD exposure also have been reported. Specifically, some studies suggest evidence of immunotoxicity, such as alteration in lymphocyte populations, cell surface markers or lymphocyte proliferative response. There also is evidence of reproductive and developmental effects from exposure to dioxins. The commenter pointed out that studies discussed in EPA's draft Dioxin Reassessment provide evidence of further health impacts.

EPA acknowledges the commenters' concerns regarding the use of a draft document to support our toxicity assessment for dioxin-like compounds. In the preamble to the proposed rule, and in the Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination (USEPA, 1999a), we presented a summary of the health effects believed to be associated with exposure to dioxins. Although the source of our information concerning dioxin health effects was the 1994 draft health assessment document challenged by commenters, the health effects we presented at the time of proposal continue to reflect our understanding of the health affects associated with exposure to dioxins. A December 1998 toxicological profile for chlorinated dibenzo-p-dioxins published by the Agency for Toxic Substances and Disease Registry (ATSDR, 1998 [24]) supports our appraisal of the adverse health effects associated with dioxin exposure. Our reassessment of dioxin risks is still ongoing and we are not relying on draft findings for this final listing determination.

As discussed above, the Agency also received comments on the value of the TCDD cancer slope factor that we used to evaluate cancer risk due to dioxins. The cancer slope factor that we used in our proposed chlorinated aliphatics risk analyses, 156,000 $(mg/kg\text{-}day)^{-1}$, is cited in a final Agency report published in 1985, [25] and is comparable to the TCDD slope factor published in the Health Effects Assessment Summary Tables (HEAST; USEPA, 1997), 150,000 $(mg/kg\text{-}day)^{-1}$ [26]. We understand that the 1996 Proposed Guidelines for Carcinogen Risk Assessment recommends the body weight scaling factor approach noted by the commenters, and provides guidance for considering nonlinear contaminant dose-response relationships in developing cancer slope factors. EPA anticipates that we will consider these recommendations of the 1996 Guidelines, as well as other relevant recommendations of the 1996 Guidelines, in the course of future development or reevaluation of contaminant cancer slope factors. However, given that the Agency has not completed its comprehensive reassessment of TCDD carcinogenicity and toxicity, the Agency has decided to use the 1985 cancer slope factor for TCDD (USEPA, 1985) for this rulemaking. Moreover, decreasing the slope factor for TCDD as recommended by commenters would not have any impact on our ultimate listing decisions for chlorinated aliphatics wastewaters, EDC/VCM wastewater treatment sludges, or methyl chloride wastewater treatment sludges. Our decision not to list chlorinated aliphatic wastewaters is supported by other factors that decrease our proposed risk estimate (section VI.A.3), and reducing the slope factor as recommended by the commenters would not reduce our risk estimates enough to alter our listing decisions for the EDC/VCM wastewater treatment sludges (section VI.B.2.b.iv). Nevertheless, EPA may choose to reevaluate today's listing decisions in the future, pending the final outcome of the Agency's ongoing reevaluation of TCDD toxicity.

[23] Byrd III, D.M., Allen, D.O., Beamer, R.L., et al. 1998. Letter to the Editor: The dose-response model for dioxin. Risk Analysis. 18(1):1–2.

[24] ATSDR. 1998. Toxicological Profile for Chlorinated Dibenzo-p-Dioxins (Update). U.S. Department of Health and Human Services. December.

[25] USEPA. 1985. Health Assessment Document for Polychlorinated Dibenzo-p-Dioxins. Office of Health and Environmental Assessment. EPA/600/8–84/014F. September.

[26] The cancer slope factor for TCDD that we used to calculate the cancer risk resulting from exposure to dioxins in chlorinated aliphatics wastewaters, as well as EDC/VCM wastewater treatment sludges (see section VI.B) was 156,000 $(mg/kg\text{-}day)^{-1}$(USEPA, 1985). We incorrectly cited HEAST as the source of our slope factor in Appendix C of the Risk Assessment Technical Background Document (USEPA, 1999a). A risk estimate calculated using the slope factor presented in HEAST would be only a factor of 0.96 (150,000/156,000) times a risk estimate calculated based on the slope factor presented in the 1985 document. This difference would have no discernable impact on our risk estimates (use of either would have resulted in the high end risk estimate for the adult farmer, 2E–05, that we presented in the proposed rule).

USEPA. 1997. Health Effects Assessment Summary Tables: Annual Update (HEAST). Office of Emergency and Remedial Response. Washington, D.C. July.

Use of the Cancer Slope Factor for HxCDD

EPA's Integrated Risk Information System (IRIS) database includes a cancer slope factor of 6,200 (mg/kg-day)$^{-1}$ for HxCDD mixtures. Commenters believed it was curious that EPA did not choose to use this slope factor for any of the HxCDDs or hexachlorinated dibenzofurans (HxCDFs) evaluated in the chlorinated aliphatics risk assessment. Instead, EPA used the TCDD cancer slope factor of 156,000 (mg/kg-day)$^{-1}$ and a TEF value of 0.1, yielding an effective cancer slope factor of 15,600 (mg/kg-day)$^{-1}$, to evaluate all dioxin-like HxCDDs and HxCDFs. Commenters argued that the risk assessment for HxCDDs and HxCDFs would be greatly improved if it were based on the value of 6,200 (mg/kg-day)$^{-1}$ because (1) The cancer slope factor for HxCDD mixtures is verified on USEPA's IRIS database, whereas the value for TCDD is not, and (2) the slope factor for HxCDD mixtures is based on exposure to a mixture of congeners, whereas the value for TCDD is based on exposure to a single congener. The commenters believe that the slope factor for HxCDD mixtures replaces the TEF approach, which was created as an interim approach in the absence of chemical-specific data, with one that is based on chemical-specific dose-response data for this family of congeners. The commenters assert that in using the cancer slope factor for HxCDD mixtures, the inherent uncertainties associated with the application of the TEF approach would be eliminated. For these reasons, the commenters recommended that all cancer risk estimates for HxCDDs and HxCDFs be adjusted by a factor of 0.40 (6,200/15,600). Additionally, since the slope factor of 6,200 (mg/kg-day)$^{-1}$ is based on scaling doses using body weight raised to the ⅔ power, the commenters believed that the slope factor should be reduced further to account for the Agency's more recent recommendation that doses be scaled to body weight raised to the ¾ power, resulting in a net adjustment factor of 0.26 for HxCDD and HxCDF risk estimates.

EPA disagrees with the commenters' suggestion that the slope factor for HxCDD mixtures that is presented in IRIS is applicable to all dioxin-like HxCDDs and HxCDFs. The slope factor presented in IRIS clearly is based on studies of only the 1,2,3,6,7,8- and 1,2,3,7,8,9- congeners of HxCDD, thus these are the congeners to which the slope factor would apply if EPA chose to use it in the chlorinated aliphatics risk analyses. Although the commenters suggested that use of the IRIS slope factor would have an impact on the results of the risk analysis, particularly if the slope factor is adjusted using a revised scaling factor, EPA strongly disagrees. Upon review of the congener-specific risk estimates provided in the Risk Assessment Technical Background Document for the proposed rule (USEPA, 1999a) it is clear that eliminating the 1,2,3,6,7,8- and 1,2,3,7,8,9- congeners of HxCDD from the risk analysis *completely* would have the impact of modifying the high end risk estimate for the adult farmer only by a factor of 0.96.

Use of the WHO TEFs

Commenters contended that a hidden area of conservatism in EPA's risk assessment lay in the fact that the TEF values for many congeners, including 2,3,4,7,8-PeCDF and 1,2,3,4,7,8-HxCDF (the congeners that are the primary contributors to EPA's risk estimates), do not reflect central tendency values, but are instead upper bound values. Using the World Health Organization's (WHO's) database of Relative Potency (REP) estimates for these two congeners, the commenters determined that the TEF value of 0.5 for 2,3,4,7,8-PeCDF is equivalent to the 81st percentile of REP estimates obtained from 59 in vivo studies, and that the geometric mean from these 59 studies corresponds to a value of 0.19. Similarly, the commenters determined that the TEF value of 0.1 for 1,2,3,4,7,8-HxCDF is equivalent to the 93rd percentile of REP estimates obtained from 10 in vivo studies for this congener, and that the geometric mean from these 10 studies corresponds to a value of 0.041. The commenters asserted that EPA's risk estimates for dioxin should be adjusted downward to correct for EPA's use of upper-bound TEF values. Curiously, one of the same commenters who opposed the manner in which the WHO–TEFs were developed, also applauded the use of the WHO–TEFs: ''Thus, [the commenter] fully supports EPA's shift from I–TEF to WHO–TEF. This replacement by WHO–TEF needs to be adopted promptly by all EPA programs to avoid unnecessary confusion among the general public'' and ''[the commenter] commends EPA for several good policy decisions in this proposal. Specifically [the commenter] supports EPA's adoption of the WHO–TEF * * *.''

In response, EPA points out that the TEF values are based on all available studies. These studies were conducted under a variety of exposure scenarios, including chronic, subchronic, short-term and acute, and examining a broad spectrum of endpoints including biochemical, developmental, immunotoxicological, neurological, carcinogenic and teratogenic. Whereas the resulting range of in vitro/in vivo REP values for a particular congener may span 3–4 orders of magnitude, final selection of a TEF value gave greater weight to REPs from repeat dose in vivo experiments (chronic > subchronic > subacute > acute). Furthermore, studies examining toxic effects were given greater weight than studies examining biochemical effects. This weighting scheme and the use of professional judgment are designed to give more weight to studies that provide exposure scenarios similar to humans and for studies examining effects of concern.

As pointed out by the commenter, the range of the REPs for a particular chemical can vary across studies. However, the commenters' proposed use of the geometric mean or Monte Carlo simulations is cause for concern. The variability in the REPs for a particular chemical can be due to several factors. As with any other determination, there is variability in the measurement which can be due to either inter-laboratory variability and variability in the actual measurement (that is, experimental variability in determining ethoxyresorufin O-deethylase [EROD] activity). Another source of variability could be due to species or endpoint differences in the REP of a chemical. Finally, the REP of a chemical can be due to differences in study design, for example, in vitro studies vs. in vivo studies, or short-term vs. long term in vivo studies. The use of expert judgment and the weighting scheme described above allows for consideration of the important biological factors regulating the relative potency of a chemical. Use of the geometric mean ignores this biological information.

More importantly, the information presented by the commenters is not representative of the actual data available on TEFs and how this information is used. Of all the chemicals included in the TEF methodology, only 5 of these chemicals account for over 80% of the TCDD equivalents in human tissues, 2,3,7,8-TCDD, 1,2,3,7,8-PeCDD, 1,2,3,6,7,8-HxCDD, 2,3,4,7,8-PeCDF and PCB 126. The TEF values for, PCB 126, 1,2,3,7,8-pentachlorodibenzo-p-dioxin, and 2,3,4,7,8-pentachlorodibenzofuran, are similar to the mean of the relative potencies of these chemicals from in vivo studies and in some cases they are lower than the mean of the relative potencies. Chemicals for which there is limited data tend to have TEFs assigned that are conservative estimates of the

relative potencies specifically because of the limited data.

Another short-coming of the proposed statistical method for determining the TEF is the lack of a weighting scheme. In assigning a TEF value for a particular congener, all available data comparing the relative potency of a chemical to TCDD or PCB 126 are considered. The expert panel examines these data sets and places more emphasis on studies which examine toxic responses following chronic or subchronic exposures. The proposed alternative approach, in which the TEF is assigned based in the mean of the relative potency values, ignores the weighting scheme and places a relative potency for biochemical alterations in vitro equal to that for relative potencies based on toxic responses following subchronic exposures in vivo. While the statistical approach recommended by the commenters provides an estimate of the variability, it ignores biological phenomena that influence the relative potencies of these chemicals. In contrast, the use of expert opinion provides a TEF that is based on endpoints of concern and considers biological factors that influence the relative potency of these chemicals. In the development of the TEF methodology, the use of expert opinion to provide an estimate of the variability of the TEF has not been applied. However, the data base that the expert panel uses to derive the TEF is available from the WHO and does present the range of relative potencies.

Finally, the commenter describes the present TEFs as overly conservative based on comparison to the geometric mean of the REPs. It is unclear what the commenter means by ''overly conservative.'' The true relative potency of these chemicals in humans is uncertain. Because the true value is uncertain, it is difficult to determine if the TEF values are over estimates of the potency or if they underestimate the true potency of these chemicals. For the chemicals described, 2,3,4,7,8-PeCDF and 1,2,3,4,7,8-HxCDF, the TEF is based on giving greater consideration to studies using the most relevant dosing regimen and examining toxic endpoints. Use of the geometric mean down plays the importance of the more relevant studies and provides greater weight to acute and in vitro studies.

ii. Chloroform

One commenter claimed that, as was the case for TCDD, EPA's unit risk of 2.3×10^{-5} $(ug/m^3)^{-1}$ for chloroform was calculated using the outdated practice of scaling dose in proportion to body weight raised to the ⅔ power, rather than to the ¾ power, as recommended in the 1996 Guidelines (USEPA, 1996). The commenter believed that, as a result, the cancer risks attributable to chloroform should be adjusted by a factor of 0.52 (calculated in the same manner as discussed for TCDD in section VI.A.2.e.i). Another commenter asserted that, in evaluating cancer risks due to chloroform exposure, EPA failed to consider the EPA Office of Water's (OW) reanalysis of chloroform carcinogenicity. The commenter noted that EPA's December 16, 1998 rulemaking on disinfection byproducts firmly rejected the LMS approach for assessing cancer risks from chloroform exposure. The commenter contended that in the preamble for OW's rulemaking, EPA concluded specifically that ''the nonlinear cancer extrapolation approach is the most appropriate means'' to assess cancer risks from chloroform (63 FR 69400). The commenter contended that using the nonlinear approach, exposures to chloroform of 0.3 mg/L are considered to pose no cancer risk. The commenter believed that, therefore, the 0.2 mg/L central tendency concentration for chloroform in chlorinated aliphatics wastewater poses no cancer risk.

In contrast, a third commenter strongly supported the proposal to list chlorinated aliphatics wastewaters because of the significant risks posed by the hazardous constituents in the waste, including chloroform. The commenter pointed out that health risks from chloroform are well documented, and noted that chloroform is a recognized human carcinogen, as well as ''a suspected toxicant of the following human health systems: cardiovascular or blood toxicant; developmental toxicant; endocrine toxicant; gastrointestinal or liver toxicant; kidney toxicant; neurotoxicant; reproductive toxicant; and respiratory toxicant.'' The commenter noted that chloroform is ''more hazardous than most chemicals in 11 out of 14 ranking systems and is ranked as one of the most hazardous compounds (worst 10%) to ecosystems and human health.'' (The commenter referenced ''EDF's Scorecard, www.scorecard.org, on chloroform. Scorecard incorporates governmental and other authoritative information on chemicals, including their known and suspected health effects.'') The commenter believed that EPA is clearly justified in listing chlorinated aliphatics wastewaters.

While EPA acknowledges the concerns of the commenter who highlighted chloroform's adverse health effects, EPA agrees with the commenter who, based on evaluations conducted by OW, challenged our assessment of chloroform carcinogenicity at low doses. Based on mode of action considerations, EPA's Science Advisory Board (SAB), WHO, the Society of Toxicology, and EPA all strongly endorse the nonlinear approach for assessing risks from chloroform. Although OW conducted its evaluation of chloroform carcinogenicity for oral exposure, the nonlinear approach for low-dose extrapolation cited by the commenter would apply to inhalation exposure to chloroform as well, since chloroform's mode of action is understood to be the same for both ingestion and inhalation exposures. Specifically, tumorgenesis for both ingestion and inhalation exposures is induced through cytotoxicity (cell death) produced by the oxidative generation of highly reactive metabolites (phosgene and hydrochloric acid), followed by regenerative cell proliferation (63 FR 15685). As explained in EPA OW's March 31, 1998, and December 16, 1998, **Federal Register** notices pertaining to chloroform (63 FR 15673 and 63 FR 69389, respectively), EPA now believes that ''based on the current evidence for the mode of action by which chloroform may cause tumorgenesis, * * * a nonlinear approach is more appropriate for extrapolating low dose cancer risk rather than the low dose linear approach * * *'' (63 FR 15685). In fact, OW determined that given chloroform's mode of carcinogenic action, liver toxicity (a noncancer health effect) actually ''is a more sensitive effect of chloroform than the induction of tumors'' and that protecting against liver toxicity ''should be protective against carcinogenicity given that the putative mode of action understanding for chloroform involves cytotoxicity as a key event preceding tumor development'' (63 FR 15686).

Given the recent evaluations conducted by OW that conclude that protecting against chloroform's noncancer health effects protects against excess cancer risk, EPA now believes that the noncancer health effects resulting from inhalation of chloroform would precede the development of cancer and would occur at lower doses than tumor (cancer) development. Although EPA has not finalized a noncancer health benchmark for inhalation exposure (a reference concentration, RfC), the Agency for Toxic Substances and Disease Registry (ATSDR) has developed a Minimal Risk Level (MRL) for inhalation exposure to chloroform. An MRL is ''an estimate of the daily human exposure to a hazardous substance that is likely to be

without appreciable risk of adverse noncancer health effects over a specified duration of exposure [acute, intermediate, or chronic]'' (http://www.atsdr.cdc.gov/mrls.html). To evaluate the noncancer hazard associated with exposure to chloroform in air, we compared the concentration of chloroform that we predicted to occur at a high end receptor's point of exposure to the ATSDR MRLs for inhalation exposure to chloroform. The high end chloroform exposure point concentration in air for chlorinated aliphatics wastewaters, approximately 0.0001 ppm (0.74 ug/m^3), is more than two orders of magnitude below the chronic inhalation MRL for chloroform, 0.02 ppm (the chronic MRL is more protective than either the acute or intermediate MRLs), indicating that there is no concern for adverse noncancer health effects, or, therefore, significant increased risk of cancer, resulting from inhalation exposure to chloroform derived from chlorinated aliphatics wastewaters.

In response to the commenter who disagreed with EPA's use of a slope factor based on animal data that had been adjusted to human equivalent doses using body weight raised to the ⅔ power, EPA notes that in OW's comprehensive reevaluation of chloroform carcinogenicity, EPA adjusted the animal data to equivalent human doses using body weight raised to the ¾ power (63 FR 15686), as recommended in EPA's 1996 Guidelines (USEPA, 1996).

f. Noncancer Dioxin Risks for Adults and Nursing Infants

One commenter asserted that EPA should have considered dioxin noncancer endpoints for adults and for nursing infants in developing a dioxin concentration limit that triggers air emission control requirements for wastewater tanks. The commenter explained that a trigger level based on noncancer endpoints may be higher than the cancer-based trigger level, but that EPA should not assume that is the case. The commenter said that EPA should approximate and consider a trigger level for noncancer endpoints.

First, we note that the lead option proposed by EPA was a 'standard' listing for chlorinated aliphatic wastewaters, (*i.e.,* listed regardless of dioxin concentration) with the dioxin trigger level proposed as an attempt to provide a means to implement tank cover requirements more appropriate to the potential risk, particularly because our data indicated that dioxin levels varied among generators (64 FR at 46503). However, as discussed in section VI.A.3 of today's preamble we have made a decision not to list chlorinated aliphatics wastewaters based on revised estimates of cancer risk. EPA also does not believe there is reason for listing chlorinated aliphatics wastewaters based on dioxin noncancer effects, as discussed further below. Although the proposed wastewater trigger level to implement tank cover requirements is moot because we are not finalizing the listing as proposed, we do not believe any increased risk of adverse noncancer effects due to dioxin in chlorinated aliphatic wastewaters is of concern in any event.

Typically, EPA calculates a hazard quotient (HQ) to assess the noncancer health effects resulting from contaminant exposure. For oral exposures, the HQ is the ratio of an individual's average daily contaminant dose to the reference dose (RfD [27]) for the contaminant. EPA has not established RfDs for any of the dioxin or furan congeners (USEPA, 1994 [28]). EPA is awaiting the finalization of the Draft Reassessment before formalizing an approach to evaluating noncancer risks from dioxin. In recent years EPA's Office of Solid Waste and Emergency Response (OSWER) has calculated a modified margin of incremental exposure (MOIE) to dioxin on a case-by-case basis (for example, see 64 FR 52828, September 30, 1999). The MOIE is a tool for evaluating the potential for the occurrence of noncancer health effects due to dioxin. The margin of incremental exposure is an expression of the additional (increment of) exposure to dioxin that an individual receives in excess of background exposure to dioxin. Using this approach, we compare the estimated average daily dose attributable to chlorinated aliphatic wastewaters to background exposures in the general population. As a measure of risk, the MOIE presupposes that if exposures are small relative to background, then risks from these exposures are likely to have limited significance for human health. While the MOIE analysis is not specific to any particular health endpoint, it does allow direct comparison of exposures related to chlorinated aliphatics wastewaters to background dioxin exposure experienced by the general population. Using the high end exposure estimates developed for the proposed rule, the high end margin of incremental exposure due to chlorinated aliphatic wastewaters would be 0.17 for an adult farmer and 0.19 for the breast-feeding infant of an adult farmer. However, we estimate that exposures attributable to chlorinated aliphatics wastewaters are actually lower than we originally presented in the proposed rule, due to our reevaluation of our air dispersion modeling results, beef intake rates, and air emissions modeling assumptions (see section VI.A.3). Therefore, we project that the actual high end margin of incremental exposure for both the adult farmer and breast-feeding infant of the adult farmer is less than 0.1, that is, an order of magnitude or more lower than any risk that may be attributable to background exposures (USEPA, 2000b).

3. Rationale for the Final Listing Determination: Summary of the Impact of Public Comments on the Proposed Listing Determination for Chlorinated Aliphatic Wastewaters

As discussed above, public commenters presented arguments that EPA's high end deterministic risk estimate for the adult farmer was in error and overestimated potential risks to human health and the environment. After reviewing and carefully considering all information provided by commenters, we re-evaluated our risk assessment results for air releases of dioxins and chloroform from chlorinated aliphatics wastewaters managed in aerated biological treatment tanks. Based on information provided by commenters, we decided it was appropriate to adjust our risk assessment results to account for cooking and post-cooking losses for beef, a more realistic size of the pasture supporting cattle indirectly exposed to dioxin emissions, and the potential for solids removal prior to wastewater treatment in aerated biological treatment tanks. After calculating these adjustments to our proposed risk assessment results, EPA found that accounting for cooking and post-cooking losses for beef would modify the high end risk estimate for the adult farmer by a factor of 0.78, and accounting for a more reasonable pasture size would modify the risk estimate by a factor of 0.50, resulting in an overall risk estimate of 7E–06. This risk estimate does not consider the impact of

[27] In the preamble to the proposed rule, in an effort to present the concept of RfDs and RfCs in plain language, we incorrectly characterized RfDs and RfCs as levels that EPA considers ''acceptable.'' RfDs and RfCs are not by themselves action levels; they do not establish acceptable exposures, nor do they establish danger levels. RfCs and RfDs are used as tools in establishing concern for non-cancer effects resulting from exposure to contaminants, and they serve as a common reference point from which risk managers can make decisions regarding estimates of exposure.

[28] United States Environmental Protection Agency (USEPA). 1994. Health Assessment for 2,3,7,8-TCDD and Related Compounds. Public Review Draft. Office of Research and Development. EPA/600/EP–92/001a–c. September.

assuming solids removal from the wastewater, which could reduce risk to an even greater extent, reasonably by an additional factor of 0.67 to 0.94, such that our final risk estimate could be as low as 4E–06. Moreover, our proposed estimate of risk due to emissions of chloroform, which we previously believed would be additive to our dioxin risk estimate, is no longer valid given recent Agency information regarding chloroform's mode of action. Specifically, there is no concern for adverse noncancer health effects resulting from inhalation exposure to chloroform derived from chlorinated aliphatics wastewaters, therefore, there is no concern for increased risk of cancer. Furthermore, the noncancer health effects due to dioxin that we characterized in response to comments presented above also would be affected by the adjustments to our analysis, and would be even less than projected.

Thus, EPA believes that the risk from this waste is well below 1×10^{-5}. We acknowledge that there is some uncertainty associated with the analyses we have conducted in response to the three comments we found persuasive—for example, we do not have data to support specific conclusions with respect to the percentage of solids removed from wastewater by prior to biological treatment. Nonetheless, we have been conservative in accounting for the factors raised by the comments and believe the risk is unlikely to be higher than our revised estimates. In addition, we note that the risk level presented for these wastewaters in the proposal (2×10^{-5} as marginal. As we have explained, we make listing determinations based on a weight-of-the-evidence approach, and the result of a decision is not dictated by whether the risk calculated for a waste is slightly more or less than 1×10^{-5}. So, even aside from the specific revised risk numbers we have calculated, we would decide not to list this waste based on the determination that the already marginal risk level presented in the proposal clearly overstates the actual risk associated with the waste, and that the actual risk is almost certainly considerably below the 1×10^{-5} level.

Therefore, the Agency concludes that potential air releases from wastewaters managed in biological treatment tanks do not present significant risk to human health and the environment and do not support listing chlorinated aliphatic wastewaters as hazardous wastes. After carefully reviewing our analyses and making necessary adjustments to our risk estimates based upon arguments and information presented in public comments, we estimate that air releases from the management of chlorinated aliphatic wastewaters would result in high end cancer risk risks less than 1×10^{-5}. The Agency therefore is finalizing a decision to not list chlorinated aliphatic wastewaters as hazardous waste.

4. Waste Management Practices / Scope of Listing Determination for Chlorinated Aliphatic Wastewaters

EPA believes that the rulemaking record for this rule supports a decision not to list chlorinated aliphatic wastewaters based on the typical management scenario of biological treatment in tanks. As mentioned above, and explained in more detail in Listing Background Document for the Chlorinated Aliphatics Listing Determination (USEPA, 1999c),[29] the majority of chlorinated aliphatic manufacturing facilities manage their wastewaters in tank-based wastewater treatment systems and either directly discharge treated wastewaters under NPDES permits, or discharge the wastewaters to POTWs. However, the Agency is aware that two facilities treat their chlorinated aliphatic wastewaters on-site and dispose of the wastewaters in on-site UIC wells. In addition, the Agency learned from public comments, that one facility pipes its wastewaters off-site to a nearby chemical manufacturing facility that commingles the chlorinated aliphatic wastewaters with other wastewaters, and treats the combined wastewaters in a wastewater treatment system that includes surface impoundments.

a. Wastewaters Managed in Underground Injection Control (UIC) Wells

With respect to the two facilities that manage their chlorinated aliphatic wastewaters in on-site UIC wells, one of the facilities already manages its wastewaters as hazardous due to the fact that the wastewaters exhibit the toxicity characteristic. This facility manages its hazardous wastewaters in covered tanks, pipes the wastewater directly to a Class I hazardous UIC well and complies with RCRA and CAA (HON) air emissions requirements. Due the fact that this wastewater is being managed as a hazardous waste and in full compliance with RCRA subtitle C and applicable CAA requirements, we conclude that this wastestream does not present significant risk and we believe that our decision not to list these wastewaters as hazardous waste will have no potential adverse impact in terms of protecting human health and the environment.

In the case of the other chlorinated aliphatic production facility that manages its wastewaters by disposing of them in UIC wells, some of the facility's wastewaters were, until recently, defined as hazardous waste (*i.e.,* derived from previously listed hazardous waste) and disposed in a Class I hazardous UIC well and in compliance with a no-migration petition. Recently, the facility was granted a delisting for these wastewaters by the Region VI EPA Regional Administrator. Given that the Regional Administrator has evaluated these wastewaters and determined that the wastewaters, as generated, do not pose significant risks to human health and the environment and warrant the award of a delisting, we believe that our decision not to list chlorinated aliphatic wastewaters as hazardous waste is appropriate for this wastestream and this decision will result in no adverse impact to human health and the environment.

This facility also manages some of its chlorinated aliphatic wastewaters as non-hazardous waste and injects the wastewaters into a Class I non-hazardous UIC well. Although we did not model this management practice in our evaluation of potential risks from the management of chlorinated aliphatic wastewaters, we did examine the specific waste management requirements governing these wastewaters. Our evaluation of the specific management requirements applicable to these wastewaters included a comparison of the state requirements governing Class I non-hazardous UIC wells and those governing Class I hazardous UIC wells. We found that the requirements in Louisiana, where this facility is located, for Class I non-hazardous UIC wells are virtually identical to those governing Class I hazardous waste UIC wells. EPA staff confirmed this conclusion after consulting numerous sources, including a direct examination of the state regulations and discussions with state authorities and EPA Regional personnel. We also note that in our evaluation of these wastewaters, we determined that the levels of constituents in the wastewaters are equivalent to the levels for which the facility's other wastewaters were recently delisted. This indicates that these wastewaters will not pose risk when managed in Class I UIC wells at this specific facility. Given these conclusions, we think this practice is protective and believe that our decision not to list chlorinated

[29] U.S. EPA. 1999c. Listing Background Document for the Chlorinated Aliphatic Listing Determination (Proposed Rule). Office of Solid Waste. July.

aliphatic wastewaters will have no adverse impact on human health and the environment due to the management of this facility's wastewaters in non-hazardous UIC wells.

b. Wastewaters Managed in Surface Impoundments

At the time EPA published the proposed listing determination for chlorinated aliphatic production wastes, the Agency was not aware that any chlorinated aliphatic wastewaters were managed in surface impoundments. EPA noted in the preamble to the proposed rule that although information available to the Agency, at the time of the proposed rule, indicated that surface impoundments had been used in the past, available information indicated that chlorinated aliphatic wastewaters are not managed in surface impoundments today. However, as a result of public comments to the proposed rule, the Agency obtained information indicating that a single facility, which is not a chlorinated aliphatics manufacturing facility, accepts wastewaters from a chlorinated aliphatic manufacturer and treats the chlorinated aliphatic wastewater stream after commingling it with other wastewaters generated at the chemical manufacturing facility. The commingled wastewaters are treated in a wastewater treatment system that includes biological treatment in surface impoundments.

After receiving information indicating that one facility was managing chlorinated aliphatic wastewaters in surface impoundments, the Agency conducted additional research to determine if other chlorinated aliphatic wastewaters were being managed in impoundments. The results of this research are that the Agency could identify no other facilities managing chlorinated aliphatic wastewaters in surface impoundments.

As a result of comments received in response to the proposed rule indicating that one facility treats chlorinated aliphatic wastewaters in surface impoundments, EPA did a screening analysis of potential risks from these wastewaters when managed in an impoundment. That risk screening analysis was based on very conservative assumptions that result in an overestimate of risk, given that the Agency assumed there would be no dilution of the wastewater in the environment and that an individual would drink the wastewater directly from the impoundment. The screening analysis suggested that wastewaters might pose risks in impoundments under the very conservative (and unrealistic) assumptions used in the screening analysis (that is, it may not be safe to drink the wastewaters as generated in the impoundment). However, given the overly protective nature of that screening assessment, the ''screening analysis'' does not provide meaningful information about any risks actually associated with this waste management practice and, therefore, it does not provide a basis for listing the wastewaters as hazardous.

EPA has to make the best decision it can with the information and analysis it has at the time of its evaluation. EPA has decided at this time not to list as hazardous chlorinated aliphatic wastewaters, regardless of how the wastewaters are managed. We are finalizing this no list determination, given that the data and analysis before us, while indicating some potential for risks from the management of wastewaters in surface impoundments, does not warrant a decision to list these wastewaters as hazardous. Simply put, EPA was unable, in the time afforded under the consent decree, to perform a full risk assessment for this waste management practice and to subject that decision to public comment, and the screening assessment that EPA was able to do was indeterminate. Although EPA cannot rule out the possibility that this practice may present some risk to human health and the environment, EPA has fully assessed the risk presented by the predominant mode of waste management and made the determination that it does not present a substantial hazard. In fact, of the 23 chlorinated aliphatic manufacturing facilities that generate wastes effected by this rulemaking, only 3 facilities manage wastewaters in non-tank based systems. Under these circumstances, EPA has concluded that it is appropriate to make a final decision based on the information and analyses with respect to all the units and practices other than this impoundment.

This conclusion is based in part on our interpretation of our obligation under RCRA section 3001(e)(2). Under that provision, Congress required that EPA make final listing determinations for 17 different waste categories in 15 months. In view of the scope of the task and the tightness of the timeframe established, Congress could not have intended that EPA conduct an in-depth review of every unit managing any amount of waste within the categories. Rather, Congress must have intended that EPA make the best reasoned judgment it can based on analyses and information that are reasonably representative of the waste categories. In practice, EPA has gone well beyond this in its listing decisions and generally has tried to account for all the waste management practices and units of which it is aware. However, in this rulemaking, EPA was faced with the choice of continuing this practice—which would have meant diverting time from completing the rulemaking to attempt to negotiate a further extension of the consent decree—or completing the rulemaking on schedule. Although EPA could always perform more complete and rigorous analysis given more time on any rule, at some point it is appropriate to move toward finalizing a decision and cut off further analysis. In view of the length of time already devoted to this rulemaking and the number of extensions previously negotiated to the consent decree, and the fact that only one waste management unit was unaccounted for in our analysis, EPA decided to issue a final determination not to list aliphatics wastewaters without accounting for this unit.

EPA is not deferring a decision for chlorinated aliphatics wastewaters; it is making a final decision not to list the wastewaters. Of course, EPA can always consider additional information and analyses in the future and make further regulatory decisions based on that. In addition, should EPA learn that the management of waste at this impoundment presents a threat to human health and the environment, EPA could consider taking site-specific action to abate the threat without listing the waste, *e.g.,* an action under RCRA Section 7003.

B. Wastewater Treatment Sludges From the Production of EDC/VCM

EPA is listing as hazardous sludges generated from treating wastewaters associated with the manufacture of ethylene dichloride and vinyl chloride monomer. This wastestream meets the criteria set out at 40 CFR 261.11 (a)(3) for listing a waste as hazardous and is capable of posing a substantial present or potential hazard to human health or the environment when managed in land treatment units. EPA is finalizing a conditional listing for this waste, based upon the Agency's determination that the waste does not pose a substantial risk when disposed of in a landfill.

K174 * * * Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a subtitle C or non-hazardous landfill licensed or permitted by the state or federal

government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (*e.g.,* contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, etc.) that the terms of the exclusion were met.

1. Summary of the Agency's Listing Decision for EDC/VCM Wastewater Treatment Sludges

EPA evaluated potential risks from the management of wastewater treatment sludges generated by producers of ethylene dichloride (EDC) and vinyl chloride monomer (VCM). This waste grouping consists of all sludges generated from the treatment of EDC/VCM wastewaters, excluding sludge generated from the treatment of VCM-A wastewaters (discussed elsewhere in today's rule). EPA estimates, based upon 1996 data, that approximately 104,600 metric tons of wastewater treatment sludges are generated annually by facilities that produce EDC and/or VCM.

EDC/VCM wastewater treatment sludges are generated by 12 facilities. Most facilities manage these sludges by disposing of them either in a hazardous waste landfill or a non-hazardous waste landfill. However, one facility manages its EDC/VCM sludges in an on-site land treatment unit. To assess the potential human health risks associated with EDC/VCM sludges, EPA evaluated potential risks from managing this waste in an off-site non-hazardous waste (unlined) landfill and an on-site land treatment unit. The highest risk estimates were calculated for an adult farmer who ingests beef and dairy products containing dioxin derived from airborne releases and erosion/runoff from the land treatment unit. The proposed high end and central tendency risk results for the farmer exposed to dioxin from the land treatment unit were 2E–4 and 4E–6, respectively. The Agency also concluded in the proposal that the management of EDC/VCM wastewater treatment sludges in landfills does not present risks of sufficient concern to support a decision to list the sludges as hazardous waste when managed in this manner. 64 FR 46476; 64 FR 49052 (September 9, 1999 **Federal Register**).

Issues raised by commenters, and data provided in comments received in response to the proposed rule, caused the Agency to reevaluate the risk analyses that were the basis of our proposed risk estimates. After careful consideration of information provided by commenters, we lowered the estimated risk associated with the management of EDC/VCM sludges in a land treatment unit. While the Agency's proposed high-end deterministic risk estimate for the land treatment unit (2E–4) was at a level at which the Agency presumes a waste poses sufficient risk to be listed (i.e., 1E–4 or greater), the revised risk estimate (7E–5) falls within the range of risks where the Agency may decide to list the waste as hazardous (i.e., between 1E–4 and 1E–6), upon consideration of additional factors. 59 FR at 66077. More specifically, EPA has previously stated that where risk estimates are within the 1E–4 to 1E–6 range, there is a ''presumption of candidacy for either listing (risk >1E–5) or no listing (risk < 1E–5).'' 59 FR at 66077. Applying that approach in this instance, the risk estimate for the land treatment unit of 7E–5 is not only greater than 1E–5, it is in the upper end of the range between 1E–5 and 1E–4. Comments received on the Agency's proposed risk analysis for the landfill waste management scenario did not result in the Agency modifying the risk estimate for the landfill. High-end deterministic risk estimates for the landfill scenario were all well within the presumptive no-list range (*i.e.,* less than 1E–6) with the exception of arsenic, the groundwater risk for which was estimated at 3E–5. (The Agency's discussion of additional factors that led EPA to decide that the arsenic risk estimate alone did not support listing EDC/VCM wastewater treatment sludges managed in landfills is presented below in Section VI.B.2.b.v. of this preamble.)

The Agency is therefore listing as hazardous EDC/VCM wastewater treatment sludges (using a conditional listing approach as proposed) based upon EPA's consideration of the risk estimates and additional factors. The Agency's decision was influenced by the fact that dioxin has been heavily studied, and the dioxin concentrations and volumes of EDC/VCM sludge have been well characterized in EPA's study of this industry (and, along with the toxicity [30] of dioxin, were incorporated into the risk assessment). Additionally, there was evidence that the land application unit where these wastes are currently managed had releases of other constituents to the environment, which indicates that there may not be adequate coverage by other regulatory programs.[31] Because industrial solid waste land treatment is a plausible management scenario for these wastes, EPA is concerned about EDC/VCM sludges managed in this manner where dioxin (a chemical that is persistent over the long term) is the constituent of concern.

Finally, the EPA's concern is that not only is the application of dioxin-containing wastes in a land treatment unit plausible, it is in fact occurring. No commenter provided evidence that absent a decision to list the waste, there is other regulatory authority that would assure that the risks the Agency estimates for this practice would not continue, either at the facility currently utilizing this practice, or at a different facility.

The Agency concludes, based upon the estimated risk for dioxin of 7E–5, and after considering other relevant factors described above, that EDC/VCM wastewater treatment sludges pose a substantial hazard when managed in land treatment units. In addition, the Agency concludes that this waste does not pose a substantial hazard when managed in landfills. Based on these conclusions the Agency is promulgating a conditional listing for this waste. EPA is listing EDC/VCM wastewater treatment sludges as hazardous waste, unless the sludges are managed in landfills. The conditional listing promulgated today also requires that EDC/VCM wastewater treatment sludges not be placed on the land prior to disposal. In addition, generators must be able to demonstrate that the sludges are managed in accordance with the conditions for being excluded from the hazardous waste listing.

2. Response to Major Comments Received on Proposed Rule for EDC/VCM Wastewater Treatment Sludges

EPA received comments on a number of issues concerning the data and analyses EPA used to arrive at our listing decisions for EDC/VCM wastewater treatment sludges. In addition, one commenter asserted that many of the comments on EPA's analysis of dioxin risks from the management of chlorinated aliphatics

[30] Dioxin has the highest slope factor (an indicator of carcinogenic potency) of any chemical in the EPA IRIS database.

[31] See Appendix A.—Environmental Release Descriptions, in Hazardous Waste Characteristics Scoping Study U.S. EPA, November 15, 1996, pp. A–28 and A–29.

wastewaters (for example, comments relating to the dioxin cancer slope factor) also apply to EPA's analysis of dioxin risks from the management of EDC/VCM wastewater treatment sludges in a land treatment unit. The comments we received may be generally divided into nine categories: (1) Comments on EPA's waste management assumptions; (2) comments on the exposure scenarios we evaluated in our risk assessment; (3) comments on how we calculated exposure point concentrations in the risk assessment; (4) comments on EPA's exposure assessment; (5) comments on EPA's toxicity assessment for dioxin; (6) comments on how we characterized risks associated with arsenic; (7) comments on demonstrating compliance with the listing description; (8) comments on the status of EDC/VCM sludges that are managed in ways other than land treatment or landfilling; and (9) comments on whether or not a contingent management approach to the listing is appropriate. The comments, and the Agency's responses to these comments, are described below.

a. Waste Management Assumptions

Eleven facilities manage EDC/VCM wastewater treatment sludges by disposing of them either in a hazardous waste landfill or a non-hazardous waste landfill. One facility manages this waste in an on-site land treatment unit. As a result of public comment, the Agency has learned that one facility generates and manages EDC/VCM wastewater treatment sludges in surface impoundments.

In 1996, approximately 104,561 metric tons of wastewater treatment sludges were generated in wastewater treatment systems used to treat process wastewaters from the manufacture of EDC/VCM. Of this volume, approximately 6,574 metric tons is attributable to the production of EDC/VCM. The remaining sludge volumes are associated with the treatment of other process wastewaters that are commingled with EDC/VCM process wastewaters and treated in the same wastewater treatment system.

i. Waste Volumes

One commenter questioned whether EPA used the correct assumption with regard to waste volume in the risk assessment, given that the production of EDC/VCM may be increasing in the United States. The commenter cited information provided in the Agency's Economics Background Document for the proposed rule. The commenter asserted that had EPA assumed a larger waste volume, based upon increased future production capacity, the result would be an increase in the predicted level of risk associated with the management of EDC/VCM sludges in landfills. The same commenter questioned whether or not the Agency had accounted for the likelihood that EDC/VCM wastewater treatment sludges generated by different facilities may be co-disposed in the same landfill.

In response to the commenter's concerns regarding co-disposal of sludges, the Agency wishes to clarify that we did, in fact, account for co-disposal of EDC/VCM sludges where information provided in the RCRA 3007 questionnaire responses showed that multiple generators dispose of the sludges in the same off-site landfill. As documented in the Listing Background Document (USEPA, 1999c, USEPA, 2000e), the Agency accounted for two instances where sludges generated by two generators are disposed in the same landfill.[32] In both cases, the Agency used the combined sludge volume in assessing the quantities of sludges managed in off-site landfills.

In response to other concerns raised by the commenter, the Agency reviewed the sensitivity analyses for the landfill analyses that were presented in the July 1999 Risk Assessment Technical Background Document. Our conclusion is that predicted risk levels are not very sensitive to changes in waste volume. As shown in Table H.3.3 in Appendix H of the Risk Assessment Technical Background Document (USEPA 1999a), we found that increasing waste volume from the central tendency value of approximately 15,000 m^3 to the high end value of approximately 51,000 m^3 increases the maximum 9-year average receptor well concentration, thus risk, by only a factor of 1.6 in the 10,000 year time period that we modeled. This means that if waste volumes more than tripled, the risk estimate would be expected to increase by only a factor of 1.6 (that is, to 5E–05). Such an increase in production and waste generation, which results in a relatively small change in potential risk, would not cause the Agency to change its listing decision. The Agency also points out that there may be significant uncertainties in projecting changes in the volume of waste generated, based upon increased production capacity, due to uncertainties in the relationship between production rates and waste generation rates and the effects that technology changes, types of facility expansions (*i.e.,* increased production capacity at existing facilities versus building new facilities) and the impact of potential (and simultaneous) adoption of waste minimization activities.

ii. Interpretation of Analytical Results

A commenter questioned the Agency's use of analytical results from ''dedicated'' sludge samples in its risk analysis and the commenter indicated that some of the ''non-dedicated'' sludge samples appear to have higher dioxin concentrations than the dedicated samples. As explained in the preamble to the proposed rule (see 64 FR 46483), ''dedicated'' wastes are those wastes attributable only to the production of EDC/VCM and do not include wastes derived from the production of other chlorinated aliphatic wastes and commingled with EDC/VCM sludges. In our risk analysis, EPA used analytical information from samples of dedicated sludges only to isolate the risks from constituents attributed to those wastes generated from the production of the chlorinated aliphatic chemicals of concern to this listing determination. Given the commenter's concerns, the Agency did review the dioxin concentrations in the sludge samples not included in the risk analysis. The Agency found that on the basis of dioxin TEQs, the highest dioxin concentration in the ''non-dedicated'' samples (those not included in our analysis) was less than one fourth of the highest concentration of dioxins (on a TEQ basis) found in the samples used in the analysis. Therefore, had the Agency used the analytical results from the non-dedicated samples in its analysis, the use of the dioxin concentrations would not have caused an increase in the risk estimate.

A commenter also questioned EPA's use of TCLP analytical results to predict leachate concentrations of contaminants from landfill disposal of EDC/VCM wastewater treatment sludges. The commenter questioned why EPA's data showed that lead and chromium are not detected using the TCLP, given that these constituents were found in the total constituent analysis of the sludges. The commenter suggested that high iron content in the sludges may affect the concentration of lead predicted by the TCLP analysis, citing data in a previous EPA rulemaking (Phase IV Land Disposal Restrictions, or LDR, proposed rule) that suggests high iron content effects lead. EPA believes that the commenter is referring to an issue first raised in the Phase III LDR proposed rule and subsequently finalized in the Phase IV LDR final rule on May 26, 1998 (63 FR 28556). In the Phase IV LDR final rule, EPA determined that the addition

[32] See page 56 of ''Listing Background Document for the Chlorinated Aliphatics Listing Determination'' (USEPA, 1999c).

of iron filings to lead-containing hazardous wastes was not a legitimate form of treatment, and was in fact impermissible dilution, because the iron filings can interfere with the TCLP test used to determine whether the waste has been effectively treated (40 CFR 268.3(d)). The commenter stated that EPA should determine whether the non-detects for lead in the sludge samples are an artifact of the TCLP, and if so, that EPA should instead use partitioning equations rather than TCLP data in the landfill modeling.

In response, the Agency notes it has consistently relied on the results of TCLP leach tests in estimating the leaching potential of wastes for making listing determinations, although more recently this use in listing determinations has narrowed to evaluation of leaching potential of wastes actually or plausibly being managed in Municipal Solid Waste (MSW) landfills (see for example, 65 FR 55684, September 14, 2000 **Federal Register**). As presented elsewhere in today's preamble, the Agency modeled an unlined, MSW landfill for EDC/VCM sludges, which is not only plausible but is actually occurring as well (see section below on landfill controls).

In addition, after reviewing the information related to the LDR rulemakings referenced by the commenter, and the analytical data for the EDC/VCM sludge samples EPA used in the landfill analysis, EPA does not believe there would be potential risks from groundwater even if all of the lead leached out of the samples EPA used in the landfill modeling, therefore the screening analysis performed was quite adequate to conclude that no significant risks would be posed by the lead in the EDC/VCM sludges. For further information the reader is referred to the Response to Comments Document for today's rule.

iii. Landfill Controls

Two commenters questioned why EPA assumed, in its risk assessment for EDC/VCM sludges managed in landfills, that non-hazardous waste landfills are covered daily and have runoff and runon controls. The commenters stated that some states do not require industrial, non-hazardous waste, landfills to apply daily cover and/or install runon and runoff control systems. The Agency contacted state agency officials in states where generators of EDC/VCM wastewater treatment sludges are located and where landfills identified in the RCRA 3007 questionnaires as accepting EDC/VCM wastewater treatment sludges are located. Officials in each state indicated that either industrial landfills are required to have daily cover and runon/runoff controls, or in the case of one state, although state regulations do not require these controls, the controls are generally required and enforced through permits. In addition, EPA called the owner/operators of each of the landfills identified in the RCRA 3007 questionnaires as accepting EDC/VCM wastewater treatment sludges for disposal. In every case, the owner/operators indicated that daily cover is applied and that the facility is equipped with runon/runoff controls. In addition, all but one of the landfills contacted accepts municipal solid waste. Therefore, Federal and state regulations require these landfills to apply daily cover and be equipped with runon and runoff controls. In addition, we expect that state agencies will continue to require these technical standards in future. Given that all landfills currently accepting EDC/VCM wastewater treatment sludges currently are applying daily cover and are equipped with runon/runoff controls and given that state agencies in states where EDC/VCM sludges currently are generated and managed require these controls, the Agency concludes that the commenters' concerns are unfounded.

b. Risk Assessment Exposure Scenarios, Contaminant Fate and Transport Modeling, Exposure Assessment, and Toxicity Assessment

EPA received comments on several aspects of the landfill and land treatment unit risk assessments that we conducted to support the EDC/VCM wastewater treatment sludge listing determination. EPA received two specific comments concerning the exposure scenarios that we evaluated in the landfill risk assessment: 1) that we did not evaluate particulate emissions from landfills, and 2) that we failed to consider ''non-routine'' exposures. EPA also received a comment on the contaminant fate and transport modeling that was conducted for the groundwater pathway analysis under the landfill scenario. EPA uses contaminant fate and transport modeling to estimate the contaminant concentrations at the receptor's point of exposure. Commenters contended that we had not correctly evaluated groundwater pathway risk for the landfill because we assumed that leaching of the landfill did not begin until after landfill closure. Lastly, we received a general comment that we believe applies to several aspects of our land treatment unit risk assessment: the exposure scenarios evaluated, the contaminant fate and transport modeling, and the exposure and toxicity assessments. This comment asserted that ''much of the same type of over conservatism'' present in the risk assessment for the chlorinated aliphatic wastewaters also was present in the risk assessment for EDC/VCM sludges managed in a land treatment unit.

i. Particulate Emissions From Landfills

Based upon information provided in responses to the RCRA § 3007 questionnaires, EPA evaluated the risks associated with the management of EDC/VCM wastewater treatment sludges in unlined municipal landfills and in a land treatment unit. We determined that releases from landfills could occur through the release of vapor emissions to the air and through leaching of the waste into the subsurface. One commenter was concerned that EPA had not considered the risks due to exposure to particulate emissions from landfills in which EDC/VCM wastewater treatment sludges are disposed. The commenter acknowledged that the Agency did not evaluate particulate emissions because the Agency assumed that the moisture content of the waste would prevent the release of particulates. The commenter indicated that the assumption that sludges would have sufficient moisture content to prevent particulate emissions was ''not well founded, given possible climate and wind conditions (for example, location of a landfill in an arid climate with high wind).''

The Agency disagrees with the commenter. As explained in the proposed rule (64 FR 46484), data collected by the Agency in support of the listing determination indicate that the EDC/VCM sludges have a high moisture content. Samples analyzed by the Agency had moisture contents of between 41 and 74 percent, which should prevent generation and release of particulates to the air during the time between placement of the waste in the landfill and the application of daily cover (or the application of new waste). Moreover, based on the results of our risk analyses for the land treatment unit, we do not think that particulate emissions from landfills, even if they did occur, would present significant risk. Under the land treatment unit scenario, dioxins were the only contaminants for which we identified significant risks due to air releases, and only 8 percent of the dioxin risk was due to particle phase air releases, while 92 percent of the risk was due to vapor phase air releases (Table 5–8; USEPA, 1999a). Under the landfill scenario, the vapor pathway dioxin risk was estimated to be 4E–10 (Appendix H.3.1,

Table H.3–1c; USEPA, 1999a). Even though we did not calculate risks from particle emissions, we expect they would be even less than 4E–10, based on the relative risks from land treatment units.

ii. ''Non-Routine'' Exposures

One commenter claimed that virtually the entire risk modeling effort was confined to long-term chronic risk exposures, that is, primarily indirect exposures offsite of a management facility. The commenter believed that EPA ignored activities at the waste management unit itself, and therefore ignored risks to workers and others at the waste management facilities. The commenter believes EPA also should consider acute exposure risks through accidents and other ''non-routine'' waste management conditions. Examples of such conditions provided by the commenter include high winds (40—60 mph) on dry days, drought or arid conditions, heavy rainfall, and hurricanes. The commenter stated that heavy rainfall and hurricane conditions could cause substantial amounts of dioxin-laden solids to be moved over land and into streams if the wastes were disposed in an unbermed area. The commenter expressed concern that during windy and arid conditions, dioxin-laden particulates may be dispersed from the landfill and beyond the unit boundaries. The commenter argued that the analysis of non-routine exposures is appropriate because of the toxicity and persistence of dioxin relative to other contaminants.

The commenter was concerned that EPA did not evaluate acute exposure to dioxins under scenarios involving workers, extreme climatological events, or accidents. EPA agrees that it can be appropriate to assess acute exposure scenarios or accidents in certain cases. However, in the case of chlorinated aliphatic sludges, we did not believe that such scenarios merited explicit analysis because the sludges, which result from the treatment of wastewaters, do not contain the very high concentrations of dioxins that we believe would be necessary to result in estimates of significant acute risk or hazard. For example, the highest TCDD TEQ concentration reported for dedicated EDC/VCM wastewater treatment sludges, 0.907 ug TCDD TEQ/kg, is below EPA's Superfund soil action level of 1 ug TCDD TEQ/kg which was developed to be protective of direct long term exposure to dioxins in residential soils and therefore clearly would be protective of shorter term exposure (OSWER Directive 9200.4–26, April 13, 1998).

iii. Delay of Landfill Leaching Until After Closure

In evaluating releases to groundwater from the landfill used to manage EDC/VCM sludge, EPA made a simplifying assumption that contaminant leaching from the landfill does not occur until after the landfill closes (that is, after 30 years). As we explained in the proposed rule, we made this assumption because of the complexities associated with linking the output of our landfill partitioning equations and our groundwater model, EPACMTP (EPA's Composite Model for Leachate Migration with Transformation Products). Two of the public commenters and all three of the peer reviewers questioned the appropriateness of our assumption, suggesting that it would lead to an underestimate of risk. One commenter noted that during the period when the landfill is open and the waste is exposed directly to storm water, ''leachate migration of contaminants is at its highest level.''

In retrospect, we realize that we were not completely clear concerning how our landfill modeling approach considers the production of leachate over the life of the landfill. Because of the way our landfill model is constructed, the application of daily cover and a final cap only limits the release of air emissions from the landfill, daily cover and final cap do not limit the production of landfill leachate. This is because the infiltration rate that we use for the landfill during its active life is the same as the infiltration rate that we use for the landfill once it is closed—we assume that the infiltration through the daily cover and final cap is the same as the infiltration through the exposed waste. Our basis for assuming that the cap will not reduce infiltration is that we predict that over the long term a cap will fail, and will cease to function effectively. Consequently, the effect of delaying leaching of the landfill until after closure is only to ''offset'' the arrival of the peak contaminant concentration at the groundwater receptor well by 30 years. For the sole contaminant of concern for the landfill, arsenic, the peak arrival time was estimated to be 8800 years. Reducing this time estimate by 30 years is clearly insignificant.

iv. Overly Conservative Land Treatment Unit Risk Analysis

One commenter maintained that ''much of the same type of over conservatism'' that was present in the risk assessment for the chlorinated aliphatic wastewaters also was present in the risk assessment for EDC/VCM sludges managed in a land treatment unit. The commenter contended that ''[f]or the same reasons articulated'' for wastewaters, ''EPA should reevaluate and adjust risk assessment parameters as necessary before proposing to list such wastes, even under a land treatment scenario.''

Although the commenter was not specific regarding which aspects of their comments on the wastewater risk analysis they felt applied to the Agency's evaluation of EDC/VCM sludges managed under a land treatment unit scenario, we reviewed the risk assessment comments for wastewaters to determine which could be relevant to the land treatment unit analysis. The comments that we focused on are discussed below. Section VI.B.3 summarizes how the comments influence the proposed risk estimate for EDC/VCM sludges managed in a land treatment unit.

Cooking and Post-Cooking Losses for Beef

The commenter claimed that the intake rates that EPA used for beef should have been adjusted downward to account for cooking and post-cooking weight loss, as recommended in the Exposure Factors Handbook (USEPA, 1997). As was the case for wastewaters (see section VI.A.2.d.), EPA agrees that we should have accounted for cooking and post-cooking losses of beef in our exposure analysis for the land treatment unit.

Assessment of the Toxicity of Dioxins and Furans

In our evaluation of the comments on wastewaters, we disagreed with the commenter's claim that we should modify the cancer slope factor that we used for TCDD and that our TEFs represent upper-bound values. Our responses to these comments are provided in section VI.A.2.e.i. Although we also disagree with the commenter's assertions that we should use the IRIS slope factor for HxCDD mixtures in our risk assessment (see section VI.A.2.e.i.), eliminating the 1,2,3,6,7,8- and 1,2,3,7,8,9-congeners of HxCDD from the land treatment unit risk analysis *completely* would have the impact of modifying the high end risk estimate for the adult farmer only by a factor of 0.97, which would not significantly change the results of the risk analysis.

EPA Should Have Evaluated Site-Specific Exposure Scenarios

The commenter maintained that EPA should have used a site-specific approach to assessing risks from

management of chlorinated aliphatics wastewaters (see section VI.A.2.b). The commenter suggested that such an approach would recognize that EPA's assumption that a farmer lives at the same location within 300 meters of a chlorinated aliphatics facility for 48.3 years, and raises fruits, exposed vegetables, root vegetables, beef cattle, and dairy cattle within this distance, is unrealistic. In addition, the commenter challenged the amounts of home-produced beef, dairy products, vegetables, and fruits that EPA assumed were consumed by the farmer.

Although the Agency's response to these comments is presented in our discussion of chlorinated aliphatics wastewaters in section VI.A.2.b, there are a few additional points that we can make with regard to the exposure scenario we considered in our evaluation of the risk associated with management of EDC/VCM wastewater treatment sludges in a land treatment unit. Although our land treatment unit analysis was inherently more site-specific than our analysis of wastewaters (since only one facility uses a land treatment unit to manage EDC/VCM sludges), we do not believe, for the reasons presented in section VI.A.2.b.i, that it would have been appropriate to conduct facility-specific risk analyses for chlorinated aliphatics wastes.

In response to concerns regarding the likelihood that a farmer would raise fruits and vegetables for home consumption, in addition to producing beef and dairy products, EPA refers to Table 5–8 of the Risk Assessment Technical Background Document (USEPA, 1999a) that shows that only 4 percent of the high end risk for the adult farmer was due to ingestion of home grown fruits and vegetables. As was the case for wastewaters, even though EPA believes it is plausible that a subsistence or hobby farmer would raise fruits and vegetables for home consumption, the validity of EPA's risk estimate depends almost entirely on the validity of our assumption that a farmer might consume both beef and dairy products from cattle raised on a farm located near a chlorinated aliphatics production facility. While we responded to this comment in our previous discussion of wastewaters, EPA notes that even in the specific case of the facility where the existing land treatment unit is located, there is evidence of the potential close proximity of grazing cattle. First, the most recently available agricultural census data (1997) indicate that both beef and dairy cattle were reported as being raised in the parish in which the land treatment unit is located. Second, although the potential proximity of cattle farming operations to chlorinated aliphatics facilities was confirmed by commenters on the wastewater risk analysis, EPA notes that, in addition, a land use map depicts the location of the facility that operates the land treatment unit as adjacent to land described as cropland and pasture (USEPA, 2000b). In addition, in a 1994 aerial photograph of the facility (located in the docket for the final rule), areas adjacent to the facility are depicted as being used for agriculture. Third, a 1986 RCRA Facility Assessment (RFA) conducted at the facility at which the land treatment unit is located noted the following for a landfarm/land treatment area at the facility: ''* * * the State issued a violation to the facility for allowing cows to graze in this area.''

EPA Incorrectly Evaluated the Contribution of Feed to Dioxin Levels in Dairy and Beef

The commenter raised several issues related to how EPA evaluated the contribution of feed to dioxin levels in dairy and beef. The Agency's responses to most of these concerns are addressed in section VI.A.2.c.ii. As was the case for wastewaters, we reviewed our methodology for estimating the concentrations of dioxins in beef and dairy products. The dioxins in the beef and dairy products result primarily from the cattle's intake of forage and soil that are contaminated by air emissions and runoff/erosion from the modeled land treatment unit—minor levels of dioxins are contributed to cattle as a result of the cattle's ingestion of grain or silage (USEPA, 2000b). Consequently, all that is required for the adult farmer to realize the risk that EPA presented in the proposed rule is that the farmer consume beef and dairy products derived from cattle that consume forage and incidentally ingest soil from the farmer's pastureland/field. That is, it is not necessary that the farmer consume home-grown fruits and vegetables, or that the farmer produce grain or silage for use as cattle feed. As was the case for wastewaters, we felt that we likely should have considered how the concentrations of dioxins in air vary over a wider areal extent that would be more consistent with the area of a pasture where cattle graze. Similar to wastewaters, we calculated what the impact would be to the risk estimate if we accounted for a more reasonable pasture/field size (USEPA, 2000b). In addition, in response to comments from peer reviewers, we also reviewed the method by which we evaluated risk attributable to the runoff/erosion pathway to ensure that we appropriately characterized the dioxin concentrations in feed, thus the concentrations in dairy and beef. In subsequently evaluating the land treatment unit dioxin mass balance, we determined that, due to limitations of the available model, we overestimated the amount of dioxin-contaminated soil lost from the land treatment unit due to erosion over long durations (USEPA, 2000b). The revised risk estimate that considers these modifications is presented in section VI.B.3.

v. Characterization of Arsenic Risk Results

Several commenters were concerned that although EPA found risks from arsenic that are within its discretionary range for listing EDC/VCM wastewater treatment sludges, EPA did not include arsenic as a basis for the listing determination and the contingent management listing for EDC/VCM wastewater treatment sludges allows this waste to be managed in landfills despite our risk assessment results for arsenic.

EPA evaluated potential risks from arsenic resulting from both landfill management of EDC/VCM wastewater treatment sludges and management of the waste in a land treatment unit. In the case of the landfill scenario, risk assessment results showed a high-end risk from arsenic from a groundwater ingestion exposure pathway, to be 3E–05. However, this potential risk level is predicted to occur only after a very significant period of time. Our modeling results indicate that, after a period of 8,800 years, the disposal of EDC/VCM sludge in an *un*lined landfill would result in an increase in the concentration of arsenic in groundwater in a down gradient well (102 meters from the landfill) by only 1.4 ug/L and would add approximately 2 ug/day of arsenic to the average daily exposure level (about 20 ug/day) for the highly exposed individual.

Given these predicted circumstances, we conclude that the risks from arsenic for the landfill scenario are not significant for several reasons. The predicted risks levels are associated with a peak arsenic concentration in a receptor well that is estimated to occur only after a very long period of time. In addition, the predicted high-end arsenic concentration at a receptor well (1.4 ppb) is very close to the median arsenic background concentration of 1.0 ppb found in groundwater in Texas and Louisiana.[33] The predicted high-end

[33] Focazio, M.J., Welch, A.H., Watkins, S.A., Helsel, D.R., and Horn, M.A., 1999, A Retrospective Analysis on the Occurrence of Arsenic in Ground-

Continued

arsenic concentration also is well below the current maximum contaminant level (MCL) allowed for arsenic in drinking water and below the revised MCL for arsenic recently-proposed by EPA's Office of Ground Water and Drinking Water. The current MCL for arsenic is 50 ppb, the revised MCL proposed by EPA is 5 ppb (65 FR 38888).

Given that the estimate of potential risk for arsenic is within the range of risk levels in which the Agency exercises discretion with regard to a listing decision (i.e., predicted risk levels are less that 1E–04), the Agency's established policy provides that it may take into account other factors affecting the potential risk associated with the waste in making its listing determination. The risk estimate for arsenic in EDC/VCM wastewater treatment sludges managed in landfills is the result of predicted concentrations of arsenic that are close to background levels, do not exceed the MCL in the modeled receptor well, and the result of a peak arsenic concentration in a receptor well that is predicted to occur only after a period of 8,800 years. Given that there are uncertainties associated with our risk estimates we do not think it makes sense to impose requirements now to address a marginal risk that may be realized so far in the future. In addition, even if the arsenic concentrations predicted to occur very far in the future were to occur now, these concentrations are not at levels of concern, given that the peak concentration of arsenic in groundwater is predicted to be below the current (and all recently proposed) MCL(s). Therefore, EPA concludes that EDC/VCM wastewater treatment sludges do not pose a significant risk due to the presence of arsenic when managed in landfills.

In the case of the potential risks associated with arsenic in EDC/VCM wastewater treatment sludges managed in a land treatment unit, we found that arsenic may present some risk from potential releases to groundwater from the land treatment unit. However, we conclude that the estimated level of potential risk is not significant for the very same reasons we concluded that the risk from arsenic in a landfill scenario is not significant (*i.e.,* predicted concentrations of arsenic in groundwater wells is close to background levels, and is the result of a peak arsenic concentration in a receptor well that is predicted to occur only after a long period of time). The Agency concludes that the risk posed from potential releases of arsenic in this wastestream does not warrant listing the waste as hazardous. However, in the case of the land treatment unit scenario, the Agency determined that the waste should be listed as a hazardous waste based upon the potential risks associated with dioxin concentrations found in the waste. The Agency therefore is listing EDC/VCM wastewater treatment sludges based solely on the presence of dioxin and the potential risk associated with dioxin when this waste is managed in a land treatment unit.

vi. Regulatory Compliance Demonstration

Two commenters were concerned that the proposed conditional listing approach for EDC/VCM wastewater treatment sludges would be burdensome to generators due to commenters' view that the proposal required generators to document their ''intent'' to properly manage and dispose of the waste. In response, the Agency notes that we are not imposing any new paperwork requirements as part of the conditional listing. In the final listing determination, the Agency is requiring that generators and other handlers of EDC/VCM wastewater treatment sludges merely be able to demonstrate that past and on-going waste management practices are in compliance with the conditions of the contingent management listing approach. Our intent in describing potential types of records or contracts that could fulfill the demonstration requirement was merely to provide examples of appropriate demonstrations, and not to impose stringent or specific paperwork requirements. As explained above, the Agency is finalizing, as part of the listing description, a flexible performance standard similar to the documentation requirement provided in 40 CFR 261.2(f) for documenting claims that materials are not solid wastes, when managed in certain ways. Generators and other handlers of EDC/VCM wastewater treatment sludge that claim the waste is not a hazardous waste must merely demonstrate that the generator or handler has handled the waste or intends to handle the waste in compliance with the conditions of the conditional listing. One manner in which this demonstration may be made is by presenting a copy of a signed contract between the generator and a state-licensed landfill under which the landfill agrees to accept the EDC/VCM waste. Again, in cases where such a contract does not exist, other documentation of past and on-going disposal practices such as signed non-hazardous waste manifests, shipping papers, and/or invoices may provide an appropriate demonstration of proper management. The Agency points out that a generator's or handler's ability to demonstrate recent and/or on-going shipments of EDC/VCM wastewater treatment sludges to appropriate disposal facilities will serve as sufficient demonstration of their intent to continue such management practices for wastes being appropriately stored on-site (i.e., stored in a manner that does not involve direct placement of the waste on the land) prior to off-site disposal and not yet offered for off-site shipment.

vii. Status of EDC/VCM Sludges Managed by Methods Other Than Land Treatment and Landfilling

Incineration

Several commenters requested that EPA include incineration of EDC/VCM wastewater treatment sludges as a contingent management option for this waste. Commenters argued that incineration should be allowed to occur without the sludge falling within the scope of the listing description (*i.e.,* commenters requested that EPA allow the incineration of EDC/VCM wastewater treatment sludges as non-hazardous wastes).

The Agency disagrees with the commenters. First, the Agency notes that commenters provided no information indicating that incineration of presently non-hazardous EDC/VCM sludges is occurring and indicated only that they were considering the practice. Some commenters stated specifically that they currently do not incinerate presently non-hazardous EDC/VCM wastewater treatment sludges. Information available to the Agency during development of the proposed rule indicated that there were no facilities presently incinerating non-hazardous forms of the waste, and EPA did not evaluate potential risks from on-site or off-site incineration of EDC/VCM wastewater treatment sludges in non-hazardous waste incinerators. EPA bases listing determinations on an assessment of plausible (and worst-case) management scenarios. It is not practicable for EPA to evaluate every possible management scenario, and particularly not those management practices that are found not to be plausible (or are hypothetical). This is consistent with the Agency's mandate to evaluate determine whether or not to list wastes, and not management practices. EPA does carve out particular

---

water Resources of the United States and Limitations in Drinking-Water-Supply Characterizations: U.S. Geological Survey Water-Resources Investigation Report 99–4279, 21 p.

waste management practices in certain circumstances (*e.g.*, here, where there is a widespread practice we have modeled fully), but we cannot possibly evaluate every practice, particularly hypothetical practices, that any commenter says they might employ.

Our policy with regard to hazardous waste listings is that in cases where we have identified one plausible management practice that presents a significant risk to human health and the environment (in this case, land treatment), the waste warrants being listed as a hazardous waste. However, since the Agency identified another plausible management approach (landfill), evaluated the risk from this management approach, and determined that the second management approach does not present a significant risk to human health and the environment, the Agency determined that it is appropriate to exclude the waste from the hazardous waste listing, when managed in this particular manner. Without evaluating potential risks from additional management approaches, the Agency cannot determine whether or not the waste, when managed in a different manner, warrants being excluded from the hazardous waste listing. Given that EDC/VCM wastewater treatment sludges currently are not managed in non-hazardous waste incinerators, we have not used the limited time and resources we have for the rulemaking to conduct an analysis of potential risks associated with this potential management practice. Therefore, we do not have a basis to exclude sludges managed in this manner from the listing description. Should the Agency receive information in the future indicating that non-hazardous waste incineration is occurring, the Agency may re-visit the decision to preclude the management of these sludges in non-hazardous waste incinerators. However, given that these sludges contain dioxin, EPA would want to carefully consider the potential risks of managing these wastes in non-hazardous waste incinerators, before concluding that this practice does not pose a risk.

The final rule, as promulgated in today's notice, provides that EDC/VCM wastewater treatment sludges are listed hazardous wastes, unless the sludges are disposed in a subtitle C landfill or a non-hazardous waste, state-licensed landfill and are not placed on the land prior to final disposal in a landfill. Under the conditional listing, the incineration of EDC/VCM wastewater treatment sludges in a non-hazardous waste incinerator and the disposal of the ash in a landfill does not meet the conditions of the listing. EDC/VCM wastewater treatment sludges destined for incineration are hazardous wastes (*i.e.*, are K174).

EDC/VCM Wastewater Treatment Sludges Derived From the Management of Chlorinated Aliphatic Wastewaters in Surface Impoundments

As mentioned above, at the time of the proposed rule EPA was not aware that any chlorinated aliphatic production facility was managing chlorinated aliphatic wastewaters in surface impoundments, or potentially generating EDC/VCM wastewater treatment sludges in surface impoundments. However, the Agency received information from public comments indicating that one chlorinated aliphatic manufacturing facility produces VCM and sends its process wastewaters to an adjacent facility, where the VCM wastewater is combined with other non-chlorinated aliphatic wastewaters for treatment in surface impoundments. The commenter described the type of treatment occurring in these impoundments to include biological treatment followed by clarification; therefore, we presume wastewater treatment sludges are generated in these impoundments. Because these wastewater treatment sludges are the result of treating wastewaters from the production of VCM, they will meet the definition of today's K174 hazardous waste listing on the effective date of today's rule.

The listing description for EDC/VCM wastewater treatment sludges finalized in today's rulemaking includes sludges that are placed on the land prior to final disposal in a landfill. EPA's long-standing policy under RCRA subtitle C is that wastes generated in surface impoundments are subject to regulation while actively managed in the impoundment (not just when the sludges are removed from the unit) (see 45 FR at 72024; 55 FR 39409; 55 FR 46380). Therefore, sludges resulting from treating wastewaters from the production of EDC/VCM after the effective date of today's rule, when actively managed in surface impoundments in which they are generated, fall within the scope of today's listing determination for EDC/VCM wastewater treatment sludges (K174).

With regard to the regulatory status of surface impoundments used to treat EDC/VCM wastewaters prior to the effective date of the today's rule, EPA has articulated in prior rulemakings certain circumstances where a surface impoundment, in which newly-regulated wastes were generated prior to the effective date of the listing, would not become subject to subtitle C management standards (see 55 FR 39410 and 55 FR 46380). In the November 2, 1990 rulemaking finalizing the hazardous waste listings for F037 and F038, EPA provided that in cases where wastes become defined as hazardous as a result of new listing determinations, if the wastes are removed from the impoundment prior to the effective date of the rule defining them as hazardous, then the impoundment does not become subject to Subtitle C.

In the **Federal Register** notice published on September 27, 1990, EPA clarified the regulatory status of surface impoundments containing sludges newly defined as hazardous that were deposited in an impoundment prior to the effective date of the rule defining the waste as hazardous, and where the impoundment ceased to receive hazardous wastes on or before the effective date of the rule. In that notice, EPA stated: If (1) the newly identified hazardous waste remains in the surface impoundment after the effective date of the rule, and (2) the impoundment does not receive or generate any other hazardous wastes after the effective date, and (3) the impoundment is the final disposal site for the waste, then the impoundment is not subject to RCRA subtitle C. Additionally, the Agency clarified that if newly-listed wastes are removed from an impoundment as part of a one-time removal, including a one-time removal after the date on which the waste becomes defined as hazardous, the impoundment will not be subject to RCRA subtitle C. The Agency also clarified in the September 27, 1990 rulemaking that EPA will not view the one-time removal of waste as part of a closure as changing the status of the surface impoundment (*i.e.*, subjecting the impoundment to RCRA subtitle C), as long as there is no ongoing management of the waste in the impoundment after the effective date of the hazardous waste listing.

Therefore, if a facility ceases to manage EDC/VCM process wastewater sludge in surface impoundments prior to the effective date of today's listing determination, and the facility undertakes a one-time removal of the newly-listed waste, the surface impoundment will not be subject to RCRA subtitle C. The sludges removed from an impoundment as part of a one-time removal after the effective date of today's listing (that were derived from the previously managed chlorinated aliphatic wastewaters), will be defined as K174, unless the waste meets the conditions for exclusion from the hazardous waste listing. If the sludge does meet these conditions (*i.e.*, it is

disposed in a subtitle C landfill or a non-hazardous waste landfill permitted or licensed by a state, and it is not placed on the land other than in such a landfill after it is removed from the impoundment), it will be exempt from the listing. After the one-time removal of sludge generated from the chlorinated aliphatic wastewaters, and as long as no additional chlorinated aliphatic wastewaters are managed in the impoundment, sludges generated in the impoundment will not meet the listing description for K174. In other words, the impoundment would not become regulated. In addition, sludges removed in subsequent removals (*e.g.*, as part of routine maintenance activities) will not be considered EDC/VCM wastewater treatment sludge (K174), as long as chlorinated aliphatic wastewaters were not managed in the impoundment after the effective date of the rule.

The above discussion pertains to facilities that choose to continue operating their surface impoundments as non-hazardous waste units after the effective date of today's rule. However, a facility could choose to continue to manage chlorinated aliphatic wastewaters in surface impoundments after the effective date of today's rule. In this case, the sludge generated in the impoundments will meet the K174 listing description and the surface impoundments will become subject to RCRA subtitle C. Any newly listed EDC/VCM wastewater treatment sludges that are managed in a newly regulated surface impoundment (i.e., an impoundment that becomes subject to RCRA regulation as a result of the new waste listing) may continue to be managed in the impoundment for up to four years, provided that the impoundment is in compliance with the groundwater monitoring requirements of 40 CFR part 265, Subpart F within 12 months after promulgation of the new waste listing (40 CFR part 268.14).[34] Surface impoundments also may continue to treat wastes that do not meet LDR treatment standards if the surface impoundments are in compliance with 40 CFR 268.4 (the surface impoundment exemption), or if facilities obtain no-migration variances for the units (40 CFR 268.6, 264.221(b), 265.221(c)). Under the surface impoundment exemption, owners or operators must follow specific sampling and testing, removal, subsequent management, and recordkeeping requirements. Some impoundments may be granted a delay of closure (see 40 CFR 265.113 and 40 CFR 264.113) and thus will be allowed to remain in operation, providing that hazardous waste is removed and the impoundment is used for non-hazardous wastes (see section VIII.B for a discussion of permitting requirements and compliance dates applicable to the management of newly-listed wastes). Facilities that currently manage EDC/VCM wastewater treatment sludges in surface impoundments must meet the terms of these regulations or discontinue their use for the management of these sludges prior to the effective date of the listing and land disposal restrictions.

viii. Contingent Management Approach

A few commenters asserted that a contingent management approach to listing EDC/VCM wastewater treatment sludges is not appropriate. Commenters pointed out that such an approach would allow the waste to be land disposed without treatment in compliance with the land disposal restrictions requirements. One commenter stated that RCRA does not provide EPA with the statutory authority to list a waste as hazardous on the basis of how the waste is or is not managed. Another commenter stated that the management process should not decide whether a waste is hazardous or not. The commenter further stated that waste management practices only should ensure that the waste is properly treated.

Given the Agency's finding (discussed in Section VI.B.1. of this preamble) that the predominant approach for managing EDC/VCM wastewater treatment sludges does not pose a substantial hazard to human health and the environment, we see no reason to include sludges managed in this manner in the scope of the hazardous waste listing. In fact, the Agency knows of only two facilities that manage these sludges in a manner other than landfilling. It does not make sense to list the bulk of EDC/VCM wastewater treatment sludges managed safely in landfills based upon the management approaches used by two facilities. On the other hand, we do not believe that it is appropriate to promulgate a no-list determination, given the Agency's finding (discussed in Section VI.B.1. of this preamble) that EDC/VCM sludges pose a substantial hazard to human health and the environment when managed in a land treatment unit. Therefore, the Agency is promulgating a contingent management listing to ensure that EDC/VCM wastewater treatment sludges are managed only in a manner that EPA has shown does not pose a substantial hazard to human health and the environment.

Because the Agency has made a finding that the waste does not pose a substantial hazard to human health and the environment if disposed in a landfill, without being treated prior to disposal, we do not agree with commenters' regarding the necessity of imposing treatment requirements under RCRA subtitle C. Our finding that treatment is not necessary to insure protection of human health and the environment is a major factor supporting the contingent management approach. In addition, the land disposal restrictions apply to hazardous wastes only. Since the Agency has determined that EDC/VCM wastewater treatment sludges, when managed in a landfill, are not hazardous wastes, the treatment standards are not necessary to ensure protection of human health and the environment.

A contingent management listing approach is within EPA's statutory authority. Section 3001(a) requires the Administrator to promulgate criteria for identifying and listing wastes that ''should'' be subject to the requirements of RCRA. The word ''should'' in section 3001(a) calls for an exercise of judgment and, therefore, confers discretion upon EPA to determine whether listing is warranted. RCRA sections 3002, 3003 and 3004 direct the Agency to issue regulations ''necessary to protect human health and the environment.'' Accordingly, the decision whether a waste should be regulated under RCRA turns upon EPA's assessment of whether such regulation is necessary to protect human health and the environment. Because a hazardous waste is by definition a solid waste that poses ''a substantial threat to human health and the environment when improperly treated, stored, transported, or disposed of, or otherwise managed,'' (RCRA section 1004(5)) EPA concludes that where a waste might pose a hazard only under limited management scenarios, and other regulatory programs already address such scenarios, the Agency is not required to list a waste as hazardous.

The Agency's decision with regard to whether a waste should be regulated under subtitle C turns upon EPA's assessment of whether RCRA regulation is necessary to protect human health and the environment. In particular, in *Military Toxics Project* v. *EPA*, 146 F.3d 948 (D.C. Cir. 1998) the court found that, if EPA concludes that a waste might pose a hazard only under limited management scenarios, EPA can reasonably and permissibly determine that the waste should be regulated as

[34] RCRA § 3005(j)(6) provides that facilities managing wastes in surface impoundments that are newly brought into the subtitle C system by a new listing or characteristic have four years to retrofit or close impoundments receiving newly identified or listed wastes (and no other hazardous wastes).

hazardous only under those scenarios. In the Military Toxics Project case, EPA reasonably determined that waste munitions would not pose a hazard if managed in accordance with existing military munitions handling regulations. Similarly, with regard to EDC/VCM wastewater treatment sludges in today's rulemaking we have reasonably determined that the waste will not pose a hazard if managed in hazardous waste landfills or non-hazardous waste landfills licensed or permitted by a state. We base this conclusion on the results of the Agency's risk assessment and in view of existing state and federal controls for non-hazardous waste landfills. We note that the finding by the court in Military Toxics Project did not hinge upon EPA deferring to a comprehensive regulatory program, but only to programs that address the appropriate waste management scenarios in a manner that EPA determined is necessary to protect health and the environment. Given the results of the Agency's risk assessment, we find that the management of these wastes in non-hazardous waste landfills licensed or permitted by a state is protective of human health and the environment. On the basis of this conclusion and in light of the Military Toxics Project decision, we conclude that EPA has the authority to promulgate a conditional listing for this waste.

3. Rationale for Final Listing Determination: Summary of the Impact of Public Comments on the Proposed Listing Determination for EDC/VCM Wastewater Treatment Sludges

The Agency decided to finalize a contingent management listing for EDC/VCM wastewater treatment sludges based on the EPA's finding that these wastes posed a substantial hazard to human health and the environment when managed in a land treatment unit, but did not pose this hazard when managed in a landfill. As discussed above, commenters argued that EPA's risk estimates for the landfill and land treatment unit were in error. After reviewing and carefully considering all information provided by commenters, we re-evaluated our risk assessment results. Based on information provided by commenters, we decided it was appropriate to adjust our proposed risk estimate, 2E–04, for the land treatment unit. As mentioned above in response to a commenter's concerns regarding the expected productivity of EPA's modeled agricultural field, EPA's risk estimate for the land treatment unit almost entirely was due to a farmer's ingestion of beef and dairy products from cattle that consume dioxin-contaminated forage and pasture soil. That is, the risk estimate is 2E–04 even when the portion of risk associated with cattle consumption of grain and silage are eliminated. Correcting the risk estimate to account for both cooking and post-cooking loss of beef and an overestimate of risk attributable to the erosion pathway analysis would reduce the risk estimate to 1E–04. Accounting for a more reasonable pasture size would reduce this risk estimate (1E–04) to approximately 7E–05. Moreover, adjusting the TCDD slope factor downward as recommended by the commenter, and removing 1,2,3,6,7,9- and 1,2,3,7,8,9-HxCDD from the risk assessment *completely,* would reduce this risk estimate only to 5E–05. Although EPA does not support making these adjustments to the toxicity values, doing so demonstrates that accepting the commenter's recommendation would not reduce the risk estimate to a value that, after consideration of other factors as described in Section VI.B.1. of this preamble, would change the Agency's finding that these wastes pose a substantial hazard to human health and the environment. Our analysis of the comments did not reveal any justification for modifying our proposed risk estimate for the landfill scenario.

Therefore, the Agency is listing EDC/VCM wastewater treatment sludges as EPA Hazardous Waste Number K174, unless the sludges are managed in a subtitle C landfill, or a non-hazardous waste landfill permitted or licensed by a state. The Agency believes that allowing the waste to continue to be managed under a low risk management scenario (i.e., non-hazardous waste landfilling) outside of the subtitle C system achieves protection of human health and the environment, and that little additional benefit would be gained by requiring that all EDC/VCM wastewater treatment sludges be managed in accordance with RCRA subtitle C management standards. Given the Agency's finding that the level of risk posed from managing EDC/VCM wastewater treatment sludges in a landfill is not at a sufficient level to support a hazardous waste listing determination, the Agency sees no reason to include sludges managed in this manner in the scope of the hazardous waste listing. Additionally (and after consideration of the predicted risk differential between land treatment and landfilling), because only one facility employs land treatment for these wastes, this practice is somewhat anomalous compared with land disposal. It does not make sense to apply a traditional listing approach (i.e., list all wastes regardless of management practice) based upon a practice occurring at one facility, especially if a more tailored listing can prevent potential risks from the practice.

Under the contingent management listing approach finalized today for EDC/VCM wastewater treatment sludges, EDC/VCM sludges will be hazardous wastes unless they are disposed in a landfill. EDC/VCM wastewater treatment sludges that are handled in compliance with the contingent management approach will be considered nonhazardous from the point of generation. Such sludges will not be subject to RCRA subtitle C management requirements for generation, transport, or disposal (including the land disposal restrictions), if the waste is destined for disposal in a landfill and is not placed directly on the land prior to disposal in a landfill. If the waste is not disposed of in a subtitle C landfill or a state-licensed non-hazardous waste landfill, then the waste meets the listing description and must be managed in compliance with subtitle C management standards from the point of generation.

In addition to requiring that EDC/VCM wastewater treatment sludges be disposed in a subtitle C landfill or a state-licensed landfill to meet the contingent management listing, the Agency also is restricting the placement of EDC/VCM wastewater treatment sludges directly on the land prior to disposal in a landfill (*e.g.,* storage in surface impoundments, storage in waste piles, spills). EPA wants to ensure that these wastes are managed in the manner found to be protective of human health and the environment. Under the terms of the listing, storage of EDC/VCM wastewater treatment sludge in tanks or containers, or in any manner other than direct placement on the land, prior to disposal will not constitute a violation of the conditions for exclusion from the hazardous waste listing.

Generators, and other parties involved in the management of EDC/VCM wastewater treatment sludges, claiming that their wastes fall outside the scope of the hazardous waste listing must be able to document or demonstrate that sludges excluded from the listing description are being managed in accordance with the conditions for being excluded from the listing. This means that parties claiming the waste falls outside the scope of subtitle C must be able to demonstrate that (1) previously generated and managed waste (which is being claimed as not meeting the K174 listing) was disposed of in a landfill; and (2) waste currently

being managed is not being stored, or otherwise managed, on the land (*e.g.,* waste piles, surface impoundments) as well as demonstrate that the waste is disposed of in a landfill. We note that the Agency is not imposing any specific recordkeeping requirements as part of today's final rule. Instead the Agency is finalizing, as part of the listing description, a more flexible performance standard similar to the documentation requirement provided in 40 CFR 261.2(f) for documenting claims that materials are not solid wastes. Generators and other handlers of EDC/VCM that claim the waste is not a hazardous waste must merely demonstrate that the generator or handler has, and continues to handle the waste in compliance with the contingent management conditions. One of the simplest ways to make such a demonstration may be to provide a compliance or enforcement official, upon request, with a copy of a signed contract with a state-licensed landfill. In cases where such a contract does not exist, other documentation of past and on-going disposal practices such as signed non-hazardous waste manifests, shipping papers, and/or invoices should provide an appropriate demonstration of proper management. The Agency points out that a generator's or handler's ability to demonstrate recent and/or on-going shipments of EDC/VCM wastewater treatment sludges to appropriate disposal facilities will serve as sufficient demonstration of intent to continue such management practices for wastes being stored on-site in tanks or containers (or in any other manner other than direct placement on the land) and not yet offered for off-site shipment.

The Agency points out that should EDC/VCM wastewater treatment sludges meet a listing description for another listed hazardous waste, or if the wastewater treatment sludges exhibit one or more of the characteristics of hazardous waste, the sludges must be managed as hazardous wastes and are not exempt from regulation, due to the fact that they may be characterized as EDC/VCM wastewater treatment sludge.

C. Wastewater Treatment Sludges and Wastewaters From the Production of VCM–A

1. Wastewater Treatment Sludges From VCM–A Production

The EPA is listing as hazardous wastewater treatment sludge from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process (VCM–A). This wastestream meets the criteria set out at 40 CFR 261.11(a)(3) for listing a waste as hazardous because it may pose a substantial or potential hazard to human health or the environment. The Agency identified significant potential risks to consumers of groundwater due to the release of mercury from this waste when managed in a landfill. We are not promulgating the proposed alternative option of conditionally listing this waste (*i.e.,* listing the waste only if it is not managed in a subtitle C landfill) because after reviewing comments we remain convinced that the current management practice of disposing of untreated forms of this waste in a subtitle C landfill, even after taking into account landfill controls, can pose significant risk as explained in more detail below.

K175—Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.

In the August 25, 1999 **Federal Register** we proposed to list VCM–A wastewater treatment sludge due to the potential risk from consuming groundwater containing concentrations of mercury, arising from the landfill disposal of the VCM–A sludge, that exceed the Maximum Contaminant Limit (MCL).[35] At proposal, we considered risks arising from both an unlined landfill disposal and a subtitle C landfill disposal management scenario, because at that time we believed both scenarios were plausible forms of managing this waste. Under the unlined landfill scenario, we used the mercury TCLP analytical results for the VCM–A sludge (0.26 mg/L; facility split sample was 0.654 mg/L) and calculated a predicted groundwater concentration at a receptor well using a dilution and attenuation factor (DAF) of 40.[36] The predicted receptor well groundwater concentration exceeded the mercury MCL by a factor of three based on a mercury leachate concentration of 0.26 mg/L (obtained from a sample of the waste analyzed by EPA), and by a factor of eight using the mercury leachate concentration from the facility's split sample of 0.654 mg/L (64 FR at 46510).

Under the subtitle C landfill scenario, we took into account additional information regarding the increased mobility of mercuric sulfide (the form of mercury in the VCM–A sludge) under higher pH environments, and the degree to which subtitle C landfill controls (e.g., liner systems) would have to perform to prevent releases that exceed the MCL in groundwater at a modeled receptor well (64 FR at 46511). We documented that the pH measured in leachate from the subtitle C disposal cell where this waste is currently managed is greater than 9, which is in all likelihood due to the presence in the landfill of alkaline materials commonly used to stabilize many types of hazardous wastes. We also cited analytical results from a draft treatability study on the VCM–A waste, indicating that mercuric sulfide is less stable in a higher pH environment, and that the leachate resulting from a constant pH leach test at pH=10 contained 1.63 mg/L of mercury. We concluded that mercury in the VCM–A waste would be significantly mobilized under the conditions found in the subtitle C landfill scenario, and at proposal we said that ''* * * even assuming a low probability of [liner] failure * * * there may still be a release of mercury that results in an accedence of the MCL. While there are uncertainties in this assessment, it still illustrates that the mercury concentrations in the receptor well may be close to, and could even be higher than the MCL'' (64 FR 46511). In other words, with a leachate concentration of 1.63 mg/L at pH=10 and a DAF of 40, the modeled receptor well mercury concentration is 0.041 mg/L when no credit is given to the liner system (*i.e.,* assuming an unlined landfill). Assuming that no mercury is released to groundwater if a liner system is 100% effective, one only has to reduce the ''effectiveness'' of the subtitle C liner system by a small margin, to 95%, to predict a mercury concentration in a modeled receptor well equal to the MCL for mercury.[37] The issue of the uncertainty with engineered liner systems is discussed in more detail further below.

Therefore, we presented at proposal two plausible management scenarios upon which we based our proposed listing, an unlined landfill and a subtitle C landfill. As discussed below in section VI.C.1.a, because we received information after proposal indicating that the unlined landfill scenario was not plausible, our final decision today to list the VCM–A sludge as hazardous is based only upon the subtitle C landfill scenario described above.

[35] The Maximum Contaminant Level Goal (MCLG) for mercury is 0.002 mg/L because EPA has determined that drinking water below this level of protection would not cause any adverse health effects. The MCL for mercury is also 0.002 mg/L, and is an enforceable standard set as close to the MCLG as possible, considering the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

[36] As noted at proposal, the DAF of 40 for mercury was developed for the 1995 proposed Hazardous Waste Identification Rule (60 FR 66344, December 21, 1995) for landfill leachate.

[37] (0.05)(0.041 mg/L) = 0.002 mg/L

a. Response to Major Comments Received on Proposed Rule for VCM–A Wastewater Treatment Sludges

VCM–A sludge is generated by only one facility in the United States, Borden Chemical and Plastics (BCP) in Geismar, Louisiana; therefore, the industry comments relating directly to this waste stream were from BCP. Environmental groups and waste treatment industry representatives also commented on the EPA's proposal to list this wastestream as hazardous.

i. Risk Assessment Submitted by BCP

In response to the Agency's proposed decision to list wastewater treatment sludges from the production of VCM–A, BCP provided the Agency with a groundwater pathway exposure and risk analysis for mercury in VCM–A wastewater treatment sludges managed in landfills, conducted by a contractor on their behalf. BCP concludes, based upon their risk assessment, that there would be no human health risks to consumers of groundwater resulting from releases of mercury from VCM–A waste managed in a landfill.

BCP's analysis was designed to parallel the manner in which EPA conducts contaminant fate and transport modeling when evaluating landfills. Specifically, BCP stated that its ''methods and assumptions followed to the extent possible those presented in [EPA's] Chlorinated Aliphatics Risk Assessment document when feasible.'' However, rather than using EPA's groundwater fate and transport model, EPACMTP, BCP's analysis used a simpler analytical groundwater transport model, AT123D. This model is not specifically designed to simulate leachate migration from land disposal units; although, when used appropriately, AT123D should be able to produce results that are protective and comparable to those obtained with EPACMTP. However, after carefully reviewing the risk assessment submitted by BCP, EPA found that there are significant deficiencies associated with certain aspects of the modeling and risk assessment and therefore is not persuaded by the conclusions drawn from BCP's analysis. These deficiencies are described below:

- EPA's most significant concern regarding the way in which BCP conducted its groundwater modeling is that BCP limited the period of time that the contaminant plume is allowed to migrate to 70 years from the time mercury was introduced into the groundwater. BCP's assumption has the effect of considering only exposure and hazard to current receptors and ignores potential hazard to future generations. In fact, in the case of release of leachate from a landfill, the greatest risk is often to future generations. This is because wastes initially are accumulated in landfills for many years prior to landfill closure, then, subsequent to landfill closure, leachate generation and migration in groundwater can occur for additional tens, hundreds, or thousands of years.
- EPA disagrees with the way that BCP considered the area of the landfill in its modeling efforts. Although the area of the waste management unit is not input directly into the AT123D model employed by BCP, the model does require an equivalent source length and width. In its analysis, BCP modeled an areal source with an area of one meter by one meter, and a depth (thickness) of 6 meters. The analysis submitted by BCP does not provide the area of the actual landfill in which the VCM–A sludge is disposed, but a source area equal to 1 m^2 does not represent a realistic landfill size, since industrial landfills are typically on the order of 50,000 to 100,000 m^2. Moreover, a landfill of the size modeled by BCP (6m^3) would not be large enough to contain the quantity of sludge that we estimate BCP generates in 1 year, 109m^3), let alone the quantity we estimate BCP might generate over a 30 year period (3,273m^3).
- In its AT123D modeling efforts, BCP assumed an aquifer hydraulic conductivity of 1E–04 centimeters per second (cm/s). The median hydraulic conductivity value that we would have selected to correspond to the location of the landfill where BCP disposes of their waste is 8E–03 cm/s.[38] In the context of BCP's analysis, it does not appear that the hydraulic conductivity value used was protective. On the contrary, BCP's conclusion that: ''* * * in the 70-year time span evaluated, mercury would move no further than between approximately 37–46 meters * * *.'' was supported in part through use of a hydraulic conductivity value that was 80 times less than the median hydraulic conductivity value that EPA would have selected, potentially resulting in an underestimate of the predicted groundwater flow rate. This could result in a significant underestimation of predicted contaminant migration.
- The value BCP used for the parameter that defines the dispersion of the contaminant plume (the dispersivity) was unrealistically large for the transport distances that BCP evaluated. Dispersion causes a contaminant plume to spread both ahead of the bulk flow of groundwater (longitudinally) and perpendicular to the bulk flow of groundwater (transversely and vertically). The effect of dispersion is to cause the leading edge of the plume to travel more rapidly and spread more widely than the bulk (average) groundwater flow. Dispersion also will cause the plume to become more diluted due to mixing with ambient (uncontaminated) groundwater. This dilution effect will be most pronounced at the periphery of the plume. BCP's methodology for estimating dispersivity was based on designating where the concentration value for the plume will be measured (that is, the location of the receptor well) and calculating an appropriate dispersivity value for that location, since dispersivity increases with distance from the source. Accordingly, BCP calculated dispersivity values corresponding to the location of a receptor well 152 meters from the landfill source. EPA acknowledges that this approach is consistent with generally accepted practices, and does not disagree with the approach in principle; that is, the dispersivity values used in BCP's modeling would have been appropriate to characterize the effect of hydrodynamic dispersion on plume concentrations at the location of the designated receptor well (152m from the source). BCP's error occurred when they elected to use the modeled concentration at a distance of 37m (the predicted leading edge of the contaminant plume) as the basis for their calculation of mercury hazard. BCP did not modify their estimate of plume dispersion to correspond to a closer distance to the source. By not correctly accounting for distance from the source, BCP's groundwater modeling analysis significantly overestimated the effect of dispersion at the edge of the plume, and the resulting dilution of the plume due to dispersive mixing. Consequently, the mercury concentration (and associated hazard) that BCP predicted to correspond to the edge of the plume was much lower than it would have been had they accurately estimated dispersion. More appropriately, BCP should have extended their modeling timeframe, as discussed above, such that they could have more accurately predicted contaminant concentrations at their designated receptor well distance.

BCP concluded from their analysis that essentially no migration of mercury would occur in groundwater, and that mercury concentrations in groundwater are below levels of concern. Because BCP limited their analysis to the evaluation of current receptors, potentially underestimated the hydraulic conductivity of the aquifer, overestimated aquifer dispersivity, and grossly underestimated the area of the landfill, EPA does not believe BCP's risk analysis can be used to support a listing decision for VCM–A sludge.

ii. Plausibility of Unlined Landfill Management Scenario

In the proposed rule, EPA stated that disposal of Borden's VCM–A sludge in a non-hazardous, unlined landfill was plausible, based upon gaps in the record, particularly prior to 1990. BCP commented that in all of the time it had responsibility for the operation of the VCM–A plant (which records indicate is since the early 1980's) Borden always managed its VCM–A sludge at a facility that was ''constructed and operated in

[38] The source of our hydraulic conductivity data is a database prepared by the American Petroleum Institute (Newell, Charles J., Loren P. Hopkins, and Philip B. Bedient, 1989. Hydrogeologic Database for Ground Water Modeling. API Publication No. 4476, American Petroleum Institute, Washington, D.C.). The range of values from which the median is derived is 1E–05 to 4E–01 cm/s.

accordance with the hazardous waste regulations that existed at the time of disposal.'' Upon consideration of BCP's claim that the specific inventory of VCM–A waste, cited by EPA as having been stored on site in 1985, was in fact disposed of as hazardous waste between March and May of 1985, there is no evidence the waste has ever been disposed of in an unlined, non-hazardous landfill. Moreover, given BCP's record of disposal of this waste in a hazardous waste landfill during the 1990's, and its comments that this is where BCP will continue to send the waste in the future, we see no compelling information to suggest the company would do otherwise. Accordingly, we agree that disposal in an unlined landfill is not plausible.

iii. Constant pH Leach Results Versus TCLP

BCP took issue with our overall approach to determining that the VCM–A waste poses significant risk when mismanaged. Specifically, BCP disagreed with EPA's assertion that the VCM–A waste, which is in the form of mercuric sulfide, leaches mercury more readily at higher pH conditions. In particular, BCP criticized our reliance on the results of a preliminary EPA-sponsored study [39] indicating (using only one sample) a leachate concentration for mercury at 1.63 mg/L at pH=10, and that the pH conditions of the landfill cell where this waste is presently disposed indicate an elevated pH as well (pH=9.48 to 9.7 as reportedly measured in the leachate collected from this landfill cell). Furthermore, BCP questioned our application of these analytical results to the circumstances surrounding the disposal of the VCM–A waste. BCP also argued that it appears that because we stated in the proposed rule that the TCLP may not be a reliable indicator of mercury mobility under these conditions, that EPA has ''invalidated its own regulatory procedures for this particular [waste] stream'' by relying on the waste-specific pH results discussed above, instead of relying on the existing TCLP method for defining whether or not the VCM–A sludge is hazardous. BCP was concerned that EPA's reliance on a waste-specific approach to determining the hazard of the VCM–A waste, rather than relying instead on the existing toxicity characteristic to determine hazardousness, was an ''unconventional method to single out this particular waste stream'' and was therefore arbitrary and capricious. BCP is arguing that it is inappropriate for EPA to assess the hazard of mercury in a waste when there is already an existing toxicity characteristic for mercury, and that by doing so for one specific waste EPA is selectively ''changing the rules'' for that waste.

EPA disagrees with BCP's comment that EPA should rely on the existing TCLP, and that doing otherwise unfairly or inappropriately singles out its waste. First, because EPA has undertaken a listing determination for a certain category of wastes (chlorinated aliphatic wastewater treatment sludges), and has further identified VCM–A sludge as a reasonable subcategory due to the markedly different manufacturing process from which the waste is generated, it is entirely reasonable for us to assess the hazards of this specific waste in the context of this listing determination. The fact that only one facility in the United States currently is generating the waste in this subcategory is irrelevant to the sound technical conclusion that it merits separate consideration. Second, in making a specific listing determination EPA is not limited to looking only at whether the waste is hazardous under the existing characteristics approach to defining hazardous waste. While the listing criteria in 40 CFR 261.11(a)(3)(i) do require EPA to consider whether a waste is characteristically hazardous, there are other criteria in § 261.11(a)(3) that the EPA also addresses in making listing determinations, which include a determination as to whether the waste poses significant risk based on a waste-specific evaluation.

Additionally, the toxicity characteristic regulation is a regulation of general applicability; that is, it potentially applies to all non-exempt solid waste generated. The TCLP leaching test was designed to represent likely leaching potential of waste in an MSW landfill, which was considered plausible worst-case management conditions for industrial solid waste generally. BCP's comments expressed concern that the Agency is singling this waste out for assessment under an approach different (and more stringent) than that applied to other wastes or to evaluation of solid waste under the TC regulation. The Agency is considering the pH dependency of mercury sulfide solubility, and considering other data on this key waste constituent, including both the changes in likely leachability under conditions different from the TCLP test but matching those of the landfill where the waste is actually disposed. In doing so, the Agency is not singling this waste out for more stringent assessment. Rather, the Agency is attempting to more fully consider all the scientific data on the waste, its constituents, and its actual management conditions, and applying these data in an assessment of the likely risks from the waste as it is actually managed. The whole point of a listing determination is to decide, on a wastestream-specific basis, whether the existing characteristics adequately address risks from the waste.

Regarding BCP's comment questioning the results from the EPA/ORD study on mercury mobility, while BCP claims to not necessarily dispute the results, it pointed out that the results were from a preliminary study that had not yet been peer reviewed, and that any decision EPA makes should be based upon peer-reviewed, final analytical reports with all QA/QC data available. BCP also commented that it attempted to duplicate the extraction of the VCM–A waste at varying pH (6, 8, and 10) but found very little difference in the resultant mercury leachate concentration, and all results were below the TCLP limit of 0.2 mg/L. BCP points out that contradicting results cast doubt on EPA's conclusions that mercury is more mobile at elevated pH when in the mercuric sulfide state.

EPA continues to believe that available evidence supports the conclusion that the solubility of mercuric sulfide increases with increasing pH, and that this conclusion is supported by scientific literature cited in the proposed rule [40] as well as additional scientific literature and EPA calculations presented below. A recently published study on mercury speciation in the presence of polysulfides agrees with our finding that there is an increase in the solubility of cinnabar (mercury sulfide) in the presence of elemental sulfur, particularly at high pH.[41] This same study also indicated that at a pH of 10, mercury can solubilize from mercuric sulfide at concentrations very similar to what was reported in the draft EPA/ORD study. EPA performed additional calculations using the geochemical assessment model MINTEQA2. We calculated the solubility of mercuric

[39] Paul Bishop, Renee A. Rauche, Linda A. Rieser, Markram T. Suidan, and Jain Zhang; ''Stabilization and Testing of Mercury Containing Wastes,'' Draft, Department of Civil and Environmental Engineering, University of Cincinnati, March 31, 1999.

[40] H. Lawrence Clever, Susan A. Johnson, and M. Elizabeth Derrick, The Solubility of Mercury and Some Sparingly Soluble Mercury Salts in Water and Aqueous Electrolyte Solutions, J. Phys. Chem. Ref. Data, Vol. 14, No. 3, 1985, page 652.

[41] Jenny Ayla Jay, Francois M. M. Morel, and Harold F. Hemond, Mercury Speciation in the Presence of Polysulfides, Environmental Science and Technology, 2000, Vol. 34, No. 11, pages 2196–2200.

sulfide using conditions reported for the VCM–A waste (*e.g.,* pH reported for subtitle C landfill leachate where waste is disposed, sulfide concentration of VCM–A waste) and found the calculated mercury solubility agreed well with the mercury concentration data for the landfill leachate (originally included in the docket to the proposed rule). This further supports our assertion that sulfide and pH are controlling factors in the solubility of mercuric sulfide, and that this conclusion reasonably can be applied to the VCM–A waste as well.[42] Therefore, while we did indicate at proposal that the EPA/ORD study was preliminary, we believed it was important to present these results as evidence because they represented direct studies on the instant waste being evaluated for listing. EPA has received no specific information in comment that effectively contradicts this evidence, and has identified specific information in the scientific literature that supports it.

Regarding the results from BCP's own leach testing experiment, which BCP claims did not show a strong correlation between pH and mercury solubility, BCP stated that it had attempted to replicate EPA's study ''in the absence of any information regarding how the EPA contractor samples were extracted.'' [43] While EPA does not have any information on BCP's experiment (other than a summary of the findings) to explain why there might be differences between Borden's results and those from the EPA study, EPA's results are consistent with literature sources regarding the relationship between pH and mercury solubility from the mercuric sulfide form; therefore EPA does not agree that BCP's results indicate that EPA's conclusions are invalid.[44] Again, even absent the draft EPA/ORD study, the effect of pH on the solubility of mercury in mercuric sulfide is established independently in the scientific literature, as discussed above.

iv. Liner Effectiveness

EPA requested comment on the basis for listing as hazardous the VCM–A waste that is presently being disposed in a lined subtitle C landfill. BCP stated that EPA's reliance on some degree of liner failure as part of predicting the release of mercury to groundwater from a subtitle C landfill amounts to a ''repudiation of existing standards for * * * landfill management of hazardous waste.'' BCP argues that EPA's statement that there is ''inherent uncertainty'' associated with liner integrity in a subtitle C landfill is no greater with respect to its VCM–A waste than it is for any other waste currently disposed in C landfills. BCP continues by making numerous arguments that subtitle C liner systems are designed to be compatible with the wastes being disposed, and that the regulatory requirements applicable to these systems (*e.g.,* groundwater monitoring, leak detection, leachate collection, post-closure care and maintenance, etc.) are all designed to ensure system integrity in both the short- and long-term.

EPA has acknowledged the uncertainty associated with liner systems in the past. Taking this uncertainty into account when evaluating the potential risk from this specific waste stream is in no way a repudiation of EPA's reliance on liner systems overall. Indeed, the premise of the statutory land disposal restrictions requirements—one of the core features of RCRA—is precisely that liners and other containment systems, no matter how well designed, are inherently uncertain and cannot be relied upon alone to fully mitigate threats posed by hazardous wastes. In general, we believe releases from landfills are significantly reduced by well-constructed, monitored, and maintained liner and cap systems. However, we recognize that there is still uncertainty associated with liner performance, both in the near term as well as in the long term. While some studies indicate that engineering properties of liners may last for many (perhaps several hundred) years, there are a variety of factors that may influence longevity and performance, such as poor construction, installation, or geologic movement below the liner that can cause holes, tears, or larger failures. Some defects are likely to have little to moderate effect on the leakage rate. Other defects may have a significant effect and may necessitate corrective action (64 FR at 31582).

We are only considering this uncertainty to the extent that, as discussed previously in section VI.C.1, even if a liner system is capable of preventing 95% of releases over the long-term, the waste likely will present substantial risk to consumers of groundwater due to a release of mercury from the landfill unit (i.e., exceedance of the MCL). We are not saying we believe that liners will necessarily fail. What we are saying is that given the specific evaluation we have made of the VCM–A waste, a liner system can be 95% effective and we still would predict a release to groundwater that potentially poses risk (exceedance of the mercury MCL at a modeled receptor well). We think that over the long term such a change in effectiveness is sufficiently plausible to merit consideration in this listing decision. We emphasize that this assessment is specific to a waste containing a highly toxic, very persistent constituent coupled with the possibility of a small degree of liner degradation, and does not mean that EPA would choose to list any wastes voluntarily put into a subtitle C landfill.

Despite the uncertainty noted above on predicting how well liners will perform over periods of say, 100, 1000, or 10,000 years, and the fact that the oldest subtitle C units are less than 30 years old, EPA is nevertheless obligated in this listing determination to make a judgment whether waste disposed of in these units ''is capable of posing a substantial present or potential hazard to human health and the environment.'' Given that landfill controls would have to be 95% effective forever to prevent substantial risks from this highly concentrated, toxic, and persistent waste, EPA concludes that the waste is capable of posing a substantial hazard. While EPA cannot say how effective these units will be over the long term, we believe it is plausible that at least some will not be 95% effective forever. The alternative course would be for EPA to conclude the waste is not capable of posing a substantial hazard, by concluding that a Subtitle C landfill will most likely be 95% effective forever. But, we conclude that that is an unreasonable and unsupportable conclusion and are acting upon what seems like the more reasonable conclusion under the circumstances.

EPA also points out that under RCRA, the subtitle C management standards provide that hazardous wastes that are land disposed must be treated to reduce the risk of hazardous constituents being released to the environment as well as be disposed in landfills equipped with liners and leak detection. The existing standards for the safe management of hazardous wastes rest on more than the landfill management requirements, or liner integrity. The legislative history to RCRA 3004(m) states that this section of the statute ''makes Congressional intent clear that land disposal without prior treatment of these wastes with significant concentrations of highly persistent, bioaccumulative constituents

[42] Memorandum from John Austin to Ross Elliott, May 12, 2000.

[43] EPA notes that there was a summary description of the constant pH leaching procedure in Section 4.4 of the draft EPA report, which was part of the proposed regulatory docket.

[44] EPA also points to data in the proposed rule record from BCP's analysis of their mercuric sulfide sludge at three different pH values, which were all above the current TCLP limit and did vary with pH. See Appendix 1, Reclassification Petition Submitted to LDEQ, September 1987.

is not protective of human health and the environment.'' (130 Cong. Rec. S 9178; daily ed. July 25, 1984). Mercury is exactly the type of ''highly persistent, bioaccumulative constituent'' to which Congress was directing this statutory mandate.

v. pH Conditions of Disposal Environment

BCP questioned EPA's conclusions that the disposal conditions at the subtitle C landfill cell where the VCM–A waste is presently disposed are at elevated pH levels, based upon the recorded pH measurements EPA obtained for the leachate collected from this same cell. BCP also cited several factors that it stated led to the conclusion that the VCM–A waste will not be subjected to elevated pH conditions when disposed in the subtitle C cell where it currently is sent. BCP described several factors that would limit the influence of other co-disposed wastes on the VCM–A waste (and thus, BCP appears to be saying, reduce the likelihood of the VCM–A waste being subject to elevated pH conditions). BCP points out that the volume of the VCM–A waste disposed in the cell since 1985, which is relatively minor, compared with the large volume of other hazardous wastes in the disposal cell, the supposed absence of free liquids in a subtitle C landfill, the lower pH and resultant buffering capacity of the VCM–A waste, and the fairly solid nature of the VCM–A waste, all reduce the influence that other co-disposed wastes may have on the potential for mercury to leach from the disposed VCM–A sludge.

EPA disagrees that these factors would change the conclusion that is drawn from the measured elevated pH of the leachate removed from this landfill cell. In addition to the leachate pH measurements cited in the proposed rule for the same cell where BCP's VCM–A sludge is disposed, additional information from the landfill facility confirms these leachate pH measurements are consistent with the nature of the landfill leachate for this facility.[45] In fact, to the extent that these factors affect the pH of the landfill environment, we believe it is reasonable to conclude that the measured leachate pH provided by the landfill operator reflects the sum total of these various factors. Borden's comments give us no reason to believe that the leachate collected from this cell is not indicative of elevated pH conditions within the unit. We thus conclude that BCP's waste, while in the same disposal cell and coming into contact with leachate, would be exposed to the type of alkaline conditions that result in higher mercury mobility when in the sulfide form.

vi. Other Comments

BCP commented that should EPA decide to list the VCM–A waste as hazardous, we should select the alternative option proposed which would result in the VCM–A waste only being listed if sent anywhere other than to a subtitle C landfill (and provided the waste does not exhibit the toxicity characteristic for mercury). EPA proposed this alternative option in the event that we received comment persuading us that our assumptions were incorrect regarding mercury being more mobile in the presence of sulfides in a higher pH environment, or that our assessment of liner uncertainty is insufficient to predict a risk to consumers of groundwater. As discussed above, EPA remains convinced that mercuric sulfide is less stable under the elevated pH conditions of disposal in a subtitle C landfill, and that a liner system can be 95% effective and we still would predict a release to groundwater that potentially poses risk.

BCP also requested that should EPA proceed with a decision to list the VCM–A waste as hazardous, that we re-phrase the K175 listing description so it only applies to mercuric sulfide forms of sludge. The commenter said that this was so future technologies could be developed that are ''better'' and the sludge would no longer meet the listing if these changes are employed. Aside from suggesting that the reference to mercuric sulfide be removed, the commenter did not provide any specific potential changes that might occur, or how these changes would make the wastewater treatment sludge significantly different or less risky. The listing description proposed refers to the manufacturing process that uses mercuric chloride catalyst, and the commenter did not suggest changing that part of the listing; therefore EPA concludes that the commenter would still be faced with a wastewater treatment sludge containing very high levels of total mercury (to comply with regulatory limits on the amount of mercury in the discharged wastewater). Absent any specific examples, EPA can think of one possible change that could result in a sludge that could pose a greater potential risk. It is possible that the facility could continue to use the mercuric chloride catalysts (as is currently the case for the acetylene-based process), but alter the wastewater treatment process to produce a mercuric oxide sludge, in order to make the sludge more amenable to retorting for mercury recovery. Sludge from such a process might pose a greater risk, because the mercury would be more soluble than the current sulfide. We believe that the current listing description is appropriate, because it appropriately describes the waste subject to our evaluation.

b. Summary

In conclusion, EPA is listing as hazardous the VCM–A wastewater treatment sludge described above because this wastestream meets the criteria set out at 40 CFR 261.11(a)(3) for listing a waste as hazardous. Our analysis that showed potential risk to consumers of groundwater due to a predicted exceedance of the MCL takes into account the toxicity and concentration of mercury in the waste (criteria at 40 CFR 261.11(a)(3)(i) and (ii)). This is because the mercury MCL is based upon toxic human health effects from ingestion of mercury, and because the high mercury concentration in the waste results in the predicted MCL at the modeled receptor well. We also determined that the potential of mercury to migrate from the waste into the environment under a plausible disposal scenario (criteria at 40 CFR 261.11(a)(3)(iii) and (vii)) and mercury's persistence and lack of degradation into non-harmful constituents (criteria at 40 CFR 261.11(a)(3)(iv) and (v)) also supported a decision to list this waste. This is because there is increased solubility of mercury in this waste at the elevated pH conditions in the landfill cell where the waste is disposed, and only a relatively small degradation of liner performance results in unacceptable risk to potential groundwater consumers. In addition, mercury is a persistent contaminant and therefore will not degrade before any predicted impact to groundwater occurs.

Listing criteria that the EPA considered but which did not form the basis for listing this waste include the ability of mercury to bioaccumulate in ecosystems, the nature and severity of human health or environmental damage from improper management of these wastes, and actions taken by other governmental agencies or regulatory programs. (40 CFR 261.11(a)(3)(vi), (ix), and (x)). Bioaccumulation of mercury is not relevant to the exposure pathway EPA assessed (ingestion of groundwater). Although no documented damage incidents were found for this particular waste, EPA believes that on balance this fact alone does not

[45] See Memorandum from Ross Elliott, U.S. EPA Office of Solid Waste, to RCRA Docket, ''Summary of Phone Call Between EPA and Carl Carlsson, Chemical Waste Management Inc.,'' July 12, 2000.

persuade us to make a finding that this waste should not be listed, when weighed against the other criteria described in this section that support a decision to list this wastestream. No governmental or regulatory actions [46] were identified that would lead EPA to decide to list this waste or conclude that waste was already sufficiently controlled to render further regulation moot.

Finally, EPA did consider certain ''other factors as may be appropriate'' together with the quantities of this waste generated (criteria at 40 CFR 261.11(a)(3)(xi) and (viii)) in a ''weight-of-evidence'' approach to reach a decision to list this waste as hazardous. As discussed in the Land Disposal Restrictions section of today's preamble (section VI.I.3), EPA believes that this waste can be disposed in a manner that helps ensure the mercury is more stable and less likely to leach. Because this waste is already being sent to a hazardous waste landfill, one important effect of today's listing is the assurance that the waste is properly treated (or otherwise meets specific standards as generated) and is disposed in a manner to reduce the likelihood of mercury releases to groundwater, releases that may result in unacceptable risk to consumers of groundwater. Given the reported amount of this waste generated per year (120 metric tons), and the high total concentration of mercury in the waste (approximately one percent mercury by weight), the total loading to the landfill is approximately one metric ton of mercury per year. Ensuring that this amount of mercury is disposed of in a form that minimizes releases of mercury was considered by EPA when making its final listing decision.

2. Wastewaters From VCM–A Production

a. Summary of Agency's Listing Determination for VCM–A Wastewaters

The EPA is not listing as hazardous wastewaters generated from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process (VCM–A). This wastestream does not meet the criteria set out at 40 CFR 261.11(a)(3) for listing a waste as hazardous, for the reasons described below.

[46] Although we noted at proposal that the facility had obtained a ''reclassification'' of the waste as non-hazardous from the State of Louisiana, this determination did not appear to be a blanket exemption from hazardous waste requirements, for example, should a process change result in a waste that fails the toxicity characteristic for mercury, the waste would have to be handled as hazardous waste).

b. Discussion of Agency's Listing Determination

As discussed above, only one facility in the United States operates an acetylene-based VCM production process, which uses mercuric chloride catalysts in the production of VCM. The management of spent mercuric chloride catalyst used in the VCM–A production process results in the generation of a wastewater containing mercuric chloride, as well as vinyl chloride. EPA proposed not to list this wastewater due to the fact that the wastewater already is identified as hazardous waste. As explained in the preamble to the proposed rule, the wastewater exhibits the toxicity characteristic for mercury and vinyl chloride. EPA received only one comment addressing the Agency's proposed decision not to list VCM–A wastewaters. This comment favored EPA's proposed decision.

The Agency bases its decision not to list VCM–A wastewaters as hazardous on the fact that the wastewaters already are identified as hazardous wastes under the toxicity characteristic. In fact, the concentration of mercury in a sample of this wastestream analyzed by EPA was over 40 times above the TC regulatory limit for mercury. Therefore, it is highly probable that the wastewater routinely contains levels of mercury which cause this wastestream to be defined consistently as characteristically hazardous waste. Therefore, EPA concludes that the TC adequately defines this wastestream as hazardous.

Additionally, the facility's dedicated wastewater treatment system is designed and optimized expressly for the removal of mercury, the source of which is the mercuric chloride catalysts, to comply with regulations promulgated under the Clean Water Act. The criteria in 40 CFR 261.11(a)(3) for evaluating whether or not a solid waste is a hazardous waste provide that EPA should consider how the waste (and potential risk) is affected by other regulatory programs (i.e., 261.11(a)(3)(x)). In the case of the VCM–A wastewaters, EPA notes that the Agency's decision not to list this wastewater as hazardous is based on the fact that the waste already is defined as a hazardous waste because it exhibits the toxicity characteristic and the potential risks posed by the wastestream are regulated both under RCRA and other programs. With respect to the discharge of the wastewater, the facility treats and discharges the wastewater in compliance with the conditions of a NPDES permit issued under the authority of the Clean Water Act. Regarding any air emissions of vinyl chloride from these wastewaters, vinyl chloride is a hazardous air pollutant; therefore the facility is subject to the National Emissions Standards for Hazardous Air Pollutants (NESHAP) requirements specific to vinyl chloride emissions (40 CFR 61.65), as well as the Hazardous Organic NESHAP for the synthetic and organic chemical manufacturing industry sector (40 CFR Part 63, subpart G)(59 FR 19468, April 22, 1994).

Given that this waste currently is regulated as hazardous because it exhibits the TC and given the fact that management of the wastestream is adequately regulated under a number of environmental regulatory programs, the Agency is promulgating a decision not to list VCM–A wastewaters as hazardous waste.

D. Wastewater Treatment Sludges from the Production of Methyl Chloride

1. Summary of Agency's Listing Determination for Methyl Chloride Wastewater Treatment Sludges

EPA is not listing as hazardous sludges from the treatment of wastewaters generated from methyl chloride production processes. The Agency has determined that this wastestream does not meet the criteria set out at 40 CFR 261.11(a)(3) for listing a waste as hazardous.

2. Discussion of Agency's Listing Determination

Only one facility generates a non-hazardous wastewater treatment sludge from the production of methyl chloride. The facility generates less than 800 metric tons of the sludge annually and disposes of the sludge in an on-site landfill. As discussed in the preamble to proposed rule (64 FR 46516), EPA conducted a risk assessment of this waste, modeling one management scenario (the on-site landfill). The Agency's analysis of potential risks due to volatile emissions from the landfill found negligible risks (i.e., estimated risks less than 1E–6) to individuals in the surrounding area. The Agency also conducted a bounding (*i.e.,* worst case) risk analysis to estimate potential risks to groundwater consumers. This analysis used the leachate concentration measured from a sample of the facility's methyl chloride wastewater treatment sludge, and assumed the direct ingestion of this leachate by an adult for a period of 58 years. This bounding analysis resulted in a risk of 5E–5 for one constituent, arsenic. This estimate of individual risk, together with additional factors described below in

EPA's response to specific comments, led the Agency to conclude that this waste did not pose a substantial risk to human health and the environment.

3. Response to Major Comments Received on the Proposed Listing Determination for Methyl Chloride Wastewater Treatment Sludges

Two commenters questioned why the Agency proposed not to list the wastewater treatment sludges from methyl chloride production as hazardous, given that the individual cancer risk level from arsenic, via the groundwater pathway, is within the range of risk values that EPA generally associates with potential candidacy for listing the waste as hazardous. The commenters argued that EPA should not ignore the potential risks from the arsenic in the wastewater treatment sludges and should list the waste as hazardous.

EPA did not ignore the potential risk from arsenic. The estimated risk described by the commenter was the result of the Agency conducting a bounding analysis using worst case assumptions. Given that the Agency's assumptions were very conservative (*i.e.,* an adult receptor would drink leachate generated from the disposal of the methyl chloride wastewater treatment sludges for 58 years), and taking into account additional factors described below, the Agency determined that there is no substantial hazard to human health and the environment on which to base a decision to list the waste as hazardous.

As described in more detail in Section VI.B.1. of this preamble, EPA's policy for listing wastes as hazardous (originally outlined in the in 1994 Dyes and Pigments proposal, 59 FR 66077) is that wastestreams with risks in the range of 1E–6 to 1E–4 may be either listed or not listed after taking into account additional factors. Generally, our benchmark level for listing is the middle of the range (1E–05), but, as described in the preamble to the Dyes and Pigments proposal, we use a ''weight of evidence'' approach that considers other factors. In the case of our listing determination for methyl chloride wastewater treatment sludges, these additional factors include the conservative assumptions that resulted in the groundwater risk estimate for arsenic, along with additional information available to the Agency regarding the manner in which the waste is currently managed (*i.e.,* in a landfill). We also evaluated our risk assessment results in conjunction with additional information available to the Agency with regard to the constituent of concern (*i.e.,* arsenic).

If the Agency assumes a less direct pathway of ingestion (i.e., taking into account some dilution and attenuation expected with a landfill scenario, so that a person drinks groundwater contaminated with leachate, rather than the leachate directly), and applying a DAF of 5 (which would be a reasonable assumption for an unlined landfill), the predicted risk becomes 1E–5. However, the Agency also notes that assuming a DAF of 5 (as was described in the proposed rule) is likely too conservative, given that the landfill in which the methyl chloride sludge is disposed has a 24-inch clay liner and a leachate collection system. Therefore, the actual risk from arsenic in this waste will be much lower than the risk level predicted by the bounding analysis, given that the landfill currently used by the single facility generating this waste is lined and has a leachate collection system.

To further illustrate why assuming a DAF of 5 would be a very conservative assumption, in our assessment of risk from the EDC/VCM wastewater treatment sludge presented elsewhere in today's rule, arsenic was an initial constituent of potential concern. To support our analysis of potential groundwater risks from the landfilling of EDC/VCM wastewater treatment sludges, we modeled arsenic releases and obtained estimates of DAFs for arsenic (assuming an unlined landfill) of 13 for the high-end risk estimate, and a DAF of 93 for the central tendency estimate. Thus, even if the Agency does not take into account the liner and leachate collection system in the one landfill where currently non-hazardous methyl chloride sludge is managed, applying reasonable estimates of DAFs lowers the estimated risk to the lower end of the range of risks where the Agency may or may not list a waste; and upon consideration of the very conservative approach used in generating the arsenic risk estimate, the Agency concludes that the potential risk associated with arsenic in the waste is well below the range in which the Agency would deem the waste to pose a substantial hazard to human health and the environment. Therefore, EPA is finalizing a no list determination for wastewater treatment sludges from the production of methyl chloride.

E. Wastewater Treatment Sludges From the Production of Allyl Chloride

1. Summary of Agency's Listing Determination for Allyl Chloride Wastewater Treatment Sludges

EPA is not listing as hazardous waste sludges from the treatment of wastewaters generated from allyl chloride production processes. The Agency has determined that this wastestream does not meet the criteria set out at 40 CFR 261.11(a)(3) for listing a waste as hazardous. The Agency identified no risks of concern associated with the current management of this waste.

2. Discussion of Agency's Listing Determination

As discussed in the proposal, currently non-hazardous wastewater treatment sludges from allyl chloride production are generated at a single facility. The sludges are generated from the facility's centralized wastewater treatment system in which the facility manages wastewaters from multiple production processes and facilities. Wastewaters from the production of allyl chloride contribute less than two percent to the system's total sludge loading. According to the RCRA Section 3007 survey response from the one facility generating a non-hazardous allyl chloride sludge, the sludge generated from the facility's wastewater treatment system is incinerated on site in a non-hazardous waste incinerator.

As described in the proposed rule, during the investigations undertaken in support of the listing determinations EPA collected one sample of sludge from the facility's combined wastewater treatment system. Two duplicate TCLP analyses were performed using the sample collected. The TCLP analyses indicated the presence of no TCLP constituents above regulatory levels. The sample also was analyzed for total constituent concentrations including arsenic and dioxins and furans. The total arsenic concentration in the waste was 11.7 mg/kg, and the total dioxin (TEQ/TCDD) concentration was 11.79 ng/kg.

The Agency did not assess risks by modeling management practices and exposure pathways, since both the total arsenic level and the total dioxin level detected in the sludge are below levels of concern and well within the range of background levels of those constituents

in soils.[47] [48] In addition, the waste is generated by a single facility and currently is not managed in a manner other than non-hazardous waste incineration.

Given that wastewater treatment sludges from allyl chloride production are generated by a single facility, that the sludge generated is the product of a facility-wide non-dedicated (*i.e.,* not process-specific) wastewater treatment system, and that the waste contains no constituents of concern at concentrations of concern, the Agency concludes that no significant risks are posed by the waste. The Agency is finalizing a determination not to list this waste as hazardous.

3. Response to Major Comments Received on the Proposed Listing Determination for Allyl Chloride Wastewater Treatment Sludges

One commenter questioned whether EPA had considered the fact that the one facility generating wastewater treatment sludges from the production of allyl chloride may manage this waste in a manner other than on-site combustion in the future. The commenter suggested that EPA should have conducted a risk analysis of managing the waste both in a non-hazardous waste incinerator and in an unlined landfill.

Given that the one facility generating this waste is managing the waste in an on-site incinerator and that the Agency has no information indicating that the facility has or intends to manage the waste in a manner other than on-site incineration, we believe that landfill management is not plausible for this wastestream. In the case of a waste that is generated by a single facility, we would not project a change in management practices without information or cause. EPA evaluated information provided by the facility regarding current management practices to project plausible scenarios. The Agency concluded that the facility has sufficient on-site capacity to continue to treat the waste in its non-hazardous waste incinerator. The total arsenic and total dioxin concentrations in the waste are below levels of concern.

A commenter suggested that the analytical work performed on the wastewater treatment sludge generated from allyl chloride production was inadequate, given that only one sample of the sludge was collected and analyzed by EPA.

The commenter did not provide any specific information as to why the allyl chloride sample collected by EPA was inadequate, other than it was one sample. As noted in Table 2–10 of the Listing Background Document (USEPA, 1999c), the Agency sampled 100% of the facilities producing allyl chloride, that is, EPA visited and sampled the one facility that produces this chlorinated aliphatic chemical. As discussed above and in the proposed rule, EPA is not listing this facility's allyl chloride wastewater treatment sludge because the chlorinated aliphatic production process at this facility contributes less than two percent of the total wastewater volume to the wastewater treatment process from which the sludges are generated. Given that there is only one generator of this waste and that the wastewaters from the allyl chloride production process contribute a relatively small portion to the facility's wastewater treatment system, EPA believes that our data, though perceived as limited by the commenter, is adequate to support the listing determination.

F. What is the Status of Landfill Leachate Derived-From Newly-Listed K175?

At the time of the proposed rule, information available to EPA indicated that wastewater treatment sludges from the production of VCM–A may have been managed previously in non-hazardous waste landfills. If these sludges had been managed in non-hazardous waste landfills, and if the leachate and gas condensate generated at such landfills is actively managed after the effective date of today's rule, the landfill leachate and gas condensate derived from the newly-listed VCM–A waste in such landfills could be classified as K175. As explained in the preamble to the proposed rule and in the final rule for leachate derived from newly-listed petroleum wastes (64 FR 6806), in such circumstances, we would be concerned about the potential disruption in current leachate management that could occur, and the possibility of redundant regulation (under RCRA and CWA) due to the application of the ''derived-from'' rule to the leachate. In the case of non-hazardous waste landfills receiving newly-listing hazardous wastes prior to the effective date of the listing decision, the leachate that is collected and managed from the landfills would be classified as hazardous, due to the application of the waste code for the newly-listed K175 to the leachate. As noted by a commenter in response to proposed petroleum listing determination, this could lead to vastly increased treatment and disposal costs without necessarily any environmental benefit.

In the chlorinated aliphatics proposed listing determination, EPA requested comment on whether or not VCM–A wastewater treatment sludges were previously disposed in non-hazardous waste landfills. Information provided to the Agency by the one generator of this waste indicates that this waste was not previously managed in non-hazardous waste landfills. The generator stated that they have always disposed of the VCM–A sludge in a subtitle C landfill. Since EPA has no evidence that this waste has been disposed of in non-hazardous waste landfills, the Agency sees no reason at this time to finalize the proposed temporary deferral for landfill leachate and gas condensate derived from newly-listed VCM–A wastes. Therefore, today EPA is not finalizing the proposed temporary deferral for landfill leachate as was proposed.

Although the Agency is not finalizing the proposed temporary deferral for applying the new K175 waste code to leachate from non-hazardous waste landfills that previously accepted K175, should the Agency, in the future, receive information indicating that one or more non-hazardous waste landfills did accept this waste prior to the effective date of today's rulemaking, we may re-consider our decision not to finalize the proposed deferral. The Agency notes that the proposed regulatory language for the temporary deferral, as published in the August 25, 1999 **Federal Register**, inadvertently included both the K174 and K175 waste codes. The regulatory language in the proposal only should have included the K175 waste code. Given that the Agency is finalizing the conditional listing approach for K174 (and thus EDC/VCM sludge disposed in a licensed landfill will not be listed hazardous waste) there is no reason to include (nor did EPA intend to include at proposal) the K174 waste code in the temporary deferral for the application of waste codes to leachate from non-hazardous waste landfills that previously accepted newly-listed wastes (40 CFR 261.4(b)(15)).

[47] Alkhatib, Eid, and O'Connor, Timothy, ''Background Levels of Priority Pollutant Metals in Soil, *American Environmental Laboratory,* Vol. 10, No. 3, April, 1998.

Hunter, Philip M., ''Air-Force Wide Background Concentrations of Inorganics Occurring in Ground Water and Soil,'' *Proceedings from the Fourteenth Annual Waste Testing and Quality Assurance Symposium,* Pp. 73–77, 1998.

Welch, Alan H., Lico, Michael S., and Hughes, Jennifer L., ''Arsenic in Ground Water of the Western United States,'' *Ground Water,* Vol. 26, No. 3, May/June, 1988.

[48] See Table 4–4 of ''Risk Assessment Technical Background Document for the Chlorinated Aliphatics Listing Determination,'' EPA, June 25, 1999a.

G. Population Risks

As discussed previously, our proposed and final listing determinations were based upon estimates of individual risk. For the EDC/VCM wastewater treatment sludges, the projected population risks are low. We relied on individual risk estimates (excess lifetime cancer risk), and not population risk estimates, because we are concerned about risks to individuals who are exposed to releases of hazardous constituents. EPA concludes that, under certain waste management practices, these wastes are capable of posing a substantial present or potential hazard to human health or the environment. We have determined that using individual risk as a basis for this listing determination, which is consistent with past practices, also is appropriate because the Agency must protect against potential, as well as present hazards that may arise due to the generation and management of particular wastestreams. EPA acknowledges that in cases where small populations are exposed to particular wastes and waste management practices, population risk estimates may be very small. EPA finds it is important to address the current or potential substantial hazards to individuals living in small communities. Where individuals may be subject to substantial risks, EPA finds that such individuals deserve protection. In promulgating the final listing determinations for EDC/VCM and VCM–A wastewater treatment sludges, it is the increased risk for currently or potentially exposed individuals, regardless of how few individuals are exposed, against which EPA is reasonably protecting.

In the proposed rule, in addition to presenting the results of our risk assessments estimating individual risks, we also discussed the potential risk posed to populations from the management of chlorinated aliphatic wastewaters managed in tanks, and EDC/VCM sludges managed in land treatment units and landfills. We requested comment on whether or not it is appropriate to give weight to population risk in making our final listing determinations. We also invited comment on the effect of such an approach with respect to the Agency's environmental justice goals, including our goal of protecting human health in rural areas.

In response to the proposal, we received comments both supporting the use of population risk estimates in making listing determinations, and comments against this approach. Several commenters stated that the population risks estimated by EPA do not justify a decision to list as hazardous the wastes proposed for listing (chlorinated aliphatic wastewaters, EDC/VCM wastewater treatment sludges, VCM–A wastewater treatment sludges). Commenters argued that consideration of the risks posed by the management of these wastes to the entire population potentially exposed would lead to the conclusion that these residuals do not pose substantial hazards to human health. Therefore, the wastes should not be listed as hazardous. Commenters argued that EPA's failure to give serious consideration to the low levels of population risk is at odds with the RCRA statute, the listing criteria, and regulatory precedent within the federal government. Some commenters claimed that, due to the low population risk estimates, EPA cannot conclude that any of the residuals ''is capable of posing a substantial present or potential hazard to human health or the environment,'' as required in 40 CFR 261.11, and therefore EPA should not list any of the residuals.

In response, EPA notes that the use of ''population risk'' is not explicitly required nor prohibited in either the RCRA statute or the hazardous waste listing criteria in 40 CFR 261.11. EPA does not believe it is appropriate to allow contamination from waste management units to potentially cause substantial hazards to nearby residents simply because there are few individuals or wells in the immediate area. As stated above, our decision to list EDC/VCM and VCM–A wastewater treatment sludges is based on our concern about the present and potential hazards to those individuals who may be significantly exposed, even if there are few of them. In addition, the regulations clearly state that wastes are to be listed as hazardous, if they are ''capable of posing a substantial present or potential hazard'' (emphasis added). Therefore, it is the Agency's past and current view that as a policy matter, the Agency considers the threats to individuals, whether they exist today or in the future. EPA's discretion to base its hazardous waste listing decisions upon substantial risks to individuals, even if risk to the overall population is low or near zero, recently was upheld by the U.S. Court of Appeals for the District of Columbia Circuit in *American Petroleum Institute, et al.* v. *EPA* (No. 94–1683).

Specific comments received in response to the proposed rule included several commenters who argued that the legal standard in the RCRA statute for whether a waste is hazardous—that is, that the waste poses a ''substantial present or potential hazard to human health or the environment''—cannot be met unless EPA establishes that a large number of people are likely to have increased cancer risk due to exposure to the hazardous constituents in the waste, *i.e.*, the so-called ''population risk'' is high. We disagree with these commenters. EPA concludes in this listing (and has concluded in previous listings) that even if relatively few people may be subject to substantial hazards, those individuals still deserve protection. Accordingly, consistent with our past practice, we have based the EDC/VCM hazardous waste listing determination on the substantial hazard to currently or potentially exposed individuals, rather than on the increased number of cancer cases in the population at-large. The D.C. Circuit Court in *American Petroleum Institute, et al.*, v. *EPA* upheld EPA's practice in a previous listing decision to base the decision on its concern for substantial risks to individuals.

EPA points out that the use of the word ''substantial'' in the RCRA statute (*i.e.,* ''* * * substantial present or potential hazard * * *'') need not be restricted to a quantitative meaning or applied exclusively to population risk. In the case of the wastes being listed as hazardous wastes today, we have determined that risks to individuals are ''substantial.'' The estimated increased risk of cancer for the exposed individual is greater than 1 in 100,000. Consistent with EPA policy (see 59 FR 66072, at 66077), wastestreams for which the calculated high-end individual cancer risk level is 1 in 100,000 or higher generally are considered initial candidates for a listing decision. Wastestreams for which these risks are calculated to be 1 in 10,000 or higher will generally be listed as hazardous waste, although even for some of these wastestreams, there can be in some cases factors which could mitigate the high hazard presumption. Listing determinations for wastestreams with calculated high-end individual lifetime cancer risks falling into the range of 1 in 10,000 and 1 in 1,000,000 are also potentially listable but always involve an assessment of additional factors.[49] For specific discussion of how EPA

[49] ''The Superfund program has always designed its remedies to be protective of all individuals * * * that may be exposed at a site.'' 55 F.R. 8666, 8710 (Mar. 8, 1990). EPA's Superfund regulations at 40 C.F.R. § 300.430(e)(2)(i)(A)(2) establish remediation goals at levels that represent an excess upper bound lifetime cancer risk to an individual cancer risk to an individual at between 10^{-4} and 10^{-6}.

addressed these factors for EDC/VCM sludge see Section VI.B.1. of today's preamble.

In addition to comments arguing the legality of basing hazardous waste listing decisions on estimated risks to individuals, rather than population risks, we received comments claiming that the individual risk approach used by EPA was ''overly conservative and unrealistic.'' These commenters stated that EPA needs to use population risk estimates as a ''reality check'' on individual risk estimates. Two commenters also said that we should use individual central tendency risk estimates as a more meaningful or realistic estimate of potential risk.

EPA disagrees with commenters' assertions that the highly-exposed individual risk approach used in the risk assessment supporting today's listing determinations was overly conservative and unrealistic. In today's notice, as well as in the Response to Comment Document accompanying today's rule, we address specific comments regarding the risk assessment. Even though our listing decisions in today's rule are based upon predicted risks to highly-exposed individuals, we believe that these risks are within the distribution of risks that could reasonably be expected to exist in the population. In support of this conclusion, we note that as part of the analyses to support the notice of proposed rulemaking, we also conducted probabilistic modeling to more directly evaluate the anticipated distribution of risk levels. The high end deterministic risk estimate for the adult farmer under the EDC/VCM land treatment unit scenario fell at the 95th percentile of the probabilistic distribution. EPA's Guidance For Risk Characterization (USEPA, 1995) states: ''Conceptually, high end exposure means exposure above about the 90th percentile of the population distribution, but not higher than the individual in the population who has the highest exposure.''

One commenter cited a 1987 study of 13 regulatory determinations where low population risk was cited as a reason not to regulate, and noted that the study suggests that EPA should not establish regulatory controls on the management of wastes, if the population burden is less than one cancer in 100 years.[50] The commenter described where the individual risk levels in the proposed chlorinated aliphatics listings fell in comparison to the individual risk levels in these other regulatory decisions.

EPA does not find this study leads it to change today's listing decisions. As already noted, the Agency has the discretion to base its listing decisions on the substantial hazard to highly exposed individuals, even if there is only a small number of them, as upheld by the U.S. Court of Appeals for the D.C. Circuit in *American Petroleum Institute* v. *EPA.* The study itself, however, has a number of flaws which lead EPA to reject its use. It deals with no RCRA decisions, but instead deals with a number of other statutes that have different mandates. This study also is outdated in that it was conducted a number of years ago when Agency risk assessment was less sophisticated than it is now. In particular, the study notes that at the time federal agencies overestimated risk assuming maximum exposures. Since issuance of EPA's 1992 ''Guidance on Risk Characterization for Risk Managers and Risk Assessors,[51] EPA has modified its risk assessment approach to determine a plausible high-end exposure analysis, which is intended not to overestimate risks to highly exposed individuals. Moreover, EPA's current guidance acknowledges that in situations where small populations are exposed ''individual risk estimates will usually be a more meaningful parameter for decision-makers.'' [52]

The study merely presents a listing of decisions made by various federal agencies under different statutory requirements. It does not suggest any rationale for the regulatory decisions other than the fact that they occurred. It seems to suggest that, because we decided against specific regulations in the past that coincided with a particular individual risk level (*e.g.,* 1×10^{-4}) and low numbers of cancer cases avoided, we are somehow obligated to make that same decision now. The commenter does not offer any other rationale for determining at what point the number of cancer cases avoided would support an Agency decision to list a waste as hazardous.

For several additional reasons, EPA disagrees with the suggestion that the Agency base today's listing decisions on total population risk or total number of cancer cases. In the first place and as previously noted, we believe we should not ignore substantial risks to individuals, if that might consign individuals to substantial risks, simply because only a few individuals potentially will be exposed. In addition, risk estimates alone do not dictate any particular listing decision. Even if EPA finds an individual risk of 1×10^{-5} or greater, for example, the Agency considers other factors and may decide to list or not list a waste as hazardous, based upon the consideration of all relevant factors. In finalizing today's listing determinations, the Agency is basing its decisions on the listing policy described in the December, 1994 proposed listing determination for dyes and pigment industry wastes (59 FR 66072). Furthermore, the Agency does not think that it is adequate to base a hazardous waste listing determination upon a comparison of potential risks posed by wastes covered by one rulemaking relative to risks posed by other wastes and potentially unrelated rulemakings. The Agency considers relevant factors particular to a waste and the plausible management practices affected when making each regulatory decision. As we have discussed thoroughly in this preamble and in the accompanied background documents, in this case we think the individual risk estimates and our consideration of other factors provide an adequate justification for listing both EDC/VCM and VCM–A wastewater treatment sludges as hazardous wastes.

Other comments received by the Agency include comments that stated that society does not have unlimited resources to address risks unless they are ''clearly substantial,'' as indicated by population risk. We point out however that the regulations state that EPA may list a waste if it is ''capable'' of posing a hazard and the underlying RCRA statutory language states that hazardous wastes are those that ''may * * * pose'' a hazard. Thus, the Agency disagrees that risks must be ''clearly'' substantial to be subject to RCRA regulation. Further, EPA disagrees that ''clearly substantial'' risk (or even a risk that ''may'' occur) must be indicated by a high population risk estimate. The statutory standard for listing a waste is ''substantial hazard.'' Where EPA finds that a waste poses a substantial hazard to highly exposed individuals, EPA will list the waste to protect those individuals potentially exposed.

Other commenters supported the Agency's use of individual risk estimates as the appropriate criteria for making hazardous waste listing determinations. For example, one commenter said that EPA should weigh individual risk more than population risk because the commenter believes there is greater uncertainty in population risk estimates than in

[50] Travis, Curtis C., 1987. Environment Science and Technology, Vol. 21, No. 5.

[51] 1992 Memorandum from the then Deputy Administrator F. Henry Habicht, ''Guidance on Risk Characterization for Risk Managers and Risk Assessors.''

[52] 1995 Guidance for Risk Characterization (section III.C.2), page 17.

individual risk estimates. No information was provided by the commenter as to why this would necessarily be the case. EPA agrees with the commenter that individual risk is an appropriate decision parameter, for the reasons already stated above.

Another commenter who supports the use of individual risk over population risk, argued that EPA is not compelled by governing regulation or statue to define ''substantial hazard'' in terms of population risk. The commenter also stated that EPA should take into account risks to populations from more than just the industry under study, since populations are potentially impacted by risks from many different facilities. For example, in parts of the country concerns have been raised previously about certain minority and poor populations bearing a disproportionate amount of risk for a variety of industries and wastes.

We agree that we are not compelled by governing regulation or statue to define ''hazard'' in terms of population risk. We may define ''hazard'' on the basis of substantial risk to individuals even when population risk estimates are low. Although population risk is one of many factors that has been considered in some Agency decisions, there are numerous precedents where the Agency has taken action, for example at Superfund sites and in previous listing determinations, when there are relatively few people potentially affected. Superfund is a particularly apt example since it, like RCRA, deals with protecting human health and the environment from harm arising from the mismanagement of waste. The D.C. Circuit Court particularly noted the consistency with Superfund in *American Petroleum Institute et al.,* v. *EPA* described above. While a different statute, the Agency has stated that the key objective of the CERCLA National Contingency Plan (NCP) is to protect individuals at contaminated sites (see 55 FR at 8710), and rejected using population risk as the point of departure for setting clean-up levels (see 55 FR at 8718). In addition, the CERCLA regulations (see 300.430(e)(2)(I)(A)(2), and 55 FR at 8848) direct EPA to establish preliminary remediation goals for carcinogens based on ''cancer risks to an individual.''

The Agency disagrees with the commenter's claim that potential risks from other industries should be estimated or accounted for in estimating potential risks from a particular wastestream generated by one specific industry. The benefits of this listing are the risks avoided from management of the newly-listed wastes. The Agency has no reason to factor in risks from other industrial wastes, unless a synergetic effect can be identified, which the commenter does not claim.

The Agency is committed to addressing environmental justice concerns and does consider risks to minority and disadvantaged populations in its decision making. Our goal is to ensure that no segment of the population bears a disproportionally high risk as a result of our decision making. The hazardous waste listing determinations promulgated today are based upon analyses conducted with a goal of protecting all potentially exposed individuals. No segment of the overall population will be placed at a disadvantage as a result of today's rulemaking.

Finally, the Agency is also concerned that land use patterns can change over time. For example, when evaluating a waste that adversely impacts groundwater, the Agency also is concerned about the potential contamination of future drinking water supplies, and of groundwater which may have other uses (*e.g.,* livestock watering, irrigation, aquaculture). If regulatory decisions were based solely on population risks at a particular point in time, beneficial uses could be precluded or, if the future users were unaware of the contamination, unacceptable risks could occur. This same objective, the protection of reasonably anticipated land use is an integral part of the Agency's Superfund remedy selection process.[53] Under Superfund, it is not sufficient only to consider potential risks to populations surrounding a particular site at the time of contamination or remediation; reasonably anticipated future land use patterns and future populations (*i.e.,* future receptors) are considered in risk assessments supporting remedy decision making and in selecting the final remedy.[54] In fact, the extensive experience with the Superfund program bears out these concerns. There are Superfund sites, for example, where residential developments were placed over former landfills that have turned out to be dangerous to the new populations, leading not only to risks to the population but expensive and time-consuming cleanups.

[53] Memorandum EPA Regional Waste Management Division Directors from Elliott P. Laws, ''Land Use in the CERCLA Remedy Selection Process,'' OSWER Directive No. 9355.7–04.

[54] See ''Risk Assessment Guidance for Superfund (RAGs), Volume I—Human Health Evaluation Manual, Part A,'' (Chapter 6), 1989.

H. Which Constituents Are Being Added to Appendix VIII to 40 CFR Part 261?

1. Summary of Agency's Decision To Add Two Constitutents to Appendix VIII

Two of the constituents of concern that are present in the EDC/VCM wastewater treatment sludges (K174) that will be designated as listed hazardous wastes as a result of today's rule do not currently appear on the list of hazardous constituents at 40 CFR part 261, Appendix VIII. Therefore, EPA is adding these two constituents, octachlorodibenzo-p-dioxin (OCDD) and octachlorodibenzofuran (OCDF), to Appendix VIII.

2. Discussion of Agency's Decision To Add Constituents to Appendix VIII

OCDD and OCDF are members of the large family of polychlorinated dioxins and furans. Certain of these compounds, most notably, 2,3,7,8 -TCDD, have been shown to be toxic. The Agency found substantial hazard associated with the presence of dioxins in EDC/VCM wastewater treatment sludges, when these sludges are managed in land treatment units. In our risk assessment, dioxin/furan risk was reported on a TCDD TEQ basis. As previously discussed in today's final rule, as well as in the proposal, TCDD TEQ concentrations are calculated by multiplying each 2,3,7,8 substituted congener by the appropriate TEF, and then summing the resultant concentrations to come up with a TCDD TEQ value. OCDD and OCDF are included in this calculation.

Several studies, as noted in the response to comments below, show that OCDD and OCDF have toxic effects on life forms. Therefore, we have concluded, based upon the results presented in these scientific studies, that OCDD and OCDF should be added to Appendix VIII of 40 CFR part 261.

3. Response to Major Comments Addressing Agency's Decision To Add Constituents to Appendix VIII

One commenter opposed the addition of OCDD and OCDF to Appendix VIII of 40 CFR part 261 on the basis that OCDD and OCDF contribute very little to the actual risk attributable to dioxin compounds. The commenter also contended that the assignment of non-zero TEFs to OCDD and OCDF cannot form the basis for a regulatory decision to list the compounds as hazardous constituents, since TEFs are intended only to be used as a tool to aid risk managers in thinking about potential health risks associated with the compounds. The commenter argued that

TEFs are not intended to provide a scientific basis for drawing the conclusion that OCDD or OCDF are toxic, carcinogenic, mutagenic, or tetratogenic. The commenter also argued that OCDD and OCDF do not meet the criteria in 40 CFR 261.11(a) for listing a substance on the Appendix VIII hazardous constituent list.

The commenter contends that the 1988 study by Couture, Elwell, and Birnbaum, although it led to a raising of the TEF for OCDD/OCDF to 0.001 by NATO/CCMS, does not support a non-zero TEF for OCDD/OCDF. A reevaluation of the study resulted in a downgrading of the TEF to 0.0001 by the World Health Organization. The commenter further contends that few statistically significant physiological effects have been observed in the study and that they are transitory in nature and are of uncertain toxicological significance. The commenter also points out that a longer-term subchronic study has been reported which dramatically demonstrates that dioxin-like effects are not produced by OCDD in animals even at high dose levels.

The commenter concludes that an extensive body of data exists that does not support the conclusion that OCDD is a toxicant, carcinogen, mutagen, or teratogen. In addition, the commenter states that essentially no toxicological data has been published for OCDF supporting the listing of the compound in Appendix VIII.

EPA disagrees with the commenter's arguments for several reasons. First, the Agency notes, in response to issues raised by the commenter, that as a preliminary matter, dioxin TEFs are irrelevant to EPA's decision to list OCDD and OCDF in Appendix VIII. The criteria in 40 CFR 261.11(a) for listing a substance on the list of hazardous constituents in Appendix VIII are that the constituents be ''shown in scientific studies to have toxic, carcinogenic, mutagenic or teratogenic effects on humans or other life forms.'' The Agency has determined that OCDD and OCDF meet these criteria, independent of any TEF calculation.

There are data from subchronic studies for both OCDD and OCDF which demonstrate dioxin-like effects (Couture *et al.*, 1988; DeVito *et al.*, 1997). Couture *et al.* (1988) is one of the best studies of OCDD and describes not only the effects but the importance of study design in examining the effects of OCDD. Couture *et al.* (1988) demonstrate toxic response of OCDD following subchronic exposures. In addition, this study also provides tissue concentrations at which these effects are observed. Couture *et al.* (1988) demonstrate that the absorption of OCDD is dependent upon both dosing volume and concentration of the solution. The higher the concentration the lower the absorption and the larger the volume (up to 5 ml/kg) the greater the absorption. Hence, high dose single exposures are unlikely to induce significant effects due to the limited absorption of OCDD. In contrast, low dose repeated exposures will allow for the bioaccumulation of OCDD, which eventually leads to biological effects. This is clearly demonstrated in the Couture *et al.* study (1988). The repeated exposure to 1 ug/kg of OCDD in a dose volume of 5 ml/kg produces time dependent effects that also are associated with increasing tissue accumulation of OCDD. OCDD induces hepatic CYP1A1 activity and increases CYP1A1 and CYP1A2 protein. Induction of CYP1A1 occurred as early as two weeks after treatment, and this response increased with time and with hepatic OCDD accumulation. Induction of CYP1A1 is a dioxin-like effect and is indicative of activation of the Ah receptor. Hepatic cytoplasmic vacuolization in the livers was also induced in a time dependent manner, first occurring after 40 doses and increasing in incidence and severity after 65 does of OCDD.

The Agency disagrees with the commenter's argument that these effects are transitory or of uncertain toxicological significance. First, the cytoplasmic vacuolization (lesions) in the liver increased in incidence and severity in a time dependent manner. The increased incidence and severity of these lesions were associated with increasing hepatic concentrations of OCDD. Animals at the last time point examined in the study of Couture *et al.* (1988) demonstrated the highest incidence and severity of these lesions; it is difficult to describe them as ''transitory'' as the commenters suggest, given that the effects worsened over the last five weeks of the study. Indeed, hepatotoxicity can be considered as part of a continuum of events leading to necrosis or carcinogenicity. Demonstration of events early in this continuum, such as cytoplasmic vacuolization, are cause for concern. The commenter also attributes the liver effects to ''nutritional, metabolic or hormonal imbalances.'' Indeed, dioxins are endocrine disruptors and hormonal imbalances are expected to be induced by OCDD and other dioxins. These hormonal imbalances should be considered adverse responses based on our understanding of the endocrine disrupting actions of these chemicals.

The commenter neglects to mention that not only was enzyme activity induced by OCDD in the rats, but CYP1A1 and CYP1A2 protein were also increased as demonstrated by western blot analysis (Couture *et al.*, 1988). These proteins have been implicated in playing important roles in oxidative damage and porphyria (Sinclair *et al.*, 2000). According to Nebert and colleagues ''metabolism of endogenous and exogenous substrates by perhaps every P450 enzyme, but certainly CYP1A1 and CYP1A2 (which are located, in part, in the mitochondrion), have been shown to cause reactive oxygenated metabolite (ROM)-mediated oxidative stress'' (Nebert *et al.*, 2000). Ames and colleagues have clearly demonstrated the role of CYP1A1 in oxidative stress (Park *et al.*, 1996).

The commenter cites a number of studies which suggest that OCDD is not toxic, in contrast to the studies of Couture *et al.* The studies cited are generally inadequately designed to address the toxicity of OCDD. Several studies have demonstrated that, while OCDD is poorly absorbed in biological systems (Norback *et al.* Birnbaum and Couture, 1988; Couture *et al.*, 1988) it can bioaccumulate through repeated exposures to low concentrations. In addition, in the Couture *et al.*, study, it took at least 40 doses over approximately nine weeks before enough of the chemical could accumulate to produce alterations in liver histology. Acute, single exposures to high concentrations of OCDD are unlikely to result in significant accumulation to induce a toxic response since very little of the dose shall be absorbed. In fact, this is one of the conclusions in the McConnell *et al.* study (1978). Hence, the acute studies on the effects of OCDD demonstrated none of the typical signs of dioxin-like toxicity due to the limited absorption of the chemical. Other studies have to a lesser or greater degree attempted subchronic exposures. However, these studies either are too short (Holsapple *et al.* (1986)) or use too concentrated a dosing solution (Norback *et al.*, 1975). In either case, too little OCDD was absorbed to induce effects.

The commenter cites a study by Wermelinger *et al.* (1990) as evidence that OCDD does not induce dioxin-like effects. The USEPA strongly disagrees with this conclusion. This manuscript was published as an extended abstract from the dioxin meetings (Organohalogen Compounds, 1:221–224). These data clearly demonstrate that both OCDD and OCDF administered in the diet result in clear dioxin-like activity. Both OCDD and OCDF resulted

in dose dependent increases in CYP1A1 activity and decreases in thymic atrophy. These responses are clearly the hallmark of dioxin-like effects in experimental animals. The Wermelinger *et al.* study clearly supports the finding of Couture *et al.*, that repeated low dose administration of OCDD results in dioxin-like effects. In addition, both Wermelinger *et al.* and Couture *et al.* provide similar estimates of the relative potency of OCDD, further supporting the inclusion of these chemicals in the TEF methodology.

The commenter cites a study by the National Toxicology Program in which a two year feeding study of OCDD produced no effects. We could not locate any reports of this study in the NTP databases. After contacting the NTP, it was determined that the study of OCDD was halted due to uncertain technical difficulties and no reports were ever prepared on any study of OCDD by the NTP. It is unclear where the commenter obtained its information, since a citation for the report was not provided.

The effects of OCDF are not as well studied as those of OCDD. Recent studies do document that subchronic exposure to OCDF demonstrates dioxin-like activities in mice (DeVito *et al.*, 1997). The subchronic exposure resulted in EROD induction in liver, lung and skin (DeVito *et al.*, 1997) and hepatic porphyrin accumulation (van Birgelen *et al.*, 1996) in these mice. These studies demonstrate that OCDF also possesses dioxin-like properties.

I. What Are the Land Disposal Restrictions Standards for the Newly-Listed Wastes?

1. What Are EPA's Land Disposal Restrictions (LDRs)?

The RCRA statute requires EPA to establish treatment standards for all wastes destined for land disposal. These are the so called ''land disposal restrictions'' or LDRs. For any hazardous waste identified or listed after November 8, 1984, EPA must promulgate LDR treatment standards within six months of the date of identification or final listing (RCRA Section 3004(g)(4), 42 U.S.C. 6924(g)(4)). RCRA also requires EPA to set as these treatment standards ''* * * levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.'' RCRA Section 3004(m)(1), 42 U.S.C. 6924(m)(1). Once a hazardous waste is prohibited, the statute provides only two options for legal land disposal: meet the treatment standard for the waste prior to land disposal, or dispose of the waste in a land disposal unit that satisfies the statutory no migration test. A no migration unit is one from which there will be no migration of hazardous constituents for as long as the waste remains hazardous. RCRA Sections 3004 (d), (e), (f), and (g)(5).

5. What Are the LDR Standards for K174?

In today's rule, we are adopting treatment standards for several forms of dioxins and furans as well as a treatment standard for arsenic. With respect to the dioxins and furans being regulated, our standard requires either treatment by means of combustion (denoted as CMBST in the 40 CFR 268.40 Table) *or* that the specified types of dioxins and furans meet numerical standards prior to land disposal.

For most of the specified types of dioxins and furans (*e.g.,* the hexa, penta, and tetra classes of congeners) as well as arsenic, we are adopting the existing universal treatment standards and no significant issues have been encountered. However, the setting of congener-specific numerical standards for 3 hepta and 2 octa forms of dioxin/furan warrants some additional discussion. In previous rulemakings, we have not adopted treatment standards for these isomers. Several reasons convince us that we should do so in today's rule.

First, with the K174 waste, our risk analysis indicates that, should this waste be mismanaged in a land treatment unit, the hepta- and octa-chlorinated dioxin and furan isomers present high-end deterministic risks that, as described in Section VI.B.1. of today's rule, form the basis for EPA's decision to list this waste as hazardous. Second, studies have attributed dioxin-like toxicity to both the hepta and octa isomers. Based on the TCDD cancer slope factor and TEFs used in the risk analysis for this rule, the slope factors for OCDD and OCDF are effectively 15.6 $(mg/kg\text{-}day)^{-1}$ and the slope factors for the 2,3,7,8-substituted hepta dioxin and furan isomers are effectively 156 $(mg/kg\text{-}day)^{-1}$. These are by comparison 10 and 100 times, respectively, the slope factor for arsenic, an Appendix VIII constituent and known carcinogen.

The carcinogenicity and risk levels of the 5 hepta and octa isomers and their potential conversion to even more toxic isomers by dechlorination or photolytic mechanisms lead us to conclude that adopting specific treatment standards (*i.e.,* numerical or CMBST) for these isomers is warranted for the K174 wastes. Because we typically include the same standards for new listings into those for F039 (multisource leachate) to maintain equivalence within the LDR regulatory structure, we are also adding the same treatment standards in the F039 section of the 268.40 table (see section below on conforming changes).

In summary, today, we are promulgating as final the numerical standards that were proposed for the constituents of concern in the K174 wastewater treatment sludges from the production of ethylene dichloride and vinyl chloride monomer. We are finalizing the numerical standards based on the data received and analyzed at proposal. No comments or additional data were received regarding the achievability of the proposed standards so, therefore, we are adopting the same numerical standards as final. In addition we also are promulgating the option of complying with the technology standard of combustion (CMBST) for the organic constituents present in K174. The final treatment standards are presented in the following table.

TABLE I–1.—TREATMENT STANDARDS FOR K174

Regulated harzardous constituent		Wastewaters	Nonwastewaters
Common name	CAS[2] No.	Concentration in mg/L[1], or technology code[2]	Concentration in mg/kg[3] unless noted as ''mg/L TCLP'', or technology code
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822–39–4	0.000035 or CMBST[4]	0.0025 or CMBST[4]
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562–39–4	0.000035 or CMBST[4]	0.0025 or CMBST[4]
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673–89–7	0.000035 or CMBST[4]	0.0025 or CMBST[4]
HxCDDs (All Hexachlorodibenzo-p-dioxins)	34465–46–8	0.000063 or CMBST[4]	0.001 or CMBST[4]
HxCDFs (All Hexachlorodibenzofurans)	55684–94–1	0.000063 or CMBST[4]	0.001 or CMBST[4]

TABLE I–1.—TREATMENT STANDARDS FOR K174—Continued

Regulated harzardous constituent		Wastewaters	Nonwastewaters
Common name	CAS [2] No.	Concentration in mg/L[1], or technology code [2]	Concentration in mg/kg [3] unless noted as ''mg/L TCLP'', or technology code
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268–87–9	0.000063 or CMBST [4]	0.005 or CMBST [4]
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001–02–0	0.000063 or CMBST [4]	0.005 or CMBST [4]
PeCDDs (All Pentachlorodibenzo-p-dioxins)	36088–22–9	0.000063 or CMBST [4]	0.001 or CMBST [4]
PeCDFs (All Pentachlorodibenzofurans)	30402–15–4	0.000035 or CMBST [4]	0.001 or CMBST [4]
TCDDs (All tetrachlorodi-benzo-p-doxins)	41903–57–5	0.000063 or CMBST [4]	0.001 or CMBST [4]
TCDFs (All tetrachlorodibenzofurans)	55722–27–5	0.000063 or CMBST [4]	0.001 or CMBST [4]
Arsenic	7440–36–0	1.4	5.0 mg/L TCLP

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.
[2] Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.
[3] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1—Technology Codes and Descriptions of Technology-Based Standards.
[4] For these wastes, the definition of CMBST is limited to: (1) Combustion units operating under 40 CFR 266, (2) combustion units permitted under 40 CFR Part 264, Subpart O, or (3) combustion units operating under 40 CFR 265, Subpart O, which have obtained a determination of equivalent treatment under 268.42(b).

Regarding the use of combustion (CMBST) for the regulated organic constituents, commenters requested that we allow combustion as an alternative to the proposed (and now final) numerical treatment standards. This is consistent with the approach taken for F024, a set of previously listed chlorinated aliphatic wastes (62 FR 26000–3, May 12, 1997). We agree and are promulgating the requested change. As a consequence, facilities treating K174 wastes will have the option of complying with either the numerical standards promulgated or the technology standard of CMBST for the regulated organic constituents.

Adopting combustion as an alternative to the numerical standards serves a general LDR programmatic interest as well. We typically promulgate numerical performance standards to allow facilities maximum flexibility in determining for themselves how best to achieve compliance with the LDR treatment standards. If we promulgate a technology-specific treatment standard (such as combustion) instead, this flexibility is lost. In today's rule, by promulgating combustion as an alternative compliance option, we are not disturbing the degree of flexibility afforded to facilities; rather, we are maintaining or enhancing it.

However, when we specify a treatment technology like CMBST as the LDR standard, the analytical elements of compliance change. Typically, when we specify a method of treatment (like CMBST), no testing and analysis of treatment residuals is required because we are confident that use of the specified technology will reduce the level of target constituents (organics in the case of CMBST) to levels that minimize threats to human health and the environment. For K174, the regulated organic constituents of concern are dioxin/furan congeners, which, if combustion is used for treatment, will not be individually analyzed in the treatment residue (*e.g.,* the ash).

Several factors suggest that such individual constituent analysis is not necessary and that specifying CMBST is appropriate. First, if combustion in well designed and operated units is used to treat K174, the structural features of dioxin/furan congeners (*e.g.,* the presence of the oxygen in the ring formation) suggest that all dioxins and furans in K174 should be substantially destroyed by the high temperature combustion process that would have to be used.

Second, we ensure that combustion will occur in well designed, operated, and highly regulated units. Part of the CMBST standard itself (as modified in today's rule for K174 waste) is that combustion of K174 must occur either in units subject to the standards in 40 CFR part 264 subpart O or 40 CFR part 266, subpart H, or in interim status incinerators where the owner/operator has made a specific demonstration that the unit can operate in a manner equivalent to a part 264 or part 266 combustion unit. The type of facilities that can combust K174 is thereby restricted to highly-regulated RCRA units (or, after the current transition period, Clean Air Act permitted units subject to MACT standards). This will ensure that combustion is done only in a closely-regulated facility and in a manner that provides protection for human health and the environment. More specifically, combustion will occur only in units subject to the recently upgraded dioxin/furan emission standards of the MACT Hazardous Waste Combustion Rule as well as standards for other hazardous air pollutants, such as metals (64 FR 52828, September 30, 1999). Given this level of regulation and permitting oversight, we do not find the need to impose additional and, with respect to other dioxin/furan congeners, unique analytical burdens on the regulated community regarding these 5 hepta and octa congeners.

Of course, K174 does have metal constituents of concern, which would not be treated by the combustion process and that would remain in the combustion treatment residuals (*e.g.,* ash and scrubber water). We therefore are retaining metal treatment standards for all circumstances, *i.e.,* whether or not the treatment used by a facility involves combustion. When combustion is used to treat the organics to achieve LDR compliance, facilities still will need to conduct compliance testing and analysis for all regulated metal constituents in the combustion treatment residuals prior to disposal. This approach is patterned after EPA's promulgation of a similar alternative treatment standard for F024 (wastes from production of chlorinated aliphatics) and also for F032 (wastes from wood preserving processes). See 55 FR 22580–22581, June 1, 1990. See also 62 FR 26000–26003, May 12, 1997.

Another issue warranting brief discussion concerns a related, but in reality quite different, issue. Commenters, in general, oppose the regulation of the additional congeners individually, and state that the existing dioxin and furan congeners covered under UTS standards are sufficient to serve as surrogates for the effective treatment of the 5 hepta and octa

congeners. These commenters would omit the 5 hepta and octa congeners entirely from list of regulated hazardous constituents for which LDR treatment standards are set.

We do not agree with this approach. Absent a specific requirement that hepta and octa congeners be treated (*i.e.,* by including them as regulated hazardous constituents for K174 in the table in 268.40), generators would not be obliged to determine the presence of these congeners. Without such a determination, it is certainly possible that generators would not engage in any organic-oriented treatment at all. For example, if the other dioxin/furans are below treatment levels, generators would not have to combust the K174 waste. Given our concern about the potential threats posed to human health and the environment by dioxins and furans, we are choosing to require treatment wherever harmful congeners are present above the treatment standard. Also, the formation pathways for dioxins and furans are highly waste specific, such that we have no way of knowing the concentration of one isomer based on the presence or absence of another.

We conclude that a surrogate approach without compliance testing for the 5 hepta and octa isomers, such as that which would be the consequence of the commenters' views, would not be adequate. Therefore, with today's rule, we are promulgating treatment standards for each of the 5 hepta and octa dioxin and furan isomers identified in the proposal.

3. What Are the LDR Treatment Standards for K175?

We proposed two options for establishing treatment standards under the LDRs for the mercury-bearing waste to be listed as K175 (64 FR 46521). The first option would have included three treatment standards that would essentially be the same as those for other mercury-bearing wastes. These standards are:

(1) for K175 wastes containing greater than 260 mg/kg total mercury, the treatment would be recovery of the waste's mercury content via roasting and retorting (RMERC);

(2) for K175 RMERC residues containing less than 260 mg/kg total mercury, the residues would have to meet a numerical standard of 0.2 mg/L TCLP mercury prior to land disposal; and

(3) for K175 wastes and non-RMERC treatment residues containing less than 260 mg/kg total mercury, these wastes and treatment residues would have to meet a numerical standard of 0.025 mg/L TCLP mercury prior to land disposal

We also proposed that wastes and residues in this last category be treated so that a pH of 6.0 or less is achieved prior to land disposal, and that disposal of these wastes and residuals be restricted to landfill cells where only wastes with similar pH properties are co-disposed.

Because of the potential difficulty in roasting and retorting K175 waste, the Agency requested performance data, and solicited comment on a second treatment standard option. This option would require that K175 waste exhibit no more than 0.025 mg/L TCLP mercury for disposal without any requirement that the waste be roasted or retorted.

The K175 wastes are typically much greater than 260 mg/kg mercury, ranging from approximately 3,000 to 17,700 mg/kg mercury, and are greater than one percent in total organic constituents.[55] As noted in the proposal (64 FR at 46521), when these wastes (high mercury and 1% or more organics) exhibit the toxicity characteristic, they would already be subject to requirements of either RMERC (roasting and retorting) or IMERC (incineration in units operated in accordance with RCRA incinerator standards).

Commenters questioned the ability and willingness of commercial retorting and roasting treatment facilities to accept K175 wastes, citing two factors. First, with a K175 mercury content of approximately one percent, commercial retorters may not recover enough mercury to be cost-effective, and second, most commercial retort facilities may not be able to accept wastes in excess of 500 ppm Appendix VIII organics and still comply with their RCRA permitting limits (USEPA, 1999c).[56] This information suggests that adopting an RMERC standard for K175 may present significant practical difficulties that could not be overcome in the near term.

In addition to the practical points made by commenters, no roasting and retorting performance information for the subject waste or even a similar waste was submitted in comment. Since the Agency itself lacks data on the properties of the subject waste following roasting and retorting, we are not able to persuasively conclude that this type of treatment technology can achieve the level of mercury removal desired. In addition, we have no firm basis for determining whether the RMERC residues from treating K175 could meet the existing 0.2 mg/L TCLP total mercury standard so that the RMERC residues could be land disposed. We are therefore disinclined to adopt a K175 treatment standard that involves mandatory roasting and retorting.

Conversely, with respect to the second option proposed for K175 treatment standards, several factors suggest that this is a better approach to adopt. First, as discussed above, the commercial roasting and retorting alternatives may not exist. Second, the physical properties of the waste indicate that the waste can readily achieve 0.025 mg/L TCLP mercury. Testing conducted for EPA shows the waste sample tested readily achieved 0.025 mg/L TCLP mercury, as the sample tested leached only 0.0027 and 0.0058 mg/L total mercury at pH 4 and 6 respectively.[57]

Third, at this point in time, the Agency is reviewing the appropriateness of thermal treatment and recovery of mercury in all forms of hazardous waste, not solely K175. See 64 FR 28949, May 28, 1999. Therefore, requiring RMERC for K175 at this juncture may prove to be somewhat premature even if adequate data and assurance of commercial treatment capacity were to exist. Because we have an acceptable and effective treatment alternative, we are able to postpone having to make a policy judgment about promoting or requiring mercury recovery and recycling in today's rule (which would just apply to K175) until we are better prepared to resolve the longer term issues of mercury recovery in a comprehensive and more environmentally effective manner.

Based on all these factors, the Agency has selected stabilization as the appropriate technology upon which to base our K175 treatment standard, and is setting 0.025 mg/L TCLP mercury together with control of the pH of co-disposed wastes (as discussed below) as the land disposal restrictions for K175. This standard may be achieved by any technology (other than impermissible dilution), and does not prohibit roasting/retorting should it be shown to achieve the performance standard. While no data were provided in response comment on this proposal, subsequently a vendor has indicated a willingness to demonstrate that the

[55] See 64 FR at 46510; see also Table 4–14 from Listing Background Document for Chlorinated Aliphatics Listing Determination (Proposed Rule) (USEPA, 1999c).

[56] In accordance with 40 CFR 266.100, a ''metals recovery'' unit such as a commercial mercury retorter is conditionally excluded from most RCRA permit requirements provided that the facility complies with certain operating restrictions, one being a prohibition against accepting wastes in excess of 500 ppm Appendix VIII organics.

[57] Paul Bishop, Renee A. Rauche, Linda A. Rieser, Markram T. Suidan, and Jain Zhang; ''Stabilization and Testing of Mercury Containing Wastes,'' Department of Civil and Environmental Engineering, University of Cincinnati, March 31, 1999.

waste could be retorted successfully.[58] Should subsequent testing demonstrate that retorting produces a waste form better suited for stabilization and having less potential for long-term mercury release, the standards promulgated today could potentially be adjusted as part of the ongoing re-evaluation of mercury waste treatment technologies. See 64 FR 28949, May 28, 1998. Any modification of today's promulgation would be the subject of a future proposal.

Other comments focused upon the proposed requirement that disposal of K175 wastes and treatment residues which are less than 260 mg/kg total mercury be restricted to landfill cells into which disposal of wastes in excess of pH 6.0 is prohibited. Commenters noted that the waste could readily be treated to a pH <6.0 but stated that, given the relative small quantity of waste generated, monofill disposal of K175 or co-disposal only with similar wastes would not be feasible. One commenter suggested macroencapsulation of the K175 waste as is currently performed for debris would provide a viable alternative to achieve isolation of the waste from surrounding, potentially adverse landfill conditions. Subsequent discussions with Chemical Waste Management Inc. confirm that acidic wastes make up only a small portion of hazardous wastes and that it would not be feasible to manage a small cell for only K175 or for K175 and only similar wastes of pH <6.0.[59]

Control of the disposal site conditions is essential to ensure that the mercury present in this waste remains immobile so that long-term threats to human health and the environment are minimized. The solubility measurements conducted on the waste for EPA are consistent both with results found in the mercury literature [60] as well as with calculations from a geochemical stability model for mercury sulfide complexes.[61] The testing and subsequent solubility calculations confirm that above pH 6.0, increased mobility of mercury as mercuric sulfide/hydrogen sulfide complexes occurs with increasing pH and sulfide concentration.

Therefore, we find that to minimize the potential future threats from mercury mobilization, our treatment standard must ensure that pH is maintained at 6.0 or less for K175 waste. Because we agree with the commenter's suggestion about the practical advantages of macroencapsulation in some situations, we are finalizing treatment standards that require, prior to land placement: (1) Wastes to be at pH 6.0 or less, and placement is restricted to landfill cells in which disposal of other wastes in excess of pH 6.0 is prohibited; or (2) wastes to be at pH 6.0 or less, and macroencapsulation per the requirements of 40 CFR 268.45. The pH restriction in the latter standard is to ensure that mercury is not in a mobile form should the macroencapsulation vessel fail over time. This additional level of protection is part of the best demonstrated and available treatment (BDAT) needed to minimize the threats posed by potential mobilization of the mercury within a landfill over the long-term. Furthermore, macroencapsulation itself is not viewed as BDAT (except in unusual cases such as debris) because it merely isolates the waste from the environment for a period of time and does not actually effect any treatment. We have amended the regulations promulgated today accordingly.

Affected parties and other stakeholders should note that we may revisit the requirement for macroencapsulation should we determine, at some future date, that the generation rate of materials requiring disposal at low pH has increased to the point where maintaining a separate cell for these wastes is an operationally feasible option for a landfill.

We did not pursue to regulatory conclusion other potential avenues by which mercury mobilization could be affected for a number of reasons. Two avenues would be to regulate the sulfide content of the waste itself or the sulfide concentration in the disposal environment, or both. These approaches are fraught with technical and implementation difficulties. For example, chemical and biological processes within the disposal unit may reduce sulfate to sulfide at varying rates depending on in situ conditions. Also, current test methods do not readily distinguish free sulfide from that bound as mercuric sulfide in the waste. Hence, adopting sulfide limits on incoming K175 wastes or mandating in situ sulfide levels would likely not be reliable or implementable means of ensuring mercury immobility. On the other hand, pH can readily be determined using the existing procedure SW–846 Method 9045C. Thus, practical considerations also favor limitation of waste pH at the time of disposal as a more viable option to control potential mobilization of mercury once the wastes are disposed.

In summary, for K175 waste, we are finalizing a treatment standard requiring that, prior to land disposal: (1) The waste must meet a TCLP leachate concentration of 0.025 mg/L mercury or less, (2) the waste must be at or below a pH 6.0 when disposed, and (3) the wastes must be macroencapsulated or, if not, placement is restricted to landfill cells in which disposal of other wastes in excess of pH 6.0 is prohibited. We are promulgating these land disposal restriction requirements for K175 to ensure the long term protection of human health and the environment.

4. What Are the Conforming Changes to F039 and Universal Treatment Standards?

We proposed that the constituents 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-heptachlorodibenzofuran; 1,2,3,4,7,8,9-heptachlorodibenzofuran; 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (OCDD); and 1,2,3,4,6,7,8,9-octachlorodibenzofuran (OCDF) be added to the list of regulated constituents in hazardous waste F039 multisource leachate. The F039 waste code applies to hazardous waste landfill leachates in lieu of the original waste codes when multiple waste codes would otherwise apply. F039 wastes are subject to numerical treatment standards equivalent to UTS. We proposed these additions to the constituents regulated by F039 to maintain the implementation benefits of having one waste code for multisource leachate.

Commenters correctly noted that the Agency did not add the constituents of the carbamate waste listing to F039 (61 FR 15566), an issue not directly within the purview of this rulemaking. As a result, multisource F039 leachates that also contain one of the listed carbamate wastes must be treated to comply with carbamate hazardous waste codes to meet the 40 CFR 268.48(c) requirement for treatment to achieve the lowest treatment standard for constituents of concern. Therefore, such wastes would be subject to multiple codes; the very situation F039 sought to eliminate. The Agency's intent upon promulgating F039 was that the single F039 waste code would replace the multiple codes to which such wastes were then subject (52 FR 22619, June 1, 1990). To limit

[58] Personal communication with SepraDyne Corporation representatives.

[59] Memorandum from Ross Elliott, U.S. EPA Office of Solid Waste, to RCRA Docket, ''Summary of Phone Call Between EPA and Carl Carlsson, Chemical Waste Management Inc.,'' July 12, 2000.

[60] See 64 FR at 46522. See also Jenny Ayla Jay, Francois M. M. Morel, and Harold F. Hemond, Mercury Speciation in the Presence of Polysulfides, Environmental Science and Technology, 2000, Vol. 34, No. 11, pages 2196–2200.

[61] Memorandum from John Austin to Ross Elliott, May 12, 2000.

any further proliferation of circumstances where treatment standards in addition to F039 may apply, we are promulgating the additional K174 dioxin and furan constituents of concern as proposed. Resources permitting, conforming changes may be proposed for the carbamate waste constituents at some future date.

We also proposed that the numerical standards derived for 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin; 1,2,3,4,6,7,8-heptachlorodibenzofuran; 1,2,3,4,7,8,9-heptachlorodibenzofuran; OCDD; and OCDF be added to the Table of Universal Treatment Standards (UTS) at 40 CFR 268.48. These constituents contribute to the overall risks that formed the basis for EPA's decision the EDC/VCM sludges pose a substantial risk to human health and the environment, as shown in the risk assessment accompanying this rule. Their presence in other hazardous wastes should be mitigated by effective treatment to avoid similar risks after land disposal. By adding these numerical standards for five dioxin and furan congeners, we are ensuring that treatment of hazardous waste addresses these risks.

Following the adoption of today's rule, all characteristic wastes that have these constituents as underlying hazardous constituents above the UTS levels will require treatment of these additional constituents before land disposal. This is in direct accord with our mandate under the LDR treatment program to ''substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.'' [62]

Commenters in general objected to changes to UTS because of their perceived cost of the analysis and concerns over available treatment capacity, which will be discussed in the following section. We were not persuaded by the commenters' arguments. Waste generators must already comply with treatment requirements for tetra-, penta-, and hexa- chlorinated dibenzo-p-dioxin and dibenzofuran congeners. Much of the labor and cost of analysis of the currently regulated congeners can not be separated from the costs associated solely with the hepta and octa congeners because the analysis of these 5 additional isomers is accomplished intrinsically as part of the overall method and is not separable. Hence, sample preparation, labor, and instrument time are not increased by including these 5 additional congeners.

Commenters also suggest that treatment and control of the existing regulated dioxin/furan congeners provides adequate protection against potential risks associated with the hepta and octa congeners. Commenters appear to recognize that the hepta- and octa-dioxin/furan congeners contribute significantly to the overall carcinogenicity of K174 wastes and waste treatment residues, and that they also must be controlled if human health and the environment are to be protected. In essence, these commenters would have us make broad assumptions for all situations about the ancillary impacts of treating and controlling certain dioxin and furan congeners, but not others that nevertheless present significant risks to human health and the environment.

We are not in a position to make such broad assumptions regarding our degree of control over dioxin and furan congeners that present significant risks. We have chosen to take a more conservative tack, providing treatment standards that, when met, ensure that long-term threats to human health and the environment are minimized (RCRA Section 3004(m)). For reasons noted earlier (*e.g.,* carcinogenicity of these congeners, dechlorination or photolytic changes to more toxic congeners, and assuring treatment if these congeners are present), we conclude that direct control of these 5 hepta and octa congeners is warranted.

For these reasons, the Agency is promulgating the proposed additions to the Table of Universal Treatment Standards (UTS) at 40 CFR 268.48 and to the list of regulated constituents for F039, multisource leachate from hazardous waste, in 40 CFR 268.40.

J. Is There Treatment Capacity for the Newly-Listed Wastes?

1. Introduction

Under the land disposal restrictions (LDR) determinations, the Agency must demonstrate that adequate commercial capacity exists to manage listed hazardous wastes in compliance with BDAT standards before the Agency can restrict the listed waste from further land disposal. The Agency performs capacity analyses to determine the effective date of the LDR treatment standards for the proposed listed wastes. This section summarizes the results of EPA's capacity analysis for the wastes covered by today's rule. For a detailed discussion of capacity analysis-related data sources, methodology, and detailed responses to comments for each waste covered in this rule, see USEPA, 2000f [63] (*i.e.,* the Capacity Background Document).

EPA's decisions on whether to grant a national capacity variance are based on the availability of alternative treatment or recovery technologies capable of achieving the prescribed treatment standards. Consequently, the methodology focuses on deriving estimates of the quantities of newly-listed hazardous waste that will require either commercial treatment or the construction of new on-site treatment or recovery as a result of the LDRs. The resulting estimates of required commercial capacity are then compared to estimates of available commercial capacity. If adequate commercial capacity exists, the waste is restricted from further land disposal unless it meets the LDR treatment standards prior to disposal. If adequate capacity does not exist, RCRA Section 3004(h)(2) authorizes EPA to grant a national capacity variance for the waste for up to two years or until adequate alternative treatment capacity becomes available, whichever is sooner.

2. Capacity Analysis Results for Newly Identified Wastes

In conducting the capacity analysis for the wastes newly-listed by today's rule, EPA examined data on waste characteristics and management practices gathered for the purpose of the chlorinated aliphatics hazardous waste listing determinations and on available treatment or recovery capacity for these wastes. The data sources for the analyses are primarily the 1992 RCRA Section 3007 survey, the follow-up survey specific to these wastes conducted in 1997 (see the docket for this rule for more information on these survey instruments), the available treatment capacity data submission that was collected in the mid-1990's, and the 1997 Biennial Report (BR). EPA analyzed the capacity-related information from these data sources, reviewed the public comments received in response to the proposed rule, and corresponded or met with several commenters to obtain more specific information.

We identified the following annual quantities of the newly-listed wastes that are generated and therefore the quantities of waste that potentially could require commercial treatment. Information available to the Agency indicates that up to 6,100 tons of K174 per year could potentially require

[62] RCRA Section 3004(m).

[63] U.S. EPA. 2000f. Background Document for Capacity Analysis for Land Disposal Restrictions: Newly Identified Chlorinated Aliphatics Production Wastes (Final Rule), September.

commercial treatment capacity. The Agency notes, however, that because EPA is finalizing a conditional listing approach for the K174 wastewater treatment sludges under which these wastes are not hazardous if disposed of in a subtitle C or a non-hazardous waste landfill, it is possible that little or no hazardous waste treatment capacity will be required for this waste. In addition, approximately 130 tons of K175 are generated annually and potentially could require commercial treatment capacity. EPA has determined that there is adequate commercial treatment or recovery capacity available to treat both of these wastes.

For wastewaters from chlorinated aliphatic production processes (proposed as K173), some commenters requested a national capacity variance for this waste in response to the proposed rule. Since EPA is finalizing a decision not to list wastewaters from chlorinated aliphatic production processes as hazardous (as discussed in section VI.A), there is no need for a capacity variance determination for this waste stream.

EPA proposed not to grant a capacity variance for K174 waste (EDC/VCM wastewater treatment sludge). No comments were received regarding the variance determination, available treatment or disposal capacity, or the quantity of the waste potentially requiring treatment, either in nonwastewater or wastewater forms. As described in section VI.I above, we are finalizing the proposed numerical treatment standards as well as an alternative treatment standard of hazardous waste combustion. We estimate that the commercially available sludge and hazardous waste combustion capacity is at least 300,000 tons per year (see details in the Capacity Background Document) and therefore sufficient to treat any K174 hazardous wastes that could require treatment.

As discussed earlier in this preamble, EPA has identified (as a result of public comments) that one facility may generate K174 in a surface impoundment as a result of today's rule. The facility may remove K174 waste before the effective date of the new listing and therefore may not be subject to LDR requirements.[64] The impoundment can also be retrofitted, closed, or replaced with tank systems. If the impoundment continues to be used to actively manage K174 waste, the unit will be subject to subtitle C requirements. In addition, any hazardous wastes that are actively managed in an impoundment (other than wastes removed from an impoundment as part of a one-time removal) after the effective date of today's rule are subject to the land disposal prohibitions.[65] EPA expects that the one facility currently managing chlorinated aliphatic wastewaters in surface impoundments (and which therefore may potential manage EDC/VCM sludges in impoundments after the effective date of today's rule) will cease to do so before the effective date of this rule.

However, as described earlier in this preamble (see section VI.B.2.b.vii) regarding the listing determination for EDC/VCM wastewater treatment sludges, this facility (or others) could manage newly-listed K174 in surface impoundments, provided they are in compliance with the appropriate standards for impoundments (40 CFR parts 264 and 265 subpart K) and the special rules regarding surface impoundments (40 CFR 268.14). EPA notes that those provisions require (by reference) basic groundwater monitoring (40 CFR parts 264 and 265 subpart F), management, and recordkeeping, but are afforded up to 48 months to retrofit to meet minimum technological requirements (see RCRA Section 3005(j)(6)(A)).

Based on the foregoing, EPA concludes that sufficient treatment or disposal capacity is available to manage K174 waste generated after the effective date of the LDR treatment standards either on site or offsite, even if generators seek offsite management for all K174 wastes in a permitted subtitle C disposal or treatment unit. Therefore, EPA is finalizing its decision not to grant a capacity variance for wastewater and nonwastewater forms of K174.

With respect to K175 waste, several commenters raised issues with regard to permitting requirements and constraints of commercial treatment facilities, including the ability of commercial facilities to accept nonwastewater forms of K175 waste and comply with the proposed land disposal restrictions of RMERC. As discussed earlier, EPA is finalizing a numerical treatment standard for this waste (in conjunction with other pH-related restrictions and macroencapsulation), which has been demonstrated to be achievable using stabilization. Sufficient commercial stabilization, pH, and macrocapsulation treatment capacity exists to treat and dispose of mercury-containing wastes and to meet the final treatment standards adopted today. In addition, the one facility generating K175 uses a sulfide precipitation technology and therefore may be able to meet the numerical mercury concentration standard upon generation of the waste. Depending on their ability to control pH and to perform on-site macrocapsulation, no other commercial treatment might be necessary prior to off-site hazardous waste landfilling. EPA notes that generators can use any treatment technology (except impermissible dilution) to meet the numerical mercury concentration and pH standards promulgated today.

EPA proposed that the K175 waste (about 130 tons per year) be co-disposed in a landfill with other wastes with similar pH (6.0 or less). Commenters did not indicate the existence of any technical difficulties in meeting the additional pH requirement. Furthermore, they did not provide any data or information on the issue of available monofill disposal capacity for this waste or landfill co-disposal with similarly acidic (pH 6.0 or less) wastes. Based on previous activities in the commercial sector as well as the lack of adverse comment, we find no reason to doubt that owners of commercial landfills can and at some point will create a special cell based on customer's needs, compliance conditions, and contract negotiation.

However, as noted earlier, we understand from one stakeholder that facilities with hazardous commercial landfill capacity may not have sufficient volumes of similarly acidic wastes to make it cost-effective to designate an entire unit or cell for disposal of only low pH wastes. We have therefore adopted an alternative that allows land disposal in other types of landfill cells following macroencapsulation of the waste (assuming the waste meets other applicable standards, such as Hg concentration and pH 6.0 or less). Based on a discussion with a hazardous waste management facility,[66] we find that macroencapsulation of K175 waste can be made readily available for K175 waste. Based on available data and analyses, EPA has therefore determined that sufficient commercial treatment and disposal capacity exists to manage K175 waste to meet the LDR standards, and we are today finalizing our decision not to grant a capacity variance for

[64] If the waste is actively managed in unretrofitted impoundments (*i.e.,* impoundments not satisfying the minimum technology requirements specified in RCRA sections 3004(o) and 3005(j)(11)) after the effective date of today's rule, it would be land disposed in a prohibited manner.

[65] See RCRA § 3004(m)(1) ''Simultaneously with the promulgation of regulations under subsection (d), (e), (f), or (g) prohibiting one or more methods of land disposal of a particular hazardous waste * * * promulgate regulations specifying those levels or methods of treatment * * *''

[66] Personal communication with Carl Carlson, Chemical Waste Management Inc.

wastewater or nonwastewater forms of K175.

In summary, we conclude that sufficient capacity exists for the management of both wastewater and nonwastewater forms of K174 and K175. For K174 and K175 wastes, the customary time period of six months is sufficient to allow facilities to determine whether their wastes are affected by this rule, to identify onsite or commercial treatment and disposal options, and to arrange for treatment or disposal capacity if necessary. LDR treatment standards thus will become effective when the listing determinations become effective for the wastes covered under this rule—the earliest possible date. This conforms to RCRA section 3004(h)(1), which indicates that land disposal prohibitions must take effect immediately when there is sufficient treatment or disposal capacity available for the waste.

Further, for soil and debris contaminated with the newly-listed wastes, EPA proposed not to grant a national capacity variance. EPA received no comments regarding this issue. We expect that the majority of contaminated soil and debris will be managed on-site and therefore would not require substantial off-site commercial treatment capacity. Therefore, EPA is not granting a national capacity variance for hazardous soil and debris contaminated with the newly listed wastes covered under this rule. LDR treatment standards for K174 and K175 hazardous soil and debris will therefore become effective when these listing determinations become effective.

Based on the 1992 RCRA section 3007 questionnaire and the 1997 updated responses, there were no data showing underground injection of the newly-listed wastes or indicating that the newly-listed wastes are mixed with radioactive wastes or with both radioactive wastes and soil or debris. EPA did not receive comments indicating that these wastes are underground injected or that they are mixed with radioactive wastes or with both radioactive wastes and soil or debris. Therefore, EPA is not granting a national capacity variance for K174 and K175 wastes that might be underground injected, mixed with radioactive wastes, or mixed with both radioactive wastes and soil or debris. LDR treatment standards for K174 and K175 underground injected and mixed wastes (if any exists) will therefore become effective when these listing determinations become effective.

Finally, EPA may consider a case-by-case extension to the effective date based on the requirements outlined in 40 CFR 268.5, which includes a demonstration that adequate alternative treatment, recovery, or disposal capacity for the petitioner's waste cannot reasonably be made available by the effective date due to circumstances beyond the applicants' control, and that the petitioner has entered into a binding contractual commitment to construct or otherwise provide such capacity.

3. Available Treatment Capacity for Other Wastes Subject to Revised UTS and F039 Standards

Several commenters expressed concern that EPA did not adequately consider the need for alternative treatment capacity for other hazardous wastes subject to the proposed revisions to the UTS and F039 (multiple source leachate) standards. Such additional treatment would be necessary to meet the treatment standards for the five additional dioxin and furan congeners being added to the UTS table (§ 268.48) and the list of regulated constituents in F039 (§ 268.40). Commenters noted that EPA must consider the potential need for national capacity variances by determining what fraction of the hazardous wastes are required to meet these new requirements, the appropriate means of treatment (if any), and the sufficiency of national treatment capacity for these wastes.

When changing the treatment requirements for wastes already subject to LDR (including F039 and characteristic wastes), EPA no longer has authority to use RCRA section 3004(h)(2) to grant a capacity variance to these wastes. However, EPA is guided by the overall objective of section 3004(h), namely that treatment standards which best accomplish the goal of RCRA section 3004(m) (to minimize threats posed by land disposal) should take effect as soon as possible, consistent with availability of treatment capacity. Our task is therefore to balance the points raised by commenters against the clear statutory direction that treatment standards, such as those at issue here, should be imposed in the shortest feasible time provided capacity is available.

With respect to the issue of capacity availability, we find first that only a limited quantity of hazardous waste leachate is expected to be generated from the disposal of newly-listed K174 and K175 wastes and added to the generation of leachates from other multiple restricted hazardous wastes already subject to LDR. Absent any data from commenters suggesting to the contrary, we have no reason to delay imposition of the LDRs on this ground.

Second, with respect to the other, and potentially much larger volumes of, wastes that would be affected, we evaluated the universe of wastes that could be impacted by today's revisions to the lists of regulated constituents for F039 and UTS. Commenters themselves did not supply any information on these volumes in support of their generalized claims of insufficient capacity or their views that delaying the effective date of these treatment standards is warranted. However, based on 1997 Biennial Report data and some assumptions of waste compositions and their potential for land disposal, we were able to estimate the potential need for additional treatment. For example, EPA estimated an upper bound of 68,000 tons per year of the nonwastewaters mixed with other waste codes, the F039 leachate from which would be potentially impacted by the revisions to the F039 treatment standards. In a similar fashion, we estimated that no more than 130,000 tons per year of characteristic nonwastewaters potentially could be affected by the promulgated changes to the UTS.

Of course, these upper bound estimates are most likely very overstated since only a portion of each estimated waste volume may contain one or more of the five congeners at concentrations above the numerical concentrations specified in the UTS table and the F039 list. Available hazardous waste landfill leachate characterization data from EPA's Office of Water indicate that only one of 15 samples analyzed shows leachate concentration of OCDD exceeding the numerical UTS level adopted today. Any concentrations below these numerical standards would not trigger any treatment obligation or the concomitant need for treatment capacity. (See the Capacity Background Document for detailed analysis.) Furthermore, EPA does not anticipate that waste volumes subject to treatment for F039 or characteristic wastes would significantly increase because waste generators already are required to comply with the treatment requirements for tetra-, penta-, and hexa-chlorinated dioxin/furan congeners. The volumes of wastes for which additional treatment is needed *solely* due to the addition of the five new congeners to the F039 and UTS lists is therefore expected to be very small. Both of these factors indicate the highly conservative nature of our volume estimates.

However, even though our volume estimates are highly conservative and overstated, we find that there still would be no shortage of treatment capacity. Based on data submittals in the mid-1990's and the 1997 Biennial

Report, EPA has estimated that approximately 37 million tons per year of commercial wastewater treatment capacity are available, and well over one million tons per year of liquid, sludge, and solid commercial combustion capacity are available. These are well above the quantities of wastewater and nonwastewater forms of F039 or characteristic wastes potentially requiring treatment for the 5 hepta and octa isomers even under the conservative screening assumptions described above. We find therefore that there is sufficient treatment capacity for these wastes to ensure that the wastes meet today's revisions to the UTS and F039 treatment standards. For this reason, EPA is finalizing its decision not to delay the effective date for adding the five hepta-and octa-dioxin and furan congeners to the lists of constituents for F039 and UTS. As with the other treatment standards being promulgated today, these revised F039 and UTS standards will become effective six months after the date of promulgation, the same date on which the K174 and K175 listing will become effective. This will provide sufficient time to allow facilities to determine whether their wastes are affected by this rule, to identify onsite or commercial treatment and disposal options, and to arrange for treatment or disposal capacity if necessary.

VII. What Is the Economic Analysis of Today's Final Rule?

A. What Is the Purpose of the Economic Analysis?

In 1999, the EPA presented an initial economic analysis (in the form of both a preamble discussion, and a supplementary ''Economics Background Document'(USEPA, 1999b), for public review in support of the RCRA K173/K174/K175 listing proposed rule (64 **Federal Register**, 46517–46519, August 25, 1999). The primary purpose of the 1999 economic analysis was to estimate regulatory compliance costs associated with the proposed rule. Secondary purposes were to provide (1) descriptive information about the economic sectors (*i.e.* the chemical industry) and other types of facilities potentially affected by the proposed rule, and (2) descriptive information about the economic activities involving chlorinated aliphatic hydrocarbon chemicals (CAHCs).

As a result of both public comments and changes to the rule, EPA revised the 1999 ''Economics Background Document'' (USEPA 1999b). In comparison to the 1999 economic analysis, the primary objectives of this final economic analysis are: (1) to present and respond to the public comments received about the economic analysis for the 1999 proposed rule, and (2) to estimate the impacts of the final rule. The findings for each objective are summarized below.

The Economics, Methods, and Risk Assessment Division (EMRAD) of EPA's Office of Solid Waste (OSW) conducted the economic analyses for both the 1999 proposed rule, and for this final rule. The ''Economics Background Document'' (USEPA, 2000a) [67] in support of this final rule, is available to the public from the EPA's RCRA Docket (refer to the introduction to this preamble for instructions on how to obtain a copy). References to statements below pertaining to facts, data, assumptions and other types of information, are identified in the final rule background document.

B. How Did the Public Participate in the Economic Analysis?

In conjunction with the 1999 proposed rule (64 FR 46517), EPA requested public comment on the following eleven specific information elements pertaining to the data, assumptions, design, accuracy, representativeness and completeness of the initial ''Economic Background Document'' (dated 30 July 1999, 127pp., which is available over the Internet at *http://www.epa.gov/epaoswer/hazwaste/id/chlorali/economic.pdf*): (1) Economic study design, (2) industry facility universe, (3) affected waste volumes/sources, (4) industry sector profile, (5) baseline (current) waste management practices, (6) regulatory compliance waste management, (7) compliance facility process modifications, (8) waste management costs, (9) regulatory impact financial benchmarks, (10) economic analysis data sources, and (11) other impact considerations. As described elsewhere in this preamble, EPA received a total of 20 sets of public comments on the 1999 proposed rule, of which 14 commenters offered a total of 61 remarks on the 1999 economic analysis. EPA presents and addresses each comment in the ''Response to Public Comments'' background document (USEPA, 2000g) [68], also available from the EPA RCRA Docket.

For purpose of summary here, the 61 remarks made by the 14 commenters who targeted the 1999 economic analysis may be grouped according to six topics: (1) K173 compliance cost estimates, (2) K174 compliance cost estimates, (3) K175 compliance cost estimates, (4) economic analysis framework, (5) overall magnitude of rule cost, and (6) industry characterization. Many of the commenters made remarks about multiple economic analysis topics (as well as about other aspects of the proposed rule, such as preamble language and risk analysis). Forty-two of the 61 remarks were directed at the EPA's K173 compliance cost estimate, stating that EPA's 1999 estimate was too low for a variety of reasons, including lack of complete descriptive information about all possible wastewater tanks affected, as well as incomplete assessment of all potential costs involved in retrofitting wastewater tanks with covers and tank air emission control devices. However, because the K173 listing is dropped from the final rule, EPA has dropped the K173 cost estimate from the economic analysis, rather than revise it. Otherwise, EPA has incorporated into the final rule economic analysis, information contained in other public comments addressing the K174 listing, K175 listing, economic analysis framework, and industry characterization. Four of the comments also contained remarks about the K174 listing, questioning the magnitude of its associated recordkeeping burden, and claiming that EPA did not consider other impacts arising from RCRA's ''mixture and derived-from'' clause. One commenter challenged EPA's assertion of the current market availability of K175 waste retorting treatment. The 14 commenters made nineteen remarks questioning the industrial scope of the listing, whether the rule would impact other types of facilities/wastes, and the appropriateness of EPA's cost annualization and future industry waste generation parameters. The 14 commenters also offered thirty-three remarks about the cost-effectiveness of the rule, the total industry cost of the rule, and challenged EPA's assertion that the proposed rule was not economically ''significant'' according to the $100 million annual effect threshold established in Executive Order 12866 (30 September 1993). Finally, commenters offered seven remarks raising questions about EPA's count of the affected number of facilities, EPA's characterization of the size of wastewater tanks in the affected industry, and EPA's characterization of the affected industry's annual sales and growth rate.

[67] U.S. EPA. 2000a. Economics Background Document. Office of Solid Waste. September.

[68] U.S. EPA. 2000g. Response to Public Comments on Proposed Listing Determination for Chlorinated Aliphatic Wastes. Office of Solid Waste. September.

C. What Are the Expected Economic Impacts of This Final Rule?

As of the late 1990s, 39 facilities in the US manufacture chlorinated aliphatic hydrocarbon chemicals. Eighteen of these are potentially subject to the rule, 17 as generators of K174 waste, and one as a generator of K175 waste. None of these 18 facilities are owned by small-sized companies. The 21 remainder facilities do not currently manufacture the types of chemicals and associated industrial wastes which are listed as RCRA ''hazardous'' industrial wastes by the rule.

The anticipated economic impacts associated with the final rule primarily consist of industry compliance costs, likely to be incurred by three of the 18 relevant waste generators (two K174 and one K175), and by four commercial waste handlers.

Because of the facts that: (1) Many of the CAHC manufacturing facilities and commercial industrial waste handlers are currently regulated under RCRA (via the existing RCRA F024 and F025 wastecodes, among others), (2) some CAHC manufacturing facilities currently manage some wastewater sludges as hazardous waste, (3) the K174 listing is targeted upon a subset of chlorinated aliphatic production processes, and/or (4) the K174 final rule is ''conditional'' upon only certain waste management practices, the incremental impact of this listing is expected to be substantially less than it otherwise would be if all waste generators fitting the listing descriptions, or if all 39 chemical class manufacturers, were affected. Consequently, the incremental impact of the final rule is expected to be less than it otherwise could be (*e.g.,* impacts could be higher under a listing affecting all facilities across the industry sector, rather than the final targeted and ''conditional'' listing approach which affects only a few facilities).

EPA estimates that the average annualized national cost of this rule will be between $0.42 and $4.05 million per year (consisting of $0.53 to $7.21 million in initial costs and $0.35 to $3.25 million in recurring annual costs), if one generator of EDC/VCM wastewater treatment sludge (K174) is able to make arrangements for the apparent lower-cost option for managing its affected industrial wastewaters. But if that generator is not able to make the appropriate waste management arrangements prior to the effective date for the final rule, such that the one facility might find it cannot make arrangements for a lower cost means of managing its affected wastewater (from which the EDC/VCM wastewater treatment sludges are derived), then it could face relatively high monthly costs for temporarily transporting its wastewater offsite to a commercial hazardous waste management facility, until it can complete an alternative (and lower-cost) waste management arrangement for its wastewaters. For the purpose of reflecting EPA's uncertainty about this facility's actual cost impacts, as well as other cost estimation parameters, EPA included other higher cost waste management options and industry compliance cost contingencies (such as possible surface impoundment corrective action costs) in the economic analysis for the final rule (Economics Background Document USEPA 2000a). Inclusion of all of these high-cost assumptions results in an upper-end EPA cost estimate of $23.37 million in average annualized cost (which includes up to 22 months of temporary offsite transport for the generator of EDC/VCM wastewater treatment sludge currently managing its wastewaters in a surface impoundment). EPA notes that total costs also include minor impacts on EPA regional offices and states with authorized RCRA programs to implement the new rule, as well as other ''incidental effects.'' The reader is referred to the ''Economics Background Document'' for additional details about all cost items included in EPA's estimate of national cost.

VIII. When Must Regulated Entities Comply With Today's Final Rule?

A. Effective Date

The effective date of today's rule is May 7, 2001.

B. Section 3010 Notification

Pursuant to RCRA section 3010, the Administrator may require all persons who handle hazardous wastes to notify EPA of their hazardous waste management activities within 90 days after the wastes are identified or listed as hazardous. This requirement may be applied even to those generators, transporters, and treatment, storage, and disposal facilities (TSDFs) that have previously notified EPA with respect to the management of other hazardous wastes. The Agency has decided to waive this notification requirement for persons who handle wastes that are covered by today's hazardous waste listings and already have (1) notified EPA that they manage other hazardous wastes, and (2) received an EPA identification number. The Agency has waived the notification requirement in this case because it believes that most, if not all, persons who manage the wastes listed as hazardous in today's rule already have notified the Agency and received an EPA identification number. However, any person who generates, transports, treats, stores, or disposes of these newly listed wastes and has not previously received an EPA identification number must obtain an identification number pursuant to 40 CFR 262.12 to generate, transport, treat, store, or dispose of these hazardous wastes by February 6, 2001.

C. Generators and Transporters

Persons who generate newly identified hazardous wastes may be required to obtain an EPA identification number if they do not already have one (as discussed in section VIII.B, above). If generating or transporting these wastes after the effective date of this rule, generators of the wastes listed today will be subject to the generator requirements set forth in 40 CFR Part 262. These requirements include standards for hazardous waste determination (40 CFR 262.11), compliance with the manifest (40 CFR 262.20 through 262.23), pretransport procedures (40 CFR 262.30 through 262.34), generator accumulation (40 CFR 262.34), record keeping and reporting (40 CFR 262.40 through 262.44), and import/export procedures (40 CFR 262.50 through 262.60). We note that the generator accumulation provisions of 40 CFR 262.34 allow generators to accumulate hazardous wastes without obtaining interim status or a permit only in certain specified units; the regulations also place a limit on the maximum amount of time that wastes can be accumulated in these units. If these wastes are actively managed in surface impoundments or other units that are not tank systems, containers, drip pads, or containment buildings as outlined in 40 CFR 262.34, accumulation of these wastes is subject to the permitting requirements of 40 CFR Parts 264 and 265, and the generator is required to obtain interim status and seek a permit (or modify interim status or a permit, as appropriate). Also, persons who transport newly identified hazardous wastes will be required to obtain an EPA identification number (if they do already have one) as described above and will be subject to the transporter requirements set forth in 40 CFR Part 263. [NOTE: Generators of EDC/VCM wastewater treatment sludge who manage the waste in compliance with the requirements of the conditional listing (*i.e.,* dispose of the waste in a landfill and do not store the waste directly on the land prior to landfilling, are not subject to the hazardous waste

generator requirements at 40 CFR Part 262.]

D. Facilities Subject to Permitting

Today's rule is issued pursuant to HSWA authority. Therefore, EPA will regulate the management of the newly identified hazardous wastes until states are authorized to regulate these wastes. EPA will apply Federal regulations to these wastes and to their management in both authorized and unauthorized states.

1. Facilities Newly Subject to RCRA Permit Requirements

Facilities that treat, store, or dispose of wastes that are subject to RCRA regulation for the first time by this rule (that is, facilities that have not previously received a permit pursuant to Section 3005 of RCRA and are not currently operating pursuant to interim status), might be eligible for interim status (see Section 3005(e)(1)(A)(ii) of RCRA). To obtain interim status based on treatment, storage, or disposal of such newly identified wastes, eligible facilities are required to comply with 40 CFR 270.70(a) and 270.10(e) by providing notice under Section 3010 and submitting a Part A permit application no later than May 7, 2001. Such facilities are subject to regulation under 40 CFR Part 265 until a permit is issued.

In addition, under Section 3005(e)(3) and 40 CFR 270.73(d), not later than November 8, 2001, land disposal facilities newly qualifying for interim status under section 3005(e)(1)(A)(ii) also must submit a Part B permit application and certify that the facility is in compliance with all applicable groundwater monitoring and financial responsibility requirements. If the facility fails to submit these certifications and a permit application, interim status will terminate on that date.

2. Existing Interim Status Facilities

Pursuant to 40 CFR 270.72(a)(1), all existing hazardous waste management facilities (as defined in 40 CFR 270.2) that treat, store, or dispose of the newly identified hazardous wastes and are currently operating pursuant to interim status under section 3005(e) of RCRA, must file an amended Part A permit application with EPA no later than the effective date of today's rule (*i.e.,* May 7, 2001). By doing this, the facility may continue managing the newly listed wastes. If the facility fails to file an amended Part A application by that date, the facility will not receive interim status for management of the newly listed hazardous wastes and may not manage those wastes until the facility receives either a permit or a change in interim status allowing such activity (40 CFR 270.10(g)).

3. Permitted Facilities

Facilities that already have RCRA permits must request permit modifications if they want to continue managing newly listed wastes (see 40 CFR 270.42(g)). This provision states that a permittee may continue managing the newly listed wastes by following certain requirements, including submitting a Class 1 permit modification request by the date on which the waste or unit becomes subject to the new regulatory requirements (*i.e.,* the effective date of today's rule), complying with the applicable standards of 40 CFR Parts 265 and 266 and submitting a Class 2 or 3 permit modification request within 180 days of the effective date.

Generally, a Class 2 modification is appropriate if the newly listed wastes will be managed in existing permitted units or in newly regulated tank or container units and will not require additional or different management practices than those authorized in the permit. A Class 2 modification requires the facility owner to provide public notice of the modification request, a 60-day public comment period, and an informal meeting between the owner and the public within the 60-day period. The Class 2 process includes a ''default provision,'' which provides that if the Agency does not reach a decision within 120 days, the modification is automatically authorized for 180 days. If the Agency does not reach a decision by the end of that period, the modification is permanently authorized (see 40 CFR 270.42(b)).

A Class 3 modification is generally appropriate if management of the newly listed wastes requires additional or different management practices than those authorized in the permit or if newly regulated land-based units are involved. The initial public notification and public meeting requirements are the same as for Class 2 modifications. However, after the end of the 60-day public comment period, the Agency will grant or deny the permit modification request according to the more extensive procedures of 40 CFR part 124. There is no default provision for Class 3 modifications (see 40 CFR 270.42(c)).

Under 40 CFR 270.42(g)(1)(v), for newly regulated land disposal units, permitted facilities must certify that the facility is in compliance with all applicable 40 CFR part 265 groundwater monitoring and financial responsibility requirements no later than May 7, 2001. If the facility fails to submit these certifications, authority to manage the newly listed wastes under 40 CFR 270.42(g) will terminate on that date.

4. Units

Units in which newly identified hazardous wastes are generated or managed will be subject to all applicable requirements of 40 CFR part 264 for permitted facilities or 40 CFR part 265 for interim status facilities, unless the unit is excluded from such permitting by other provisions, such as the wastewater treatment tank exclusions (40 CFR 264.1(g)(6) and 265.1(c)(10)) and the product storage tank exclusion (40 CFR 261.4(c)). Examples of units to which these exclusions could never apply include landfills, land treatment units, waste piles, incinerators, and any other miscellaneous units in which these wastes may be generated or managed.

5. Closure

All units in which newly identified hazardous wastes are treated, stored, or disposed after the effective date of this regulation that are not excluded from the requirements of 40 CFR parts 264 and 265 are subject to both the general closure and post-closure requirements of Subpart G of 40 CFR parts 264 and 265 and the unit-specific closure requirements set forth in the applicable unit technical standards Subpart of 40 CFR part 264 or part 265 (*e.g.,* Subpart N for landfill units). In addition, EPA promulgated a final rule that allows, under limited circumstances, regulated landfills, surface impoundments, or LTUs to cease managing hazardous waste but to delay subtitle C closure to allow the unit to continue to manage non-hazardous waste for a period of time prior to closure of the unit (see 54 FR 33376, August 14, 1989). Units for which closure is delayed continue to be subject to all applicable 40 CFR 264 and 265 requirements. Dates and procedures for submittal of necessary demonstrations, permit applications, and revised applications are detailed in 40 CFR 264.113(c) through (e) and 265.113(c) through (e).

IX. How Will This Rule Be Implemented at the State Level?

A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer the RCRA hazardous waste program within the State. See 40 CFR part 271 for the overall standards and requirements for authorization. Following authorization, the State

requirements authorized by EPA apply in lieu of equivalent Federal requirements and become Federally enforceable as requirements of RCRA. EPA maintains independent authority to bring enforcement actions under RCRA sections 3007, 3008, 3013, and 7003. Authorized States also have independent authority to bring enforcement actions under State law. A State may receive authorization by following the approval process described under 40 CFR part 271.

After a State receives initial authorization, new Federal requirements promulgated under RCRA authority existing prior to the 1984 Hazardous and Solid Waste Amendments (HSWA) do not apply in that State until the State adopts and receives authorization for equivalent State requirements. The State must adopt such requirements to maintain authorization.

In contrast, under RCRA section 3006(g) (42 U.S.C. 6926(g)), new Federal requirements and prohibitions imposed pursuant to HSWA provisions take effect in authorized States at the same time that they take effect in unauthorized States. Although authorized States are still required to update their hazardous waste programs to remain equivalent to the Federal program, EPA carries out HSWA requirements and prohibitions in authorized States, including the issuance of new permits implementing those requirements, until EPA authorizes the State to do so.

Authorized States are required to modify their programs only when EPA promulgates Federal requirements that are more stringent or broader in scope than existing Federal requirements. RCRA section 3009 allows the States to impose standards more stringent than those in the Federal program. See also 40 CFR 271.1(i). Therefore, authorized States are not required to adopt Federal regulations, both HSWA and non-HSWA, that are considered less stringent.

B. Effect on State Authorizations

EPA is promulgating this rule (with the exception of the changes to Part 302) pursuant to sections 2002(a), 3001(b), 3001(e)(2), and 3007(a) of the Solid Waste Disposal Act, which are HSWA provisions. We will add the new requirements to Table 1 at 40 CFR 271.1, which identifies Federal program requirements promulgated pursuant to HSWA. Because this rule is promulgated pursuant to the HSWA, after its effective date EPA will implement it rule in all States, including authorized States. Once authorized States modify their programs to adopt equivalent rules and receive authorization for such rules from EPA, those rules will become RCRA subtitle C requirements that apply in that States in lieu of the equivalent federal requirements.

Because this rule is promulgated pursuant to HSWA, a State submitting a program modification may apply to receive either interim or final RCRA authorization under RCRA 3006(g) or (b) on the basis that State regulations are, respectively, substantially equivalent or fully equivalent to EPA's regulations. The procedures and schedule for State programs modifications for either interim or final authorization are described in 40 CFR 271.21 and 271.24. Note that all HSWA interim authorizations will expire on January 1, 2003 (see 40 CFR 271.24(c)).

X. What Are the Reportable Quantity Requirements for Newly-Listed Wastes (K174 and K175) Under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)?

A. What Is the Relationship Between RCRA and CERCLA?

CERCLA defines the term ''hazardous substance'' to include RCRA hazardous wastes. When EPA lists a hazardous waste under RCRA, the waste is also a hazardous substance pursuant to CERCLA 101(14), and the Agency adds the waste to the table of CERCLA hazardous substances in the CFR. EPA establishes a reportable quantity or RQ for each CERCLA hazardous substance. EPA provides a list of the CERCLA hazardous substances along with their RQs in Table 302.4 at 40 CFR 302.4. If you are the person in charge of a vessel or facility that releases a CERCLA hazardous substance in an amount that equals or exceeds its RQ, then you must report that release to the National Response Center (NRC). You also may have to notify State and local authorities.

B. Is EPA Adding Chlorinated Aliphatic Wastes to the Table of CERCLA Hazardous Substances?

Yes. Today, EPA is adding the newly listed chlorinated aliphatic wastes (K174 and K175) to the list of CERCLA hazardous substances. As discussed below, EPA also is finalizing adjusted RQs for these wastes.

C. How Does EPA Determine Reportable Quantities?

Under CERCLA, all new hazardous substances generally have a statutory one-pound RQ. EPA adjusts the RQ of a newly added hazardous substance based on an evaluation of its intrinsic physical, chemical, and toxic properties. These intrinsic properties—called ''primary criteria''—are aquatic toxicity, mammalian toxicity (oral, dermal, and inhalation), ignitability, reactivity, chronic toxicity, and potential carcinogenicity. EPA evaluates the data for a hazardous substance for each primary criterion. To adjust the RQs, EPA ranks each criterion on a scale that corresponds to an RQ value of 1, 10, 100, 1,000, or 5,000 pounds. For each criterion, EPA establishes a tentative RQ. A hazardous substance may receive several tentative RQ values based on its particular intrinsic properties. The lowest of the tentative RQs becomes the ''primary criteria RQ'' for that substance.

After the primary criteria RQs are assigned, EPA further evaluates substances for their susceptibility to certain degradative processes. These are secondary adjustment criteria. The natural degradative processes are biodegradation, hydrolysis, and photolysis (BHP). If a hazardous substance, when released into the environment, degrades rapidly to a less hazardous form by one or more of the BHP processes, EPA generally raises its RQ (as determined by the primary RQ adjustment criteria) by one level. Conversely, if a hazardous substance degrades to a more hazardous product after its release, EPA assigns an RQ to the original substance equal to the RQ for the more hazardous substance.

The standard methodology used to adjust the RQs for RCRA hazardous waste streams differs from the methodology applied to individual hazardous substances. The procedure for assigning RQs to RCRA waste streams is based on the results of an analysis of the hazardous constituents of the waste streams. The constituents of each RCRA hazardous waste stream are identified in 40 CFR part 261, Appendix VII. EPA first determines an RQ for each hazardous constituent within the waste stream using the methodology described above. The lowest RQ value of these constituents becomes the adjusted RQ for the waste stream. When there are hazardous constituents of a RCRA waste stream that are not CERCLA hazardous substances, the Agency develops an RQ, called a ''reference RQ,'' for these constituents in order to assign an appropriate RQ to the waste stream (see 48 FR 23565, May 25, 1983). In other words, the Agency derives the RQ for waste streams based on the lowest RQ of all of the hazardous constituents, regardless of whether they are CERCLA hazardous substances.

D. When Do I Need To Report a Release of K174 or K175 Under CERCLA?

Today, EPA is promulgating adjusted statutory RQs for newly-listed hazardous wastes K174 and K175 waste streams of one pound based on their hazardous constituents. EPA also is adjusting the RQ at one pound for K174 based on its hazardous constituents, chlorinated dibenzo-p-dioxins (CDDs) and chlorinated dibenzofurans (CDFs). EPA is promulgating an adjusted RQ of one pound for newly-listed waste K175 based on its hazardous constituent, mercury. However, in determining when to report a release of K174 or K175, EPA will allow you to apply the mixture rule, codified in 40 CFR 302.6, using the maximum observed concentrations of the hazardous constituents within the respective waste streams.

The mixture rule provides that when you know the quantities of all hazardous constituents of a mixture or solution, you must notify of releases of an RQ or more of such constituents (40 CFR 302.6). Therefore, if you know the concentration of the hazardous constituents of a hazardous waste, you can calculate the amount of waste released needed to reach the RQ for the constituents. By using the maximum observed concentration that EPA is promulgating today, you may apply the mixture rule, even if you do not know the concentration of constituents released. That is, if you are the person in charge, you must immediately report the release as soon as you know that you have released K174 or K175 in an amount that will reach the RQ for any of the hazardous constituents. This approach is reasonable and conservative because the sampling data presented in the Listing Background Document (USEPA, 1999c) accurately identify the maximum observed concentrations of the hazardous constituents in the chlorinated aliphatics waste streams. Table X–1 below identifies the hazardous constituents for each waste stream, their maximum observed concentrations in parts per million (ppm), and their constituents' RQs or reference RQs.

TABLE X–1.—MAXIMUM OBSERVED CONCENTRATION AND CORRESPONDING RQ FOR HAZARDOUS CONSTITUENTS THAT ARE BASIS FOR NEWLY-LISTED K174 AND K175

Waste	Constituent	Max. concentration (ppm (mg/kg))	RQ (lb)
K174	2,3,7,8-TCDD	0.000039	1
	1,2,3,7,8-PeCDD	0.0000108	1
	1,2,3,4,7,8-HxCDD	0.0000241	1
	1,2,3,6,7,8-HxCDD	0.000083	1
	1,2,3,7,8,9-HxCDD	0.000062	1
	1,2,3,4,6,7,8-HpCDD	0.00123	1
	OCDD	0.0129	1
	2,3,7,8-TCDF	0.000145	1
	1,2,3,7,8-PeCDF	0.0000777	1
	2,3,4,7,8-PeCDF	0.000127	1
	1,2,3,4,7,8-HxCDF	0.001425	1
	1,2,3,6,7,8-HxCDF	0.000281	1
	1,2,3,7,8,9-HxCDF	0.00014	1
	2,3,4,6,7,8-HxCDF	0.000648	1
	1,2,3,4,6,7,8-HpCDF	0.0207	1
	1,2,3,4,7,8,9-HpCDF	0.0135	1
	OCDF	0.212	1
K175	Mercury	9200	1

For example, if K174 is released from your facility and you do not know the actual concentrations of its constituents, you may assume that the concentrations are those identified in Table X–1. Thus, if K174 is released from your facility and you do not know the actual concentrations of its constituents, you may apply the mixture rule to the assumed maximum concentrations indicated in the table. You would have to release 4,716,981 pounds of K174 to reach the RQ for this waste (based on the maximum observed concentration of OCDF). If K175 is released from your facility and you do not know the actual concentration of mercury, you may assume that the concentration is 9200 ppm. Applying the mixture rule, you would have to release 108.7 pounds of K0175 to reach the RQ.

E. What if I Know the Concentration of the Constituents in My Waste?

If you know the concentration levels of all the hazardous constituents in a particular chlorinated aliphatic waste, you may apply the mixture rule (see 40 CFR 302.6(b)) to the actual concentrations. You would need to report a release of either waste when an RQ or more of any of their respective hazardous constituents is released.

F. How Did EPA Determine the RQs for K174 and K175 and Their Hazardous Constituents?

The hazardous constituents identified as the basis for listing K174 as hazardous waste include chlorinated dibenzo-p-dioxins (CDDs) and chlorinated dibenzofurans (CDFs). Previously, EPA had established an adjusted RQ of one pound for 2,3,7,8-TCDD (see 54 FR 33426). EPA has not established adjusted RQs for the other CDD and CDF congeners. However, EPA recognizes that a number of these congeners exhibit dioxin-like toxicity and has established ''reference RQs'' of one pound for these congeners to support the development of the adjusted RQs for K174.

The adjusted RQ for 2,3,7,8-TCDD was established as one pound based on potential carcinogenicity, considering the weight of evidence that this substance is carcinogenic, and considering its estimated carcinogenic potency. To establish reference RQs for the other CDD and CDF congeners in the waste stream, EPA applied the toxicity equivalency factors (TEFs) established for dioxin-like compounds to the potency factor used as the basis for the adjusted RQ for 2,3,7,8-TCDD. Of the 210 CDD and CDF congeners, only those with chlorine substitutions in, at least,

the 2, 3, 7, and 8 positions (a total of 17 CDD and CDF congeners) are considered to have dioxin-like toxicity. Applying the TEFs established for these 17 congeners to the potency factor established for 2,3,7,8-TCDD indicates that all of the congeners fit into RQ Potency Group 1 with a corresponding reference RQ of one pound.[69] Therefore, because each of the hazardous constituents has an RQ or reference RQ of one pound, EPA is promulgating an adjusted RQ of one pound for K174.

The hazardous constituent identified as the basis for listing as hazardous VCM–A wastewater treatment sludges (K175) is mercury. Previously, EPA had established an adjusted RQ of one pound for mercury (see 50 FR 13456, April 4, 1985). Because the hazardous constituent used as the basis for listing K175 has an RQ of one pound, EPA is promulgating an adjusted RQ of one pound for this waste.

G. How Do I Report a Release?

To report a release of K174 or K175 (or any other CERCLA hazardous substance) that equals or exceeds its RQ, you must immediately notify the National Response Center (NRC) as soon as you have knowledge of that release. The toll-free telephone number of the NRC is 1–800–424–8802; in the Washington, DC, metropolitan area, the number is (202) 267–2675.

You also may have to notify State and local authorities. The Emergency Planning and Community Right-to-Know Act (EPCRA) requires that owners and operators of certain facilities report releases of CERCLA hazardous substances and EPCRA extremely hazardous substances (see list in 40 CFR part 355, Appendix A) to State and local authorities. After the release of an RQ or more of any of those substances, you must report immediately to the community emergency coordinator of the local emergency planning committee for any area likely to be affected by the release, and to the State emergency response commission of any State likely to be affected by the release.

[69] For an explanation of how potency factors are calculated and potency groups and RQs are established, see the Technical Background Document to Support Rulemaking Pursuant to CERCLA Section 102, Volume 3, July 27, 1989. This document can be viewed by calling the EPA Superfund Docket Center, 703–603–8917, and requesting document number 102 RQ 273C.

H. Is CERCLA Reporting Required for Spills of EDC/VCM Wastewater Treatment Sludge That (Prior to the Spill) Does Not Meet the Listing Description for K174?

Commenters to the proposed rule asked whether spills of EDC/VCM wastewater treatment sludge, where prior to being spilled the sludge does not meet the K174 listing because of the manner in which it is being managed, would have to be reported in compliance with the CERCLA RQ reporting requirements. The Agency notes that we are finalizing a contingent management listing for EDC/VCM wastewater treatment sludges under which these sludges would be regulated as K174 wastes unless they are destined for management in a subtitle C landfill or a non-hazardous waste landfill licensed or permitted by a state. As part of the listing description, once the EDC/VCM wastewater treatment sludge is placed on the land it meets the listing description. Therefore, contrary to the commenter's suggestion, spills of EDC/VCM sludges would not be excluded from the K174 listing. A spill of EDC/VCM wastewater treatment sludges would constitute the release of a CERCLA hazardous substance, and provided that an amount equal to or exceeding the RQ had been released, would be subject to CERCLA notification requirements.

I. What Is the Statutory Authority for This Program?

Section 101(14) of CERCLA defines the term hazardous substance by referring to substances listed under several other environmental statutes, as well as those substances that EPA designates as hazardous under CERCLA section 102(a). In particular, CERCLA section 101(14)(C) defines the term hazardous substance to include ''any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act.'' CERCLA section 102(a) gives EPA authority to establish RQs for CERCLA hazardous substances. CERCLA section 103(a) requires any person in charge of a vessel or facility that releases a CERCLA hazardous substance in an amount equal to or greater than its RQ to report the release immediately to the federal government. EPCRA section 304 requires owners or operators of certain facilities to report releases of CERCLA hazardous substances and EPCRA extremely hazardous substances to State and local authorities.

XI. What Are the Administrative Assessments?

A. Executive Order 12866

Under Executive Order 12866 (September 30, 1993), EPA must determine whether a regulatory action is ''significant'' and, therefore, subject to OMB review and the other provisions of the Executive Order. A significant regulatory action is defined by Executive Order 12866 as one that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or rights and obligations or recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in Executive Order 12866.

Pursuant to the terms of Executive Order 12866, EPA has determined that this rule is a ''significant regulatory action'' because of point four (4) above: The rule includes a novel legal or policy issue arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order. Today's final rule, which includes an alternative listing approach for one of the newly-listed wastestreams, deviates from the Agency's standard or historic listing approach in that the Agency is listing as hazardous only those quantities of the waste that are managed in a manner that reflects unacceptable risks. This differs from the Agency's traditional approach to listing a waste as hazardous, in which the listing determination captures the entire quantity of a targeted wastestream that poses unacceptable risks to human health and the environment when managed in one or more particular manners.

Due to the Agency's decision to promulgate a listing approach that deviates from our historical hazardous waste listing approach, the Agency is deeming today's action to be ''significant.'' Prior to finalizing today's rule, EPA submitted this proposed policy change to OMB for review. Changes made to the Agency's proposal in response to OMB suggestions or recommendations are documented in the public record.

Although today's final rule is not ''economically significant,'' the Agency prepared an Economics Background

Document (USEPA 1999b) in support of today's rule. The Agency's economic assessment addresses, among other factors, industry compliance costs, industry financial impacts, and potential for small entity impacts. A summary of findings from our economic assessment is presented in Section VII. The complete Economics Background Document (USEPA 1999b) is available for public review from the RCRA docket, according to instructions provided in the introduction to this preamble.

EPA anticipates that the final rule will primarily affect three of the 18 known US generators of K174 and K175 hazardous wastes, causing these three facilities to modify current waste management practices, according to the terms and conditions of the final rule. None of these 18 facilities are owned by small-sized companies. The 15 remainder chemical plants will incur relatively minor annual costs for documentation of current waste management practices. In addition, EPA anticipates that four industrial waste management operators will be affected by either increased or decreased annual volumes and business revenues associated with the management of wastes from the three affected chemical plants. EPA also anticipates that states with authorized RCRA programs will be affected as they will be required to implement and enforce the final rule. Finally, EPA anticipates that other Federal agencies and non-governmental organizations may be incur relatively minor costs associated with reading and propagating the final rule.

EPA estimates that the national average annual cost of the final rule will be between $0.42 to $4.05 million. Under broader cost estimation uncertainty assumptions which allow for temporary offsite trucking of affected wastes by one facility if it requires additional time beyond the final rule six-month compliance deadline to modify its current waste management practices, the upper-bound of this cost estimate increases to $23.37 million in average annual cost.

B. Regulatory Flexibility Act

Pursuant to the 1980 Regulatory Flexibility Act (RFA)(5 U.S.C. 601 *et seq.,* as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment, a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.,* small businesses, small organizations, and small governmental jurisdictions). However, a regulatory flexibility analysis is not required if the head of an agency certifies that the rule will not have a ''significant'' economic impact on a substantial number of small entities.

SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a ''significant'' economic impact on a substantial number of small entities. The following discussion explains EPA's determination.

EPA has examined this rule's potential effects on small entities as required by the RFA/SBREFA, and has determined that this action will not have a significant economic impact on a substantial number of small entities. This is evidenced by the fact that only one of the potentially affected, parent companies determined to be producers of chlorinated aliphatic products in the U.S., may be classified as a ''small business,'' according to the U.S. Small Business Administration's employee size standards (*i.e.,* less than or equal to 1,000 employees) and according to that company's primary Standard Industrial Classification (SIC) code (SIC 2869).

I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities. This rule, therefore, does not require a regulatory flexibility analysis.

C. Paperwork Reduction Act

The information collection requirements in this final rule have been submitted for approval to the Office of Management and Budget (OMB) under the *Paperwork Reduction Act,* 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document was prepared by EPA (ICR No. 1924.01) and a copy may be obtained from Sandy Farmer by mail at OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 1200 Pennsylvania Avenue NW.; Washington, DC 20460, by E-mail at *farmer.sandy@epamail.epa.gov,* or by calling (202) 260–2740. A copy also may be downloaded off the Internet at *http://www.epa.gov/icr.*

This final rule includes new information collection requirements subject to OMB review under the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.* In addition to complying with the existing subtitle C recordkeeping and reporting requirements for the newly listed waste streams, EPA is requiring that facilities generating EDC/VCM wastewater treatment sludges be able to document their compliance with the conditions provided for exclusion from the scope of the conditional hazardous waste listing promulgated today. This requirement is necessary to ensure that EDC/VCM wastewater treatment sludges are managed in a manner that is safe for human health and the environment. In addition, EPA is requiring disposal facilities that manage VCM–A wastewater treatment sludges to maintain records documenting that these sludges are co-disposed only with other wastes that have a pH level of 6.0 or lower. This requirement is necessary to ensure that the mercury contained in the waste does not leach from the waste after disposal.

The Agency estimated the burden associated with complying with the requirements in this proposed rule. Included in the ICR are the burden estimates for the following requirements for industry respondents: reading the regulations; keeping records documenting compliance with conditions for exclusion from hazardous waste listings; and keeping records documenting compliance with landfill waste disposal requirements for the disposal of VCM–A wastewater treatment sludges. Included also are the burden estimates for State respondents for applying for State authorization. The Agency determined that all of this information is necessary to ensure compliance with today's final rule.

To the extent that this rule imposes any information collection requirements under existing RCRA regulations promulgated in previous rulemakings, those requirements have been approved by the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.,* and have been assigned OMB control numbers 2050–0009 (ICR No. 1573, Part B Permit Application, Permit Modifications, and Special Permits); 2050–0120 (ICR No. 1571, General Facility Hazardous Waste Standards); 2050–0028 (ICR No. 261, Notification of Hazardous Waste Activity); 2050–0034 (ICR No. 262, RCRA Hazardous Waste Permit Application and Modification, Part A); 2050–0039 (ICR No. 801, Requirements for Generators, Transporters, and Waste Management Facilities under the Hazardous Waste Manifest System); 2050–0035 (ICR No. 820, Hazardous Waste Generator Standards); and 2050–0024 (ICR No. 976, 1997 Hazardous Waste Report).

EPA estimates that the projected annual hour burden for industry respondents will be 93 hours, and the annual cost associated with the additional paperwork burden will be $5,254. Total estimates over three years are 279 hours and $15,762.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and use technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under Section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of Section 205 do not apply when they are inconsistent with applicable law. Moreover, Section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector. The rule would not impose any federal intergovernmental mandate because it imposes no enforceable duty upon state, tribal or local governments. States, tribes and local governments would have no compliance costs under this rule. It is expected that states will adopt similar rules, and submit those rules for inclusion in their authorized RCRA programs, but they have no legally enforceable duty to do so. For the same reasons, we determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments, and thus, is not subject to the requirements of sections 202 and 205 of UMRA. In addition, EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year.

E. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' The Executive Order defines ''policies that have federalism implications'' to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This proposed rule directly affects the chlorinated aliphatics industry. States and local governments will not incur direct compliance costs under this rule. It is expected that states will adopt similar rules, and submit those rules for inclusion in their authorized RCRA programs, but they have no legally enforceable duty to do so. Thus, Executive Order 13132 does not apply to this rule.

F. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. There is no impact to tribal governments as the result of the proposed action. In addition, this rule is required by statute (HSWA). Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), applies to any rule that: (1) is determined to be ''economically significant'' as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective

and reasonably feasible alternatives considered by the Agency. This rule is not subject to the Executive Order because it is not economically significant as defined in E.O. 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

The topic of environmental threats to children's health is growing in regulatory importance as scientists, policy makers, and village leaders continue to recognize the extent to which children are particularly vulnerable to environmental hazards. Recent EPA actions have been in the forefront of addressing environmental threats to the health and safety of children. Today's final rule further reflects our commitment to mitigating environmental threats to children.

A few significant physiological characteristics are largely responsible for children's increased susceptibility to environmental hazards. First, children eat proportionately more food, drink proportionately more fluids, and breathe more air per pound of body weight than do adults. As a result, children potentially experience greater levels of exposure to environmental threats than do adults. Second, because children's bodies are still in the process of development, their immune systems, neurological systems, and other immature organs can be more easily and considerably affected by environmental hazards.

Today's rule will reduce risks posed by the hazardous constituents found in the listed waste streams by requiring more appropriate and safer management practices. EPA considered risks to children in its risk assessment. The more appropriate and safer management practices promulgated in this rule are projected to reduce risks to children potentially exposed to the constituents of concern.

H. National Technology Transfer and Advancement Act of 1995

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Pub L. No. 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities, unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

I. Executive Order 12898: Environmental Justice

Under Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,'' as well as through EPA's April 1995, ''Environmental Justice Strategy, OSWER Environmental Justice Task Force Action Agenda Report,'' and National Environmental Justice Advisory Council, EPA has undertaken to incorporate environmental justice into its policies and programs. EPA is committed to addressing environmental justice concerns, and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income, bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities.

Today's rule is intended to reduce risks from the generation and management of hazardous wastes and to benefit all populations. As such, this rule is not expected to cause any disproportionately high and adverse impacts to minority or low-income communities versus non-minority or affluent communities.

In making hazardous waste listing determinations, we base our evaluations of potential risk from the generation and management of solid wastes on an analysis of potential individual risk. In conducting risk evaluations, our goal is to estimate potential risk to any population of potentially exposed individuals (*e.g.,* home gardeners, adult farmers, children of farmers, anglers) located in the vicinity of any generator or facility handling a waste. Therefore, we are not putting poor, rural, or minority populations at any disadvantage with regard to our evaluation of risk or with regard to how the Agency makes its proposed hazardous waste listing determinations.

In promulgating decisions to list two wastes as hazardous (*i.e.,* EDC/VCM wastewater treatment sludges managed in land treatment units, and VCM–A wastewater treatment sludges), all populations potentially exposed to these wastes or potentially exposed to releases of the hazardous constituents in the wastes will benefit from the listing determinations. In addition, listing determinations are effected at the national level. The wastes proposed to be listed as hazardous will be hazardous regardless of where they are generated and regardless of where they may be managed. Although the Agency understands that the listing determinations may affect where these wastes are managed in the future (in that hazardous wastes must be managed at subtitle C facilities), the Agency's decision to list these wastes as hazardous is independent of any decisions regarding the location of waste generators and the siting of waste management facilities.

Similarly, in cases where the Agency is not listing a solid waste as hazardous because the waste does not meet the criteria for being identified as a hazardous waste, these decisions are based upon an evaluation of potential individual risks located in proximity to any facility handling the waste. In the case of wastewater treatment sludges from the production of allyl chloride and methyl chloride and in the case of EDC/VCM wastewater treatment sludges managed in landfills, we believe the potential risk levels associated with the wastes are safe for all populations potentially exposed to the wastes and their constituents.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A Major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective May 7, 2001.

List of Subjects

40 CFR 148

Administrative practice and procedure, Hazardous waste, Reporting and recordkeeping requirements, Water supply.

40 CFR 261

Environmental protection, Hazardous materials, Waste treatment and disposal, Recycling.

40 CFR Part 268

Environmental protection, Hazardous materials, Waste management, Reporting and recordkeeping requirements, Land disposal restrictions, Treatment standards.

40 CFR Part 271

Environmental protection, Administrative practice and procedure, Confidential business information, Hazardous material transportation, Hazardous waste, Indians—lands, Intergovernmental relations, Penalties, Reporting and recordkeeping requirements, Water pollution control, Water supply.

40 CFR Part 302

Environmental protection, Air pollution control, Chemicals, Emergency Planning and Community Right-to-Know Act, Extremely hazardous substances, Hazardous chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous waste, Intergovernmental relations, Natural resources, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: September 29, 2000.

Carol M. Browner,

Administrator.

For the reasons setforth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 148—HAZARDOUS WASTE INJECTION RESTRICTIONS

1. The authority citation for part 148 continues to read as follows:

Authority: Sec. 3004, Resource Conservation and Recovery Act, 42 U.S.C. 6901 *et seq.*

2. Section 148.18 is amended by adding paragraphs (j) and (k) to read as follows:

§ 148.18 Waste-specific prohibitions—newly listed and identified wastes.

* * * * *

(j) Effective May 8, 2001, the wastes specified in 40 CFR 261.32 as EPA Hazardous Waste Numbers K174 and K175 are prohibited from underground injection.

(k) The requirements of paragraphs (a) through (j) of this section do not apply:

(1) If the wastes meet or are treated to meet the applicable standards specified in subpart D of 40 CFR part 268; or

(2) If an exemption from a prohibition has been granted in response to a petition under subpart C of this part; or

(3) During the period of extension of the applicable effective date, if an extension has been granted under § 148.4 of this part.

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

3. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

4. In § 261.32, the table is amended by adding in alphanumeric order (by the first column) the following waste streams to the subgroup ''Organic Chemicals'' to read as follows:

§ 261.32 Hazardous waste from specific sources.

Industry and EPA hazardous waste No.	Hazardous waste	Hazardous code
*	*	*
Organic chemicals:		
*	*	*
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (*e.g.,* contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, *etc.*) that the terms of the exclusion were met.	T
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	T
*	*	*

5. Appendix VII to Part 261 is amended by adding the following wastestreams in alphanumeric order (by the first column) to read as follows:

Appendix VII To Part 261—Basis for Listing Hazardous Waste

EPA hazardous waste no.	Hazardous constituents for which listed
*	* * * * * * *
K174	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD), 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF), 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,6,7,8,9-HpCDF), HxCDDs (All Hexachlorodibenzo-p-dioxins), HxCDFs (All Hexachlorodibenzofurans), PeCDDs (All Pentachlorodibenzo-p-dioxins), OCDD (1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin, OCDF (1,2,3,4,6,7,8,9-Octachlorodibenzofuran), PeCDFs (All Pentachlorodibenzofurans), TCDDs (All tetrachlorodi-benzo-p-dioxins), TCDFs (All tetrachlorodibenzofurans).
K175	Mercury

Appendix VIII to Part 261—Hazardous Constituents

6. Appendix VIII to Part 261 is amended by adding in alphabetical order of common name the following entries:

Common name	Chemical abstracts name	Chemical abstracts No.	Hazardous waste No.
* * *	* * *	*	*
Octachlorodibenzo-p-dioxin (OCDD)	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268–87–9	
Octachlorodibenzofuran (OCDF)	1,2,3,4,6,7,8,9-Octachlorodibenofuran	39001–02–0	
* * *	* * *	*	*

PART 268—LAND DISPOSAL RESTRICTIONS

7. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart C—Prohibitions on Land Disposal

8. Section 268.33 is revised to read as follows:

§ 268.33 Waste specific prohibitions—chlorinated aliphatic wastes.

(a) Effective May 8, 2001, the wastes specified in 40 CFR part 261 as EPA Hazardous Wastes Numbers K174, and K175, soil and debris contaminated with these wastes, radioactive wastes mixed with these wastes, and soil and debris contaminated with radioactive wastes mixed with these wastes are prohibited from land disposal.

(b) The requirements of paragraph (a) of this section do not apply if:

(1) The wastes meet the applicable treatment standards specified in subpart D of this part;

(2) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition;

(3) The wastes meet the applicable treatment standards established pursuant to a petition granted under § 268.44;

(4) Hazardous debris has met the treatment standards in § 268.40 or the alternative treatment standards in § 268.45; or

(5) Persons have been granted an extension to the effective date of a prohibition pursuant to § 268.5, with respect to these wastes covered by the extension.

(c) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in § 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains regulated constituents in excess of the applicable levels of subpart D of this part, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.

(d) Disposal of K175 wastes that have complied with all applicable 40 CFR 268.40 treatment standards must also be macroencapsulated in accordance with 40 CFR 268.45 Table 1 unless the waste is placed in:

(1) A Subtitle C monofill containing only K175 wastes that meet all applicable 40 CFR 268.40 treatment standards; or

(2) A dedicated Subtitle C landfill cell in which all other wastes being co-disposed are at pH≤6.0.

9. In § 268.40, the Table is amended by adding entries to F039 in alphabetical order, by adding in alphanumeric order new entries for K174 and K175, and by adding footnote 12 to read as follows:

§ 268.40 Applicability of treatment standards.

* * * * *

BILLING CODE 6560–50–P

TREATMENT STANDARDS FOR HAZARDOUS WASTES Note: NA means not applicable					
WASTE CODE	Waste Description and Treatment/Regulatory Subcategory[1]	Regulated Hazardous Constituent		Wastewaters	Nonwastewaters
		Common Name	CAS[2] Number	Concentration in mg/L[3], or Technology Code[4]	Concentration in mg/kg[5] unless noted as "mg/L TCLP", or Technology Code
* * * * *	**				
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under Subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Waste retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028).	* * * * * * *			
		1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035	0.0025
		1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035	0.0025
		1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7	0.000035	0.0025
		*1,2,3,4,6,7,8,9-*Octachlorodibenzo-*p*-dioxin (OCDD)	3268-87-9	0.000063	0.0025

		1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063	0.005
* * * * *	* *				
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer.	1,2,3,4,6,7,8-Heptachlorodibenzo-*p*-dioxin (1,2,3,4,6,7,8-HpCDD)	35822-46-9	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562-39-4	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673-89-7	0.000035 or CMBST[11]	0.0025 or CMBST[11]
		HxCDDs (All Hexachlorodibenzo-*p*-dioxins)	34465-46-8	0.000063 or CMBST[11]	0.001 or CMBST[11]
		HxCDFs (All Hexachlorodibenzofurans)	55684-94-1	0.000063 or CMBST[11]	0.001 or CMBST[11]
		1,2,3,4,6,7,8,9-Octachlorodibenzo-*p*-dioxin (OCDD)	3268-87-9	0.000063 or CMBST[11]	0.005 or CMBST[11]
		1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001-02-0	0.000063 or CMBST[11]	0.005 or CMBST[11]

		PeCDDs (All Pentachlorodibenzo-*p*-dioxins)	36088-22-9	0.000063 or CMBST[11]	0.001 or CMBST[11]
		PeCDFs (All Pentachlorodibenzofurans)	30402-15-4	0.000035 or CMBST[11]	0.001 or CMBST[11]
		TCDDs (All tetrachlorodi-benzo-*p*-dioxins)	41903-57-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		TCDFs (All tetrachlorodibenzofurans)	55722-27-5	0.000063 or CMBST[11]	0.001 or CMBST[11]
		Arsenic	7440-36-0	1.4	5.0 mg/L TCLP
K175	Wastewater treatment sludge from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	Mercury[12]	7438-97-6	NA	0.025 mg/L TCLP
		pH[12]		NA	pH ≤6.0
	All K175 wastewaters	Mercury	7438-97-6	0.15	NA
* * * * *	* *				

BILLING CODE 6560-50-C

* * * * * * *

Footnotes to Treatment Standard Table 268.40

[1] The waste descriptions provided in this table do not replace waste descriptions in 40 CFR Part 261. Descriptions of Treatment/Regulatory Subcategories are provided, as needed, to distinguish between applicability of different standards.

[2] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[3] Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.

[4] All treatment standards expressed as a Technology Code or combination of Technology Codes are explained in detail in 40 CFR 268.42 Table 1–Technology Codes and Descriptions of Technology-Based Standards.

[5] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * * * *

[11] For these wastes, the definition of CMBST is limited to: (1) combustion units operating under 40 CFR 266, (2) combustion units permitted under 40 CFR part 264, subpart O, or (3) combustion units operating under 40 CFR 265, subpart O, which have obtained a determination of equivalent treatment under 268.42(b).

[12] Disposal of K175 wastes that have complied with all applicable 40 CFR 268.40 treatment standards must also be macroencapsulated in accordance with 40 CFR 268.45 Table 1 unless the waste is placed in:

(1) A Subtitle C monofill containing only K175 wastes that meet all applicable 40 CFR 268.40 treatment standards; or

(2) A dedicated Subtitle C landfill cell in which all other wastes being co-disposed are at pH≤6.0.

* * * * *

10. In § 268.48 the Table is amended by adding in alphabetical sequence the following entries under the heading organic constituents: (The footnotes are republished without change.)

§ 268.48 Universal treatment standards.

(a) * * *

UNIVERSAL TREATMENT STANDARDS

[Note: NA means not applicable]

Regulated constituent common name	CAS[1] number	Wastewater standard	Nonwastewater standard
		Concentration in mg/L[2]	Concentration in mg/Kg[3] unless noted as "mg/L TCLP"
* * * * * * *			
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8–HpCDD)	35822–46–9	0.000035	0.0025
1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-HpCDF)	67562–39–4	0.000035	0.0025
1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-HpCDF)	55673–89–7	0.000035	0.0025
* * * * * * *			
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3268–87–9	0.000063	0.005
1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	39001–02–0	0.000063	0.005
* * * * * * *			

* * * * * * *

[1] CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with its salts and/or esters, the CAS number is given for the parent compound only.

[2] Concentration standards for wastewaters are expressed in mg/L and are based on analysis of composite samples.

[3] Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR Part 264, Subpart O, or 40 CFR Part 265, Subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in 40 CFR 268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.

* * * * *

PART 271—REQUIREMENTS FOR AUTHORIZATION OF STATE HAZARDOUS WASTE PROGRAMS

11. The authority citation for Part 271 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), and 6926.

12. In § 271.1(j) tables 1 and 2 are amended by adding the following entries in chronological order by date of publication to read as follows.

§ 271.1 Purpose and scope.

* * * * *

(j) * * *

TABLE 1.—REGULATIONS IMPLEMENTING THE HAZARDOUS AND SOLID WASTE AMENDMENTS OF 1984

Promulgation date	Title of regulation	**Federal Register** reference	Effective date
* * * * * * *			
September 29, 2000	Listing of Hazardous Wastes K174 and K175.	65 FR 67132	May 7, 2001.
* * * * * * *			

TABLE 2.—SELF IMPLEMENTING PROVISIONS OF THE SOLID WASTE AMENDMENTS OF 1984

Effective date	Self-implementing provision	RCRA citation	**Federal Register** reference
* * * * * * *			
May 7, 2001	Prohibition on land disposal of K174 and K175 wastes, and prohibition on land disposal of radioactive waste mixed with K174 and K175 wastes, including soil and debris..	3004(g)(4)(C) and 3004(m)	November 8, 2000. 65 FR 67132.
* * * * * * *			

* * * * *

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

13. The authority citation for part 302 continues to read as follows:

Authority: 42 U.S.C. 9602, 9603, and 9604; 33 U.S.C. 1321 and 1361.

14. In § 302.4, Table 302.4 is amended by adding the following new entries in alphanumeric order at the end of the table to read as follows:

§ 302.4 Designation of hazardous substances.

* * * * *

TABLE 302.4—LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

[Note: All Comments/Notes Are Located at the End of This Table]

Hazardous substance	CASRN	Regulatory synonyms	Statutory			Final RQ	
			RQ	Code †	RCRA waste No.	Category	Pounds (KG)
* * *	*	*	*		*		*
K174[f]	.....	.....	1*	4	K174	X	1(0.454)
* * *	*	*	*		*		*
K175[f]	.....	.....	1*	4	K175	X	1(0.454)

† Indicates the statutory sources as defined by 1, 2, 3, and 4 below.
1 *—Indicates that the 1-pound RQ is a CERCLA statutory RQ.
4—Indicates that the statutory source for designation of this hazardous substance under CERCLA is RCRA Section 3001.
[f] See 40 CFR 302.6(b)(1) for application of the mixture rule to this hazardous waste.

15. Section 302.6 is amended by revising paragraph (b)(1)(iii) to read as follows:

§ 302.6 Notification requirements.

* * * * *

(b) * * *

(1) * * *

(iii) For waste streams K169, K170, K171, K172, K174, and K175, knowledge of the quantity of all of the hazardous constituent(s) may be assumed, based on the following maximum observed constituent concentrations identified by EPA:

Waste	Constituent	max ppm
K174	2,3,7,8-TCDD	0.000039
	1,2,3,7,8-PeCDD	0.0000108
	1,2,3,4,7,8,-HxCDD	0.0000241
	1,2,3,6,7,8,-HxCDD	0.000083
	1,2,3,7,8,9,-HxCDD	0.000062
	1,2,3,4,6,7,8-HpCDD	0.00123
	OCDD	0.0129
	2,3,7,8-TCDF	0.000145
	1,2,3,7,8-PeCDF	0.0000777
	2,3,4,7,8-PeCDF	0.000127
	1,2,3,4,7,8-HxCDF	0.001425
	1,2,3,6,7,8-HxCDF	0.000281
	1,2,3,7,8,9-HxCDF	0.00014
	2,3,4,6,7,8-HxCDF	0.000648
	1,2,3,4,6,7,8-HpCDF	0.0207
	1,2,3,4,7,8,9-HpCDF	0.0135
	OCDF	0.212
K175	Mercury	9200

* * * * *

[FR Doc. 00–25928 Filed 11–7–00; 8:45 am]

BILLING CODE 6560–50–P

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Hydrocarbons, Incorporation by reference, Intergovernmental relations, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: November 28, 2000.

Felicia Marcus,

Regional Administrator, Region IX.

Part 52, chapter I, title 40 of the Code of Federal Regulations is amended as follows:

PART 52—[AMENDED]

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart D—Arizona

2. Section 52.120 is amended by adding paragraph (c)(84)(i)(F) to read as follows:

§ 52.120 Identification of plan.

* * * * *

(c) * * *

(84)

(i) * * *

(F) Amendments to Rules 5–18–740, 5–19–800, and 5–24–1055 adopted on February 22, 1995.

* * * * *

[FR Doc. 00–32557 Filed 12–22–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 268

[FRL–6921–5]

RIN 2050–AE76

Deferral of Phase IV Standards for PCB's as a Constituent Subject to Treatment in Soil

AGENCY: Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: EPA is temporarily deferring a portion of the rule applying Land Disposal Restrictions (LDR) under the Resource Conservation and Recovery Act (RCRA) to constituents subject to treatment (CST) in soils contaminated with certain characteristic hazardous wastes. EPA promulgated this rule on May 26, 1998. Specifically, EPA is temporarily deferring the requirement that polychlorinated biphenyls (PCBs) be considered a CST when they are present in soils that exhibit the Toxicity Characteristic for metals. EPA is taking this action because the regulation appears to be discouraging generators from cleaning up contaminated soils, which is contrary to what EPA intended when we promulgated alternative treatment standards for contaminated soils. In addition, EPA needs more time to restudy the issue of appropriate treatment standards for metal-contaminated soils which also contain PCBs as CST. The Agency still requires generators to treat these soils to meet LDR standards for all hazardous constituents except PCBs. Generators also are required to treat PCBs if the total concentration of halogenated organic compounds in the soil equals or exceeds 1000 parts per million.

DATES: This rule is effective December 26, 2000.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, VA 22202. The docket identification number is F–2000–PCBP–FFFFF.

The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling 703 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. The index and some supporting materials are available electronically. See the ''Supplementary Information'' section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C. metropolitan area, call (703) 412–9810 or TDD (703) 412–3323. For more detailed information on specific aspects of this rulemaking, contact Ernesto Brown, Office of Solid Waste, Mail Code 5303W, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave NW, Washington, D.C. 20460–0002, (703) 308–8608, brown.ernie@epa.gov

SUPPLEMENTARY INFORMATION: You can find the index and the following supporting materials on the Internet at: http://www.epa.gov/epaoswer/hazwaste/ldr/index.htm

Preamble Outline

I. Authority

These regulations are promulgated under the authority of sections 1006(b), 2002, and 3004 of RCRA, as amended, 42 U.S.C. 6905, 6012(a), 6921, and 6924.

II. Background

A. Land Disposal Restrictions Program

The LDR program generally requires that generators of hazardous wastes pretreat the wastes before they can be disposed of on land. The treatment must substantially reduce the toxicity or mobility of the hazardous waste to minimize short- and long-term threats to human health and the environment posed by the waste's disposal. See RCRA section 3004 (m)(1). EPA typically accomplishes this objective by requiring that hazardous constituents in the wastes be treated to, or be present at levels no greater than levels, set out in 40 CFR Part 268, reflecting performance of the Best Demonstrated Available Technology for the waste. In addition to BDAT treatment levels, EPA uses treatability variances (both risk-based and technology based), and determination equivalency (see 40 CFR 268.42) for situations where the treatment standard is specified as a method of treatment and other technologies perform comparably to the specified method.

B. Contaminated Soils

Contaminated soils excavated during a remedial action, whether it is conducted under RCRA, Superfund, or state authority, are subject to the Land Disposal Restriction (LDR) requirements when the soil contains listed hazardous

waste or exhibits a hazardous characteristic, and when it is excavated outside of a corrective action management unit (CAMU) or an area of contamination (AOC). EPA's rules require that soils contamination with hazardous waste(s) meet LDR requirements when a generator excavates such soils and places them in a land disposal unit (See RCRA sections 3004(d)(3) and (e)(3) (requiring LDR requirements to apply to such contaminated soils); 63 FR at 28602 (May 26, 1998)).[1] The LDR requirements specify constituent concentrations which must be met in the treated soils, or in some cases particular technologies which must be employed, prior to placement of the soils. Application of these requirements to remedial actions has sometimes reduced the flexibility needed to make site-specific remedial decisions, and thus sometimes presented a barrier to cost-effective management of contaminated media. (As explained in the following section, however, the special standards for contaminated soils which EPA adopted in the Phase 4 rule should alleviate some of these difficulties, since those standards can be achieved without resort to combustion treatment technology.) While there are alternatives to managing contaminated soils which mitigate the burden of meeting these requirements (such as obtaining a treatability variance once the LDRs are triggered), it has been EPA's experience that the LDRs often have driven remedial decisions away from excavating the soils in the first place. Under such circumstances, facilities, may simply have deferred cleanup to a later date. In cases where cleanup was still pursued, it was often the case that either containment remedies have been employed (*e.g.*, cap and cover in-place, thereby avoiding the LDRs) or the soils have been treated in-situ (which allows treatment without triggering LDRs). While containment and in-situ treatment of soils offer management options which have generally been less expensive than complying with the LDR requirements for the media, they may not always result in the most environmentally protective cleanup.

C. Alternative Treatment Standards for Contaminated Soils

EPA has long recognized the incentives and objectives for the hazardous waste prevention and cleanup programs differ fundamentally. EPA has developed extensive policies and regulations to preserve RCRA's goal of protectiveness, while providing oversight agencies the tools necessary to make effective site-specific remedial decisions. One such regulation is the Phase IV LDR Rule (63 FR 28603–04). Promulgated in May 26, 1998, the Phase IV LDR Rule established alternative soil treatment standards, in part, to remedy the disincentives to excavation/ex-situ treatment of soils which were created by application of the LDRs in a remedial setting. In recognition of the physical and chemical differences which often exist between as-generated waste and contaminated soils, these standards require that contaminated soils which will be land disposed be treated to reduce concentrations of hazardous constituents by 90 percent or meet hazardous constituent concentrations that are ten times the universal treatment standard (UTS), whichever is greater. (See *Louisiana Environmental Action Network* v. *EPA*, 172 F. 3d 65, 67, 70 (D.C. Cir. 1999) which upheld EPA's authority to develop more lenient treatment standards for contaminated soils and other remediation wastes in order to encourage remediation involving exhumation and treatment of these wastes, since ''the agency's authority to compel high-quality disposition of such wastes is not as great as it is for as yet undisposed waste.'') The soil treatment standards apply to all underlying hazardous constituents reasonably expected to be present in any given volume of contaminated soil when such constituents are found at initial concentrations greater than ten times the UTS (See 63 FR at 28608–28609; 40 CFR 268.49(d)).

D. Constituents Subject to Treatment

Importantly for the present rule, the existing standards further require that generators treat all constituents subject to treatment (CST) [2] in contaminated soils. See 63 FR at 28608–09; 40 CFR 268.49(d). A constituent subject to treatment is any hazardous constituent listed at 40 CFR 264.48 that might be present in the soil at levels exceeding 10 times the UTS for that constituent. See 40 CFR 268.49(b). In the Phase IV rule, EPA imposed this requirement for the first time on soils exhibiting the Toxicity Characteristic (TC) for metals, and on soils containing listed hazardous wastes.[3]

PCBs can be an example of a CST in contaminated soils, including metal-containing soils. Where this occurs, the Phase IV rule establishes a treatment standard of 100 ppm total PCBs in soil (10 times the UTS) or 90 percent reduction of total PCB concentrations in the soil, whichever is less stringent. See 40 CFR 268.49(c). EPA found that generators can achieve these standards without applying combustion technology, (see 63 FR at 28616 Table 4), although treatment often requires that heat be applied to the waste, as occurs with thermal desorption technology. The rules also provide another treatment option: to treat soils to the standards applicable to process wastes, although in that instance as well, soils that exhibit a hazardous characteristic must achieve treatment standards for CSTs before they are land disposed. 40 CFR 268.40(e). EPA found that generators can achieve these standards without applying combustion technology, (see 63 FR at 28616 Table 4), although treatment often requires that heat be applied to the waste, as occurs with thermal desorption technology.

RCRA also addresses PCBs in soils under Section 3004(d)(2)(E), the so-called California list provision. This provision prohibits land disposal of hazardous wastes that contain halogenated organic compounds at concentrations equal to or exceeding 1000 ppm. Congress specified this level (and the other California list levels) as a starting point in the land disposal prohibition process, prohibiting land disposal of wastes that pose the most obvious hazards. See 51 FR at 44718 (Dec. 11, 1986). PCBs are a type of halogenated organic compound. Consequently, in the absence of the Phase IV PCB standards, the 1000 ppm statutory level would be the upper bound of PCBs that could be in contaminated soil without triggering LDR treatment requirements (*i.e.*, contaminated soils could not be land disposed equal to or greater than 1000 ppm total HOCs all of which, in theory, could be PCBs).

[1] Technically, the soils which are subject to LDRs, are (a) soil which contains a listed hazardous waste, and (b) soil which exhibits (or, in some cases, exhibited) a characteristic of hazardous waste. See discussion at 63 FR 28617–28619. This action applies to a subset of the second of these types of contaminated soils, as explained later in this notice. This action also uses the term ''contaminated soils'' to refer to soils which may potentially be subject to LDRs.

[2] In response to comments to the NPRM (February 16, 2000), the Agency is using the term ''constituents subject to treatment'' defined in 40 CFR 268.49(d) instead of underlying hazardous constituents which was used in the proposal. This is to avoid confusing the term UHC defined in 40 CFR 268.2(i) with constituents subject to treatment (a term EPA developed specifically for the alternative treatment standard for contaminated soils, although CST and UHC are essentially synonymous).

[3] The requirement already applied, however, to soils exhibiting the ignitability, corrosivity, reactivity, or organic toxicity characteristics.

III. Need to Defer Portions of the Phase IV Rule

A. Why Has Remediation of Certain PCB-Contaminated Soils Been Impeded?

Unfortunately, initial indications are that the requirement that PCBs be treated as a CST in soils exhibiting the TC for metals is having an effect opposite to what EPA intended. As EPA noted at proposal, cleanups of sites with metal characteristic soils where PCBs are now a CST and where the remedy was to involve soil exhumation, treatment and redisposal have stopped, or been seriously delayed. See Letter from Phillip Comella Esq. to Steven Silverman, EPA Office of General Counsel, April 21, 1999 detailing experiences of private entities, including waste generators, treaters and disposers; Memorandum to Administrative Record, November 2, 1999 (detailing experiences of EPA site managers). As set out in more detail in these communications, the reason is that as a practical matter a choice is now being presented between combustion and leaving soils in place. Some of the reasons attributed for this are:

I. limited effective non-combustion treatment presently available for PCBs, and what there is involves mobile units which face potential permitting delays at non-Superfund sites.

II. lack of State authorization to implement the amended soil standards, thus retaining PCBs as a CST, without the option of treating to 10 times the Universal Treatment Standards or 90 percent reduction from initial concentration.

Commenters acknowledge that at least some of these situations could be eligible for a treatment variance under 40 CFR 268.44. Such variances can be requested when a standard is demonstrably not achievable using non-combustion technology, or when treatment to LDR levels would discourage aggressive remediation. See *LEAN* v. *EPA*, 172 F. 3d at 70 (upholding EPA authority to issue treatment variances for remediation wastes where existing treatment standard discourages aggressive remediation). But there are undesirable delays attendant in the variance process, and EPA in any case believes that if a problem with a rule is widespread, it is appropriate to amend the rule rather than issuing variances piecemeal.

Commenters to the proposed rule reiterated that cleanups of TC metal soils containing PCBs is being impeded, but provided no additional empirical information in support.

EPA does not necessarily agree with all of these comments, but does believe that remediations involving TC soils contaminated with both PCBs and metals are being delayed or stopped. This situation has taken place after promulgation of the new Phase IV requirements respecting these soils, and, as indicated at proposal, it appears that at least some of the reasons for these delays are legitimately attributable to the new requirements in the Phase IV rule. Commenters all supported this overall conclusion (albeit anecdotally rather than empirically). Thus, this aspect of the Phase IV rule appears at least potentially to be having an environmentally counterproductive effect of delaying cleanups and discouraging aggressive remediation.

B. Why the Temporary Deferral?

EPA believes it is appropriate to temporarily defer the requirement that PCBs be treated as an CST in TC soils under RCRA 1006(b) in order to investigate how best to integrate the RCRA LDR requirements for PCBs with the cleanup programs under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and RCRA (both the specific ''corrective action'' requirements of RCRA 3004(u) and (v) and 3008(h), and the cleanup requirements applying to RCRA regulated units, *e.g.*, during closure).

Another reason is to provide EPA an opportunity to investigate further the relationship between the RCRA rules and those under the authority of the Toxic Substances Control Act (TSCA) for PCB remediation wastes. See 63 FR 35384 (June 29, 1998). TSCA allows ''bulk PCB remediation wastes'' including soils containing 50 ppm PCBs or greater to be disposed without treatment in a TSCA disposal facility or an RCRA subtitle C landfill. See 40 CFR 761.61(b)(2)(i). These TSCA standards, which allow disposal without treatment of soils containing any concentrations of PCBs greater or equal to 50 ppm, were not established to represent levels at which threats posed by land disposal of PCB-containing soils are minimized. Furthermore, those rules require persons disposing of PCBs to comply with all other applicable Federal, State, and local laws and regulations, and should not be read as overriding applicable RCRA requirements. Nonetheless, the TSCA rules serves a similar purpose as the RCRA Phase IV rule—an attempt to encourage aggressive remediation of contaminated soil (see 63 FR at 35409) and reflects the Agency's judgment that land disposal of these soils is reasonably protective.

Under RCRA the standard set forth by Congress for the LDR program was to ''* * * promulgate regulations specifying those levels or methods of treatment, if any, which substantially diminish the toxicity of the waste or substantially reduce the likelihood of migration of hazardous constituents from the waste so that short-term and long-term threats to human health and the environment are minimized.'' See 42 U.S.C. 6924(m). Under TSCA Congress authorized EPA to prescribe methods for the disposal of PCBs so long as they do not ''present an unreasonable risk to health or the environment.'' See 15 U.S.C. 2605(e). TSCA also explicitly requires EPA to consider economic impact when promulgating rules under its authority. See 15 U.S.C. 2601(b) and (c). By comparison, Congress did not identify economic considerations under RCRA in setting treatment standards. ''* * * Waste that is nevertheless generated should be treated, stored or disposed of so as to minimize the present and future threat to human health and the environment.'' See 42 U.S.C. 6902(b). Thus, the RCRA LDR program differs from regulations promulgated under TSCA in two respects. First, the RCRA LDR program has an explicit requirement to treat waste prior to disposal. TSCA contains no such requirement. Second, TSCA has an explicit requirement to consider economic impacts when the Agency promulgates regulations under its authority that is not present in RCRA. Although both types of regulations are intended to address health and environmental risks from PCBs, these key differences between RCRA and TSCA can lead to different approaches to environmental regulation. Certainly as an interim measure EPA believes it appropriate to seek to coordinate better the two sets of rules, and thus to defer the Phase IV rule while we further evaluate the workings and actual effect of the two sets of rules. EPA believes it is appropriate to temporarily defer the requirement that PCBs be treated as a CST in TC soils under RCRA 1006(b) in order to investigate how best to integrate the RCRA LDR requirements for PCBs with the cleanup programs under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and RCRA (both the specific ''corrective action'' requirements of RCRA 3004(u) and (v) and 3008(h), and the cleanup requirements applying to RCRA regulated units, *e.g.*, during closure).

C. What Is the Effect of the Deferral?

The statutory California list provision mentioned above (RCRA section 3004(d)(2)(E)) will create an upper bound on the concentration of PCBs in

soil that could be disposed without treatment. As explained earlier, that upper bound will be 1,000 ppm, the statutory limit for halogenated organic compounds. This means that the temporary deferral will only affect a relatively narrow class of wastes: soils exhibiting the TC for metals and containing PCBs in concentration between 100 ppm and a maximum of 1000 ppm (this maximum applying only if no other HOCs are present in the contaminated soil).

RCRA allows temporary deferral of the Phase IV requirement. As in the temporary deferral of RCRA requirements to accommodate a potentially overlapping regulatory regime for underground storage tanks at issue in *Edison Electric Inst.* v. *EPA*, 2 F. 3d 438 (D.C. Cir. 1993), EPA here needs to investigate further the relationship of different sets of rules addressing PCB-contaminated soil disposal. These soils will be managed protectively during the deferral period, either in RCRA subtitle C or TSCA-approved landfills, and there is a reasonable upper bound on the concentration of PCBs that could be disposed of without treatment. See 2 F.3d at 452–53 citing these factors as a reasonable justification for a comparable temporary deferral. Moreover, EPA may permissibly alter land disposal restriction treatment standards for remediation wastes in order to encourage aggressive remediations. See *LEAN,* 172 F. 3d at 69–70.

The scope of this deferral is exclusive to soils exhibiting the TC for metals which contain PCBs as an underlying hazardous constituent. The requirement to treat PCBs as a CST also can apply to soils containing a listed hazardous waste, where the generator elects to comply with the alternative soil standard of 10 times Universal Treatment Standard or 90 percent reduction of initial concentrations. See 40 CFR 268. 49(d). It should be noted, however, that a generator would have the option of treating such soil to the standards for process wastes, see 40 CFR 268.49(b), in which case there is no requirement to treat CSTs. Thus, generators do not face the same quandary as they do with soils exhibiting the TC for metals which contain PCBs as a .

IV. Analysis of and Response to Comments

In general, all comments supported the deferral of PCBs as a constituent subject to treatment in soils. Commenters felt that the inconsistency between RCRA and TSCA regulations concerning the treatment/disposal of material containing PCBs should be resolved.

As noted at proposal, EPA believes it is appropriate to seek a better coordination between the two sets of rules, and thus to defer PCBs as an CST in soils, while the Agency further evaluates the workings and actual effect of the two sets of rules. Several commenters suggested that EPA simply defer to the TSCA rule without an independent determination that the TSCA standards are sufficient to minimize threats posed by land disposal. EPA does not believe that this suggestion can be supported. RCRA requires that treatment standards for hazardous waste must minimize the threats posed by land disposal. RCRA section 3004(m). The TSCA rule was not developed to satisfy that standard. See, *e.g., Chemical Waste Management* v. *EPA*, 976 F. 2d 2, 25 (D.C. Cir. 1992) (EPA may not defer LDR treatment requirements to less stringent disposal requirements of another environmental statute); see also *Hazardous Waste Treatment Council* v. *EPA*, 886 F. 2d 355, 362–63 (D.C. Cir. 1989) noting stringency of the minimize threat standard in RCRA section 3004 (m), and further explaining why that requirement justifies LDR standards more stringent than those developed pursuant to less stringent statutory standards).

Another general recommendation is that EPA should extend the deferral to all soils, debris and PCB bulk product waste that contain listed hazardous waste, as well as for soils that are hazardous waste due to the exhibition of a TC for a metal. EPA has not received any hard information, or any convincing reasons, why the Phase IV requirements should be impeding treatment of soils contaminated with listed hazardous wastes. As already explained, the rules allow generators the option of treating the soil to the standards for process wastes, see 40 CFR 268.49(b), in which case there is no requirement to treat CSTs. Moreover, this alternative (to treat soil to meet the standards for listed hazardous waste) represents the status quo before the Phase IV rule (i.e. it merely restates already-existing regulatory requirements), so that one cannot properly attribute to the Phase IV rule any impediment to remediating these contaminated soils. Generators thus can continue to operate as they did before promulgation of the Phase IV rule.

V. State Authorization

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA hazardous waste program within the State. Following authorization, we maintain independent enforcement authority under sections 3007, 3008, 3013, and 7003 of RCRA, although authorized States have enforcement responsibility. A State would become authorized for today's proposed PCB treatment standard for contaminated soil by following the approval process described under 40 CFR 271.21. See 40 CFR 271 for the overall standards and requirements for authorization.

Like all land disposal restriction treatment standards, today's changes are proposed under the authority of 3004(g) and (m) of RCRA. These statutory provisions were enacted as part of the Hazardous and Solid Waste Amendments (HSWA) of 1984. Under section 3006(g) of RCRA, new requirements promulgated under the authority of statutory provisions added by HSWA go into effect in authorized States at the same time as they do in unauthorized States—as long as the new requirements are more stringent than the requirements a State is currently authorized to implement.

Authorized States are not required to modify their programs when we promulgate changes to Federal requirements that are less stringent than existing Federal requirements. This is because RCRA section 3009 allows the States to impose (or retain) standards that are more stringent than those in the Federal program. (See also 40 CFR 271.1(i)). Therefore, States that are authorized for the LDR program are not required to adopt today's changes, and these changes do not go into effect until the State revises its LDR program accordingly. However, we encourage States to allow compliance with the new PCB treatment standard for contaminated soil if they have the ability under State law to waive existing land disposal restriction treatment standards, or if they have adopted them but are not yet authorized. Again, if a State is not currently authorized for the LDR program, we will implement the new treatment standard in that State.

VI. Regulatory Assessments

A. Executive Order 12866

Under Executive Order 12866, (58 FR 51735 (October 4, 1993)) the Agency must determine whether a regulatory action is ''significant'' and therefore subject to OMB review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of

the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

OMB has determined that this rule is not a ''significant regulatory action'' under the terms of Executive Order 12866 and is therefore not subject to OMB review.''

Economic Assessment

We estimated the costs of today's final rule to determine if it is a significant regulation as defined by the Executive Order. The analysis considered compliance cost savings from the deferral and resulted in cost savings. A detailed discussion of the methodology used for estimating the costs, economic impacts and the benefits attributable to today's final rule, followed by a presentation of the cost, economic impact and benefit results were prepared and documented in the following report: ''Economic Assessment of the Deferral of Phase IV Land Disposal Restriction Treatment Standards for Polychlorinated Biphenyls (PCBs) as an Underlying Hazardous Constituent in Contaminated Soils.'' This report can be found in its entirety in the docket for today's final rule. A summary of the report is provided below.

1. Methodology

To estimate the cost savings associated with today's final rule deferring of CST requirements for PCB-containing hazardous soils, the Agency estimated the difference between the costs that would have been incurred in the absence of the deferral and the costs estimated under the post-regulatory environment with the deferral. The cost savings are reported based upon a shift of more expensive baseline treatment technologies (incineration, thermal desorption or nonthermal treatment for PCB-containing hazardous waste soils that exhibit a TC for metal) followed by immobilization of the residue to less expensive post-regulatory treatment including immobilization of soils exhibiting a TC for metal soils. Although generally placing soils that are metal contaminated are prohibited from being combusted, all of the contaminated soils affected by this rulemaking have incineration as an option. Only soils with an insignificant organic content are prohibited from combustion as a treatment technology. Soils with PCBs at levels greater than 10 ppm are considered to have sufficient organic content. See May 23, 1994 memo from Elliott Laws to Waste Management Directors I—X for further details.

2. Results

(a) Volume

The procedure for estimating the volumes of PCB-containing hazardous wastes affected by today's final rule is detailed in the background document ''Economic Assessment of the Deferral of Phase IV Land Disposal Restriction Treatment Standards for Polychlorinated Biphenyls (PCBs) as an Underlying Hazardous Constituent in Contaminated Soils,'' which was placed in the docket for today's final rule. To estimate volumes of TC hazardous PCB contaminated soils affected by this rulemaking, the Agency looked at data received from a waste treatment firm and extrapolated it national estimates of soils remediated using Biennial Reporting Systems data. The Agency estimates annual affected soil volumes to be 86,500 tons.

(b) Costs

The Phase IV LDR final rule[4] applied a requirement to treat all TC metal waste (i.e., wastes that are hazardous because they exhibit the toxicity characteristic for selected metals and carry the corresponding EPA hazardous waste number D004 through D011) for CSTs reasonably expected to be present.[5] In practical terms, this means that if a hazardous waste that is only hazardous for metal constituents also contains organic constituents above the UTS levels, those underlying organic constituents must also be treated to the UTS level if the waste is to be land disposed.[6] For PCBs, the UTS level is 10 ppm.[7, 8]

The Phase IV LDR final rule also established an alternative set of treatment standards for hazardous soils. These alternative standards were designed to encourage cost-effective cleanup of hazardous contaminated soils that are subject to LDRs. Prior to the Phase IV LDRs, hazardous soils were required to comply with the traditional technology-based treatment standards developed for processed industrial hazardous waste. These treatment standards often proved to be inappropriate (*e.g.*, not cost effective) and unachievable (*e.g.*, did not account for heterogeneous soil matrices) when applied to hazardous constituents present in soils. For example, in the case of TC metal soils containing PCBs, treating both metals and PCBs would entail a combination of treatment technologies. These technologies most likely would consist of incineration (or other thermal treatment) to destroy the PCBs, followed by immobilization of the ash to prevent the metallic constituents from leaching. This treatment approach is problematic because (1) it is expensive, (2) it destroys the soil, which is a valuable natural resource, and (3) incineration of metal bearing waste and/or soils is generally considered to be impermissible dilution (because it may allow metals to volatilize and enter the atmosphere) unless it has sufficient organic content to justify treatment. The alternative soil treatment standards provide more flexible, less stringent treatment requirements that, for many contaminants, are achievable using a variety of non-thermal treatment alternatives. For instance, a site may now choose to (1) reduce hazardous constituents by at least 90 percent of their initial concentration, or (2) meet ten times the applicable universal treatment standard.[9] Thus, for TC metal soils that contain PCBs, the PCBs currently must be treated to either 90 percent reduction or to 100 ppm (which is 10 times the UTS level), whichever is greater, prior to land disposal. EPA intended that these alternative treatment standards would allow soils to be treated using non-combustion treatment technologies.

To estimate costs saving resulting from this rule, EPA examined a number of thermal and non-thermal treatment technologies for PCBs and TC metals along with their estimated costs and commercial availability. The Agency then took the estimated soil volumes and assigned treatment trains to percentages of the affected volume (*e.g.* 10 percent of affected soils are estimated to be treated through in-situ

[4] 63 FR 28556, May 26, 1998.

[5] 40 CFR 268.4(e).

[6] Land disposal is defined under the Resource Conservation and Recovery Act (RCRA) broadly to include virtually all types of land-based solid waste management units such as landfills, waste piles, and surface impoundments.

[7] See 40 CFR 268.48 for the UTS level of PCB nonwastewaters at 10 ppm.

[8] The numerical treatment levels that must be met before a given waste can be land disposed, like the 10 ppm UTS level for PCBs, are based on a specific best demonstrated available technology (BDAT). For metals, the numerical treatment standards are based on immobilization. The BDAT for many organic constituents, including PCBs, is incineration. While the BDAT does not have to be used to reach the numerical treatment levels, the BDAT is often used in practice.

[9] 40 CFR § 268.49.

technologies) in both the baseline (*i.e.* pre-regulation) and post-rule. EPA's estimate of cost savings is the difference between the more expensive baseline treatment remedies (*e.g.* incineration) and the less expensive post-rule treatment remedies (*e.g.* stabilization). The baseline treatment remedies are more expensive because they require treatment of both PCBs and metal whereas the post-rule treatment remedies only require treatment of metals for the affected soils. The extent of the cost savings from the deferral of LDR treatment standards for TC metal PCB-containing hazardous waste soils depends on the decision whether to remediate the site, the decision to switch to in-situ clean-up remedies (avoiding LDR treatment standards) and the decision to pursue other administrative remedies such as treatability variances. As the result, EPA has estimated the incremental treatment cost savings attributable to the deferral of the Phase IV LDR treatment standards for PCBs as a CST in hazardous soils to be $47.6 million annually. EPA notes that these cost savings are not new savings under the Land Disposal Restriction program. Rather, these cost savings are saving previously provided from the PCB disposal rule (63 FR 34384, June 29, 1998). The PCB disposal rule allowed greater flexibility in the types of land disposal units that PCB-contaminated remediation waste could be placed in including RCRA Subtitle C hazardous waste landfills for soils with PCB concentrations greater than 50 ppm and Part 258 RCRA nonhazardous landfills for soils with PCB concentrations less than 50 ppm. See 40 CFR 761.61(a)(5)(ii)&(iii).

(c) Economic Impacts

EPA has not completed an economic impact analysis with today's final rule due to uncertainty regarding the identity of owner/operators of affected sites. Because this final rule results in cost savings mentioned above, any economic impacts would be favorable to affected entities. Because affected entities would be subject to less stringent treatment requirements for PCBs in TC contaminated soils, they would only have to treat the metals in the soil which would mean lower treatment costs and therefore less expensive site cleanups.

(d) Benefits

The primary benefit of this final rule is to encourage remediation of soils contaminated with both TC metals and PCB soils. The Economic Analysis completed for this rule documents a list of public commenters who have stipulated that they are not conducting cleanups under current regulations. These additional clean ups will reduce the potential for environmental releases of hazardous constituents, given the increased treatment of TC metals and placement of these soils into secure land disposal units.

B. Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et. seq.

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) A small business; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant adverse economic impact on small entities, since the primary purpose of the regulatory flexibility analyses is to identify and address regulatory alternatives ''which minimize any significant economic impact of the proposed rule on small entities.'' 5 U.S.C. Sections 603 and 604. Thus, an agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on all of the small entities subject to the rule. The overall economic impact of today's final rule to defer LDR treatment standards for TC metal PCB-containing hazardous waste soils results in cost savings of $47.6 million (for additional detail see cost savings discussion above). We have therefore concluded that today's final rule will relieve regulatory burden for all small entities.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not include a federal mandate that may result in estimated costs of $100 million or more to either state, local, or tribal governments in the aggregate. The rule would not impose any federal intergovernmental mandate because it imposes no enforceable duty upon state, tribal or local governments. States, tribes and local governments would have no compliance costs under this rule. It is expected that states will adopt this rule, and submit it for inclusion in their authorized RCRA programs, but they have no legally enforceable duty to do so. For the same reasons, EPA also has determined that this rule contains no regulatory requirements that might significantly or uniquely affect local

governments. Thus, today's rule is not subject to the requirements of Sections 202 and 205 of UMRA.

D. Paperwork Reduction Act

The information collection requirements in this final rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* EPA has prepared and Information Collection Request (ICR) document: OSWER ICR No. 1442.15 (LDR Phase IV), and a copy may be obtained from Sandy Farmer, Collections Strategies Division; U.S. Environmental Protection Agency (2822); 1200 Pennsylvania Ave. N.W., Washington, D.C. 20460–0002, by e-mail at farmer.sandy@epamail.epa.gov, or by calling (202) 260–2740. A copy may also be downloaded off the internet at http://www.epa.gov/icr.

EPA believes the changes in this final rule to the information collection do not constitute a substantive or material modification. This rule would not change any of the information collection requirements that are currently applicable RCRA Land Disposal Restrictions Phase IV except to possibly reduce those requirements by requiring fewer references to PCBs. There is no net increase in recordkeeping and reporting requirements (if anything, there may be a slight decrease, as just noted). As a result, the reporting, notification, or recordkeeping (information) provisions of this rule will not need to be submitted for approval to the Office of Management and Budget (OMB) under section 3504(b) of the Paperwork Reduction Act, 44 U.S.C. 3501 *et. seq.*

E. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045: ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This final rule is not subject to the Executive Order because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

F. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This final rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

G. Executive Order 12898: Environmental Justice

Under Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,'' as well as through EPA's April 1995, ''Environmental Justice Strategy, OSWER Environmental Justice Task Force Action Agenda Report,'' and National Environmental Justice Advisory Council, EPA has undertaken to incorporate environmental justice into its policies and programs. EPA is committed to addressing environmental justice concerns, and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income, bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities, and all people live in clean and sustainable communities. To address this goal, EPA considered the impacts of this final rule on low-income populations and minority populations and concluded.

Today's final rule is intended to encourage aggressive remediation of contaminated soils, and thus, and to benefit all populations. As such, this rule is not expected to cause any disproportionately high and adverse impacts to minority or low-income communities versus non-minority or affluent communities.

H. Executive Order 13132: Federalism

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' are defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. EPA has determined that this rule, would not have ''federalism implications'' within the meaning of Executive Order 13132. This is because the rule would not impose any direct effects on States, would not preempt State law, and would not constrain State administrative discretion. In fact, States need not even adopt this final rule as part of their authorized programs. Thus, the Executive Order does not apply to this rule.

I. Executive Order 13084: Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition,

Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.'' Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. Today's rule does not create a mandate on State, local or tribal governments. The rule does not impose any enforceable duties on these entities. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A Major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is [OR is not] a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective.

List of Subjects in 40 CFR Part 268

Environmental protection, Hazardous waste, Reporting and recordkeeping requirements.

Dated: December 15, 2000.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, chapter 1, title 40 of the Code of Federal Regulations is amended as follows:

PART 268—LAND DISPOSAL RESTRICTIONS

1. The authority citation for Part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Subpart C—[Amended]

2. Section 268.32 is added to subpart C to read as follows:

§ 268.32 Waste specific prohibitions—Soils exhibiting the toxicity characteristic for metals and containing PCBs.

(a) Effective December 26, 2000, the following wastes are prohibited from land disposal: any volumes of soil exhibiting the toxicity characteristic solely because of the presence of metals (D004—D011) and containing PCBs.

(b) The requirements of paragraph (a) of this section do not apply if:

(1)(i) The wastes contain halogenated organic compounds in total concentration less than 1,000 mg/kg; and

(ii) The wastes meet the treatment standards specified in Subpart D of this part for EPA hazardous waste numbers D004—D011, as applicable; or

(2)(i) The wastes contain halogenated organic compounds in total concentration less than 1,000 mg/kg; and

(ii) The wastes meet the alternative treatment standards specified in § 268.49 for contaminated soil; or

(3) Persons have been granted an exemption from a prohibition pursuant to a petition under § 268.6, with respect to those wastes and units covered by the petition; or

(4) The wastes meet applicable alternative treatment standards established pursuant to a petition granted under § 268.44.

3. Appendix III to Part 268 is added to subpart C to read as follows:

Appendix III to Part 268—List of Halogenated Organic Compounds Regulated Under § 268.32

In determining the concentration of HOCs in a hazardous waste for purposes of the § 268.32 land disposal prohibition, EPA has defined the HOCs that must be included in a calculation as any compounds having a carbon-halogen bond which are listed in this Appendix (see § 268.2). Appendix III to Part 268 consists of the following compounds:

I. Volatiles

1. Bromodichloromethane
2. Bromomethane
3. Carbon Tetrachloride
4. Chlorobenzene
5. 2-Chloro-1,3-butadiene
6. Chlorodibromomethane
7. Chloroethane
8. 2-Chloroethyl vinyl ether
9. Chloroform
10. Chloromethane
11. 3-Chloropropene
12. 1,2-Dibromo-3-chloropropane
13. 1,2-Dibromomethane
14. Dibromomethane
15. Trans-1,4-Dichloro-2—butene
16. Dichlorodifluoromethane
17. 1,1-Dichloroethane
18. 1,2-Dichloroethane
19. 1,1-Dichloroethylene
20. Trans-1,2-Dichloroethene
21. 1,2-Dichloropropane
22. Trans-1,3-Dichloropropene
23. cis-1,3-Dichloropropene
24. Iodomethane
25. Methylene chloride
26. 1,1,1,2-Tetrachloroethane
27. 1,1,2,2-Tetrachloroethane
28. Tetrachloroethene
29. Tribromomethane
30. 1,1,1-Trichloroethane
31. 1,1,2-Trichloroethane
32. Trichlorothene
33. Trichloromonofluoromethane
34. 1,2,3-Thrichloropropane
35. Vinyl Chloride

II. Semivolatiles

1. Bis(2-chloroethoxy)ethane
2. Bis(2-chloroethyl)ether
3. Bis(2-chloroisopropyl)ether
4. p-Chloroaniline
5. Chlorobenzilate
6. p-Chloro-m-cresol
7. 2-Chloronaphthalene
8. 2-Chlorphenol
9. 3-Chloropropionitrile
10. m-Dichlorobenzene
11. o-Dichlorobenzene
12. p-Dichlorobenzene
13. 3.3′-Dichlorobenzidine
14. 2,4-Dichlorophenol
15. 2,6-Dichlorophenol
16. Hexachlorobenzene
17. Hexachlorobutadiene
18. Hexachlorocyclopentadiene
19. Hexachloroethane
20. Hexachloroprophene
21. Hexachlorpropene
22. 4,4′-Methylenebis(2-chloroanaline)
23. Pentachlorobenzene
24. Pentachloroethane
25. Pentachloronitrobenzene
26. Pentachlorophenol
27. Pronamide
28. 1,2,4,5-Tetrachlorobenzene
29. 2,3,4,6-Tetrachlorophenol
30. 1,2,4-Trichlorobenzene
31. 2,4,5-Trichlorophenol
32. 2,4,6-Trichlorophenol
33. Tris(2,3-dibromopropyl)phosphate

III. Organochlorine Pesticides

1. Aldrin
2. alpha-BHC
3. beta-BHC
4. delta-BHC
5. gamma-BHC
6. Chlorodane
7. DDD
8. DDE
9. DDT
10. Dieldrin
11. Endosulfan I
12. Endosulfan II
13. Endrin
14. Endrin aldehyde
15. Heptachlor
16. Heptachlor epoxide
17. Isodrin
18. Kepone
19. Methoxyclor
20. Toxaphene

IV. Phenoxyacetic Acid Herbicides

1. 2,4-Dichlorophenoxyacetic acid
2. Silvex
3. 2,4,5-T

V. PCBs

1. Aroclor 1016
2. Aroclor 1221
3. Aroclor 1232
4. Aroclor 1242
5. Aroclor 1248
6. Aroclor 1254
7. Aroclor 1260
8. PCBs not otherwise specified

VI. Dioxins and Furans

1. Hexachlorodibenzo-p-dioxins
2. Hexachlorodibenzofuran
3. Pentachlorodibenzo-p-dioxins
4. Pentachlorodibenzofuran
5. Tetrachlorodibenzo-p-dioxins
6. Tetrachlorodibenzofuran
7. 2,3,7,8-Tetrachlorodibenzo-p-dioxin

Subpart D—[Amended]

4. In § 268.48(a) Table UTS-Universal Treatment Standards is amended by adding a reference to new footnote number (8) to the entry for ''Total PCBs (sum of all PCB isomers, or all Aroclors),'' and adding footnote (8), to read as follows:

§ 268.48 Universal treatment standards.

* * * * *

(a) * * *

Regulated Constituent Common Name	CAS [1] Number	Wastewater Standard	Nonwastewater Standard
		Concentration in mg/l [2]	Concentration in mg/l [2] unless noted as ''mg/l TCLP''
* * * * *			
Total PCBs (sum of all PCB isomers, or all Arcolors)[8]	1336–36–3	0.10	10
* * * * *			

[8] This standard is temporarily deferred for soil exhibiting a hazardous characteristic due to D004–D011 only.

* * * * *

5. Section 268.49 is amended by revising paragraph (d) to read as follows:

§ 268.49 Alternative LDR treatment standards for contaminated soil.

* * * * *

(d) *Constituents subject to treatment.* When applying the soil treatment standards in paragraph (c) of this section, constituents subject to treatment are any constituents listed in § 268.48 Table UTS-Universal Treatment Standards that are reasonably expected to be present in any given volume of contaminated soil, except flouride, selenium, sulfides, vanadium, zinc, and that are present at concentrations greater than ten times the universal treatment standard. PCBs are not constituent subject to treatment in any given volume of soil which exhibits the toxicity characteristic solely because of the presence of metals.

* * * * *

[FR Doc. 00–32670 Filed 12–22–00; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 271

[FRL–6921–9]

Montana: Final Authorization of State Hazardous Waste Management Program Revision

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: On May 9, 2000, we published an Immediate Final Rule at 65 FR 26750 to authorize changes to Montana's hazardous waste program under the Resource Conservation and Recovery Act (RCRA). At that time, we determined that the changes to Montana's hazardous waste program satisfied all requirements for final authorization and authorized the changes through an Immediate Final Rule. The Immediate Final Rule was to be effective on August 7, 2000 unless significant written comments opposing the authorization were received during the comment period. At the same time, in the event we received written comments, we also published a Proposed Rule at 65 FR 26802 to authorize these same changes to the Montana hazardous waste program.

As a result of comments received on the Immediate Final Rule, we withdrew the Immediate Final Rule on August 8, 2000 at 65 FR 48392 and went forward with the Proposed Rule. By this action, we are issuing a Final Rule authorizing the changes to the Montana hazardous waste program as listed in the Immediate Final Rule at 65 FR 26750 and responding below to each of the comments received.

DATES: This authorization will be effective on December 26, 2000.

ADDRESSES: You can view and copy Montana's application at the following addresses: Air and Waste Management Bureau, Montana Department of Environmental Quality, Metcalf Building, 1520 East Sixth Avenue, Helena, MT 59620 , Phone (406) 444–1430; and U.S. EPA Region VIII, Montana Office, 301 South Park Avenue, Federal Building, Helena, MT 59626, phone (406) 441–1130 ext 239.

FOR FURTHER INFORMATION CONTACT: Kris Shurr, EPA Region VIII, 999 18th Street, Suite 300, Denver, CO 80202–2466, Phone (303) 312–6139; or Eric Finke, Waste and Toxics Team Leader, 301 South Park Avenue, U.S. EPA Montana Office, 301 South Park Avenue, Federal Building, Helena, MT 59626, Phone (406) 441–1130 ext 239.

SUPPLEMENTARY INFORMATION: The reader should also refer to the Proposed Rule at 65 FR 26802 and the Immediate Final Rule at 65 FR 26750, both published on May 9, 2000.

We received written comments from four parties during the comment period, two of which opposed the authorization. One comment expressed concern that Montana has more programs than the State can afford and it appeared that EPA wants to put more people out of business. Two comments expressed concern that this authorization would make Montana's rules more stringent than the Federal rules. One of these commenters later withdrew this comment but noted that StATS (EPA's database containing the status of Federal rule adoptions for each State) showed that Montana had not yet adopted EPA's less stringent Land Disposal Restrictions (LDR) rules and that it was odd and confusing that EPA plans to authorize Montana for some rules that are no longer effective. Another comment expressed concern that Montana has not been able to retain sufficient trained

waste, or require you to meet additional conditions to claim a conditional exemption, for serious or repeated noncompliance with any requirement(s) of subpart N of this part.

§ 266.360 If you lose the transportation and disposal conditional exemption for a waste, can the exemption be reclaimed?

(a) You may reclaim the transportation and disposal exemption for a waste after you have received a return receipt confirming that we have received your notification of the loss of the exemption specified in § 266.355(a) and if:

(1) You again meet the conditions specified in § 266.315 for the waste; and

(2) You send a notice, by certified delivery, to us that you are reclaiming the exemption for the waste. Your notice must be signed by your authorized representative certifying that the information provided is true, accurate, and complete. The notice must:

(i) Explain the circumstances of each failure.

(ii) Certify that each failure that caused you to lose the exemption for the waste has been corrected and that you again meet all conditions for the waste as of the date you specify.

(iii) Describe plans you have implemented, listing the specific steps that you have taken, to ensure that conditions will be met in the future.

(iv) Include any other information you want us to consider when we review your notice reclaiming the exemption.

(b) We may terminate a reclaimed conditional exemption if we find that your claim is inappropriate based on factors including, but not limited to: you have failed to correct the problem; you explained the circumstances of the failure unsatisfactorily; or you failed to implement a plan with steps to prevent another failure to meet the conditions of § 266.315. In reviewing a reclaimed conditional exemption under this section, we may add conditions to the exemption to ensure that transportation and disposal activities will protect human health and the environment.

[FR Doc. 01–11408 Filed 5–15–01; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 261 and 268

[FRL–6975–2]

RIN 2050–AE07

Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-From Rules

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Today's action finalizes the retention of the mixture rule and the derived-from rule in the Resource Conservation and Recovery Act (RCRA), with two revisions. The mixture and derived-from rules ensure that hazardous wastes that are mixed with other wastes or that result from the treatment, storage or disposal of hazardous wastes do not escape regulation and thereby cause harm to human health and the environment.

EPA is finalizing two revisions to the mixture and derived-from rules. These revisions would narrow the scope of the mixture and derived-from rules, tailoring the rules to more specifically match the risks posed by particular wastes. The first revision is an expanded exclusion for mixtures and/or derivatives of wastes listed solely for the ignitability, corrosivity, and/or reactivity characteristics. The second revision is a new conditional exemption from the mixture and derived-from rules for ''mixed wastes'' (that is, wastes that are both hazardous and radioactive).

DATES: These final regulations are effective on August 14, 2001.

ADDRESSES: Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The Docket Identification Number is F–2001–WHWF–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling 703 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. The index and some supporting materials are available electronically. See the ''Supplementary Information'' section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Hotline at 800 424–9346 or TDD 800 553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call 703 412–9810 or TDD 703 412–3323.

For more detailed information on specific aspects of this rulemaking, contact Tracy Atagi, Office of Solid Waste 5304W, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460–0002, 703–308–8672, *atagi.tracy@epa.gov*.

SUPPLEMENTARY INFORMATION: The index and many of the supporting materials are available on the Internet. You can find these materials at <http://www.epa.gov/epaoswer/hazwaste/id/hwirwste/index.htm>.

Affected Entities

Entities potentially affected by this action are generators of industrial hazardous waste, and entities that treat, store, transport and/or dispose of these wastes. This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action.

SIC code	NAICS code	List of potentially affected US Industrial Entities
Revision to 40 CFR 261.3 Definition of hazardous waste		
2800	32xxxx	Chemicals & allied products manufacturing.
2819	Five possible codes	Industrial inorganic chemicals manufacturing.
2821	325211	Plastics materials & resins manufacturing.
2833	325411	Medicinal chemicals & botanicals manufacturing.
2834	325412	Pharmaceutical preparations manufacturing.
2851	32551	Paints & allied manufacturing.
2869	Five possible codes	Industrial organic chemicals manufacturing.
2879	32532	Pesticides & agricultural chemicals manufacturing.
3089	Four possible codes	Plastics products manufacturing.
3241	32731	Hydraulic cement products manufacturing.
3479	Four possible codes	Fabricated metal coating & allied services
3711	Five possible codes	Motor vehicle & passenger car bodies manufacturing.
4212	562111 & 562112	Local trucking services (industrial waste shipment).
4953	Five possible codes	Refuse (industrial waste) treatment/disposal services.

SIC code	NAICS code	List of potentially affected US Industrial Entities
7389	36 possible codes	Business services.
7532	811121	Auto repair & auto paint shops.
9511	92411	Waste management.
9711	811121	National security (military bases).

Explanatory Notes:
(1) SIC= 1987 Standard Industrial Classification system (US Department of Commerce's traditional code system last updated in 1987).
(2) NAICS= 1997 North American Industrial Classification System (US Department of Commerce's new code system as of 1997).
(3) Refer to the Internet website *http://www.census.gov/epcd/www/naicsdev.htm* for additional information and a cross-walk table for the SIC and NAICS codes systems.

This table lists those entities that EPA believes could be affected by this action, based on industrial sectors identified in the economic analysis in support of this final rule. A total of about 120 entities are expected to benefit from the proposed revisions to 40 CFR 261.3 in the 17 industrial sectors listed above, but primarily in the chemicals and allied products sector (i.e., SIC code 28, or NAICS code 325). Other entities not listed in the table also could be affected. To determine whether your facility is regulated by this action, you should examine 40 CFR parts 260, 261 and 268 carefully in concert with the amended rules found at the end of this **Federal Register** document. If you have questions regarding the applicability of this action to a particular entity, consult the persons listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

ACRONYMS

Acronym	Definition
3MRA	Multimedia, Multipathway and Multireceptor Risk Assessment
APA	Administrative Procedures Act
BDAT	Best Demonstrated Available Technology
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CMA	Chemical Manufacturers Association
CWA	Clean Water Act
DOT	Department of Transportation
EPA	Environmental Protection Agency
HSWA	Hazardous and Solid Waste Amendments of 1984
HWIR	Hazardous Waste Identification Rule
ICR	Information Collection Request
IRIS	Integrated Risk Information System
LDR	Land Disposal Restriction
LLMW	Low Level Mixed Wastes
LLRWDF	Low Level Radioactive Waste Disposal Facility
MACT	Maximum Achievable Control Technology
NPDES	National Pollution Discharge Elimination System
NRC	Nuclear Regulatory Commission (NRC)
NTTAA	National Technology Transfer and Advancement Act
OMB	Office of Management and Budget
ORD	Office of Research and Development
OIRM	Office of Information and Resources Management
OSW	Office of Solid Waste
OSWER	Office of Solid Waste and Emergency Response
PBMS	Performance Based Measurement System
QA/QC	Quality Assurance / Quality Control
RCRA	Resource Conservation Recovery Act
RFA	Regulatory Flexibility Act
RfD	Reference Dose
RfC	Reference Concentration
RIC	RCRA Docket Information Center
SBREFA	Small Business Regulatory Enforcement Fairness Act
TC	Toxicity Characteristic
TCLP	Toxicity Characteristic Leaching Procedure
TDD	Telecommunications Device for the Deaf
TSDF	Treatment, Storage, and Disposal Facility
UMRA	Unfunded Mandates Reform Act
UTS	Universal Treatment Standards

Outline

Background

I. What Law Authorizes These Rules?

These rules are promulgated under the authority of Sections 2002(a), 3001, 3002, 3004, and 3006 of the Solid Waste Disposal Act of 1970, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. 6912(a), 6921, 6922, 6924, 6926.

II. Which Hazardous Waste Identification Rules Is EPA Finalizing Today?

Today, EPA is finalizing retention and revision of the mixture and derived-from rules, previously set forth in 40 CFR 261.3(a)(2)(iii), 261.3(a)(2)(iv) and 261.3(c)(2)(i), and proposed at 64 FR 63382 (November 19, 1999). The mixture and derived-from rules are a part of the RCRA rules that define which wastes are considered to be hazardous and therefore subject to RCRA Subtitle C rules. The mixture and derived-from rules identify as hazardous those wastes that originate from RCRA hazardous waste listed under 40 CFR part 261 (referred to as ''listed hazardous wastes''). Under the mixture rule, a mixture of a solid waste with one or more listed hazardous wastes is a hazardous waste. Under the derived-from rule, any solid waste generated from the treatment, storage, or disposal of a listed hazardous waste remains regulated as a hazardous waste. These derived-from wastes include wastes such as sludges, spill residues, ash, emission control dust, and leachate generated from listed hazardous wastes.

The mixture and derived-from rules that are being finalized today include two revisions to these rules. For the first revision, we have narrowed the applicability of the derived-from rules by excluding derivatives of wastes listed solely for the characteristics of ignitability, reactivity, and/or corrosivity when they no longer exhibit any characteristic of hazardous waste. Mixtures of wastes listed solely for the characteristic of ignitability, reactivity, and/or corrosivity which no longer exhibit any characteristic of hazardous waste continue to be excluded under today's rules. In summary, under today's final rules, all wastes listed solely for an ignitability, reactivity and/or corrosivity characteristic (including mixtures, derived-from and as generated wastes) are excluded once they no longer exhibit a characteristic.

For the second revision, we are also finalizing a conditional exemption for certain low-level mixed waste (i.e., waste that is both radioactive and hazardous) from the mixture and derived-from rules, provided the mixed waste is handled in accordance with 40 CFR part 266, Subpart N. This Subpart, which is being published as a final rule elsewhere in today's **Federal Register**, explains the eligibility requirements for this exemption, and includes several conditions and requirements for the exempted waste.

III. What Is the Legal History of These Rules?

EPA promulgated the mixture and derived-from rules in 1980 as part of the comprehensive ''cradle to grave'' requirements for managing hazardous waste. 45 FR 33066 (May 19, 1980). Numerous industries that generate hazardous wastes challenged the 1980 mixture and derived-from rules. In December 1991, the D.C. Circuit Court of Appeals vacated the rules because they had been promulgated without adequate notice and opportunity to comment. *Shell Oil Co.* v. *EPA,* 950 F. 2d 741 (D.C. Cir. 1991). The court, however, suggested that EPA might want to consider reinstating the rules pending full notice and comment in order to ensure continued protection of human health and the environment.

In response to this decision, we promulgated an emergency rule reinstating the mixture and derived-from rules as interim final rules without providing notice and opportunity to comment. 57 FR 7628 (March 3, 1992). We also promulgated a ''sunset provision'' which provided that the mixture and derived-from rules would remain in effect only until April 28, 1993. Shortly after, we published a proposal containing several options for revising the mixture and derived-from rules. See 57 FR 21450 (May 20, 1992). The May 1992 proposal and the time pressure created by the ''sunset provision'' generated significant controversy. In response, Congress included in EPA's fiscal year (FY) 1993 appropriation several provisions addressing the mixture and derived-from rules. Public Law No. 102–389, 106 Stat. 1571. First, Congress nullified the sunset provision by providing that EPA could not promulgate any revisions to the rules before October 1, 1993, and by providing that the reinstated regulations could not be ''terminated or withdrawn'' until revisions took effect. However, to ensure that we could not postpone the issue of revisions indefinitely, Congress also established a deadline of October 1, 1994 for the promulgation of revisions to the mixture and derived-from rules. Congress made this deadline enforceable under RCRA's citizen suit provision, section 7002.

On October 30, 1992, we published two notices, one removing the sunset provision, and the other withdrawing the May 1992 proposal. (See 57 FR 49278, 49280). We had received many comments criticizing the May 1992 proposal. The criticisms were due, in a large part, to the very short schedule imposed on the regulation development process itself. Commenters also feared that the proposal would result in a ''patchwork'' of differing State programs because some states might not adopt the revisions. This fear was based on the belief that States would react in a negative manner to the proposal and refuse to incorporate it into their programs if finalized. Finally, many commenters also argued that the risk assessment used to support the proposed exemption levels failed to provide adequate protection of human health and the environment because it evaluated only the risks of human consumption of contaminated groundwater and ignored other pathways that could pose greater risks. Based on these concerns, and based on EPA's desire to work through the individual elements of the proposal more carefully, we withdrew the proposal.

Subsequently, a group of waste generating industries challenged the March 1992 action that reinstated the mixture and derived-from rules without change. *Mobil Oil Corp.* v. *EPA,* 35 F.3d 579 (D.C. Cir. 1994). The court rejected this challenge, holding that the fiscal year (FY) 1993 appropriations act made the challenge moot because it prevented both us and the courts from terminating or withdrawing the interim rules before we revised them, even if we failed to meet the statutory deadline for the revisions.

We did not meet Congress' October 1, 1994 deadline for revising the mixture and derived-from rules. In early October 1994, several groups of waste generating and waste managing industries filed citizen suits to enforce the October 1 deadline for revising the mixture and derived-from rules. Two of the cases were consolidated and a third was dismissed with the plaintiffs being added as intervenor to the consolidated cases. *Environmental Technology Council* v. *Browner,* C.A. No. 94–2119, 94–2436 (TFH) (D.D.C.). The U.S. District Court for the District of Columbia entered a consent decree resolving the consolidated cases. The consent decree, as subsequently amended, required the Administrator to sign a proposal to revise the mixture and derived-from rules by November 13, 1995 and a notice of final action on the proposal by February 13, 1997, and it also specified that the deadlines in the 1992 appropriations act do not apply to any rule revising the separate regulations that establish jurisdiction over media contaminated with hazardous wastes. On November 13, 1995, the Administrator signed the proposed Hazardous Waste Identification Rule to revise the mixture and derived-from rules, which was published in the **Federal Register** on December 21, 1995. (60 FR 66344). It proposed a set of exemption levels for hundreds of hazardous constituents, many of which were based on a complex multipathway risk assessment. The notice also proposed to revise the derived-from rule to exclude wastes listed because they exhibited the characteristics of ignitability, corrosivity and/or reactivity from the definition of hazardous waste, and solicited comment on the concept of providing a separate exemption for hazardous wastes mixed with low level radioactive wastes.

We received extensive comments, many critical, on the 1995 proposal, particularly with respect to the scientific risk assessment supporting the proposed concentration-based exemption from the mixture and derived-from rules. As a result of the comments, we concluded that considerable work needed to be done to resolve the complex scientific and technical issues raised. On April 11, 1997, the District Court entered an order amending the consent decree in *Environmental Technology Council* v. *Browner.* The amended decree provided us with additional time to perform further scientific risk assessment work and required us to ask for comment on specific issues. On November 19, 1999, we published a proposal requesting comment on revisions to the mixture and derived-from rules, and discussed and requested comment on the issues specified in the consent decree. Today's final rulemaking completes our legal obligation regarding revisions to the mixture and derived-from rules.

IV. How Do the Final Rules Compare to Those Proposed on November 19, 1999?

As we proposed, we are retaining both the mixture and derived-from rules, and the revisions to those rules that we are finalizing today are for the most part the same as those we proposed in November 1999. Our rationale and basis for today's final rulemaking is set forth in Sections VII, VIII, and IX of this preamble.

The first revision amends the regulations under 40 CFR 261.3 for wastes listed in 40 CFR part 261, subpart D solely because they exhibit a characteristic of hazardous waste. Under current regulations, such listed wastes as generated or treated are considered hazardous under RCRA Subtitle C, even when the waste does not exhibit a characteristic, unless they are delisted. However, mixtures are considered non-hazardous if the waste no longer exhibits any characteristic.

In the November 19, 1999 notice, we proposed to amend the scope of and expand the applicability of the current exclusion. The notice proposed a clarifying change to the scope of the exclusion to include those wastes listed in part 261, subpart D only for a characteristic of ignitability corrosivity, or reactivity. The notice also proposed to expand the applicability of the exclusion so all these materials would be excluded from hazardous waste regulation if they are decharacterized and meet the appropriate treatment standards. The notice stated that most of the currently regulated waste eligible for this exclusion is listed as F003, but would also include certain K-, P- and U-listed wastes (See 64 FR 63390–63391, November 19, 1999).

The exclusion applies when a generator determines that the waste, whether as generated or after treatment, does not exhibit any characteristic. This exclusion is self implementing, with no additional recordkeeping and reporting requirements.[1] EPA is finalizing this exclusion as it was proposed. With respect to the applicability of land disposal restrictions (LDR) in Part 268, EPA is clarifying that when a waste has been listed solely because it exhibits a characteristic of ignitability, corrosivity, and/or reactivity AND that waste does not exhibit any hazardous waste characteristic *at the point of generation,* then that waste is not subject to the LDR requirements. Wastes that are characteristic at the point of generation and then are subsequently decharacterized are still subject to LDR requirements. For information on the major public comments and EPA's responses and rationale for this exclusion, please see Section VIII of this preamble. For discussion of the LDR issue in particular, please see Section VIII.D.

The second revision to the mixture and derived-from rules involves mixed waste (i.e., wastes that are both hazardous and radioactive). Under this revision, mixed waste is conditionally exempt from the mixture and derived-from rules, provided the mixed waste is

[1] However, under 40 CFR 268.7(a)(7)(a) generator must still put a one-time notification in the facility files describing the waste generation, regulatory exclusion, and disposition of the waste(s). According to 40 CFR 268.7(a)(8), this notification must be kept for at least three years.

handled in accordance with 40 CFR part 266, Subpart N.

The regulatory language in 40 CFR part 266, Subpart N, which we are promulgating in a separate final rule published elsewhere today, conditionally exempts hazardous waste mixed with low-level radioactive wastes (low-level mixed wastes/LLMW) from the storage, treatment in tank, transportation, and disposal requirements of RCRA. In addition, hazardous waste mixed with Naturally Occurring and/or Accelerator-produced Radioactive Material (NARM mixed waste) can be exempted from transportation and disposal requirements. The Nuclear Regulatory Commission (NRC) or its Agreement State licensed LLMW generators can store, or treat LLMW in storage tanks without RCRA Subtitle C permits if all exemption conditions are met. Treated LLMW or NARM mixed waste could be disposed at a low level radioactive waste disposal facility (LLRWDF) regulated by the NRC or its Agreement State if all exemption conditions are met. The rationale for conditionally exempting LLMW from the mixture and derived-from rules is the same as that for creating the conditional exemption from the RCRA regulatory definition of hazardous waste for LLMW.

We are largely finalizing the mixed waste exemption from the mixture and derived-from rules as proposed. However, to address public comments on the need for more clarity of this exemption, we have revised the regulatory language and have moved it to its own subsection (40 CFR 261.3(h)). As used in section 261.3(h), the term ''eligible radioactive mixed waste'' refers to hazardous waste containing radioactive waste that meets the eligibility criteria and conditions of part 266, subpart N. In addition, we have made some changes to the new Subpart N from what we proposed. Those changes are explained in the mixed waste final rule, published elsewhere in the **Federal Register** today. For information on the public comment regarding the exemption, and EPA's responses please see Section IX of this preamble.

V. When Will the Final Rules Become Effective?

Today's rules become effective August 14, 2001. Pursuant to section 3010(b)(1) of RCRA, the Administrator finds that the regulated community does not need six months to come into compliance with today's rulemaking, because today's action retains rules already in effect, and expands an exclusion that reduces regulatory burden.

VI. What Other Changes to the Hazardous Waste Identification Rules Is EPA Continuing To Pursue?

EPA continues to pursue an exemption from hazardous waste management that we discussed in the November 19, 1999 HWIR **Federal Register** notice (64 FR 63382). That exemption, also known as the Hazardous Waste Identification Rule (HWIR) exemption, would exempt listed hazardous wastes that meet chemical-specific exemption levels [2] from the definition of hazardous waste. The HWIR exemption would help address concerns that the mixture and derived-from rules result in over-regulation, since listed hazardous waste remains under Subtitle C jurisdiction regardless of constituent concentration or presence in the waste, either before or after treatment. This concern was exacerbated with the passage of HSWA in 1984. HSWA set Land Disposal Restrictions (LDR) requiring best demonstrated available technology (BDAT) treatment for all listed hazardous wastes prior to disposal. In cases where a specific listed wastestream contained relatively innocuous constituents, or very low concentrations, BDAT treatment requirements were felt to be overly protective, and unnecessarily expensive. The Agency believes that an HWIR exemption process would help reduce the potential over-regulation of low risk hazardous waste while, at the same time, reducing the time and resource burden on industry and government. An exemption process would also reduce the burden on the ongoing delisting program. In the 1995 HWIR proposal, we estimated cost savings ranging from $75 million to $99 million, based on exemption levels proposed at that time. Given that the modeling for exemption levels is undergoing major revision, it is not possible at this time to estimate the cost savings from a future constituent-based exemption.

We plan to develop the HWIR exemption levels based on results from the Multi-media, Multi-pathway and Multi-receptor risk assessment (3MRA) Model. The model evaluates simultaneous chemical exposures across several environmental media and multiple exposure pathways to human and ecological receptors in order to estimate the health and ecological effects in the vicinity of waste disposal units that may receive exempt listed hazardous waste. We presented the underlying methodology and assumptions for the 3MRA Model in the **Federal Register** (64 FR 63382, November 19, 1999). However, because of technical difficulties arising from the complexity of the modeling effort, we were unable to propose exemption levels in that notice. Since then, we have made numerous revisions to correct and improve the model.

On July 18, 2000, EPA made available in a Notice of Data Availability (NODA) the model results for 36 chemicals, using an updated version of the model (65 FR 44491). The NODA, and referenced background information placed in the docket, explained technical changes made to the model since the November 19, 1999 **Federal Register** notice. Finally, the NODA extended the comment period for the November 19, 1999 HWIR exemption discussion until October 16, 2000.

We are currently reviewing the public comments and will decide if further revisions to the HWIR risk assessment (3MRA) model are necessary. We also are continuing independent testing and external peer review of the HWIR risk assessment model.

In addition to the HWIR risk assessment, the November 19, 1999 **Federal Register** notice discussed options for implementing the HWIR exemption. We also plan to review the comments relating to implementation. Before using the revised risk assessment to support a final rulemaking on the HWIR exemption, we will publish a proposal to allow public comment on a unified package.

In another effort to better calibrate risk and regulatory standards, the Agency is also developing two targeted exemptions from the hazardous waste mixture and derived-from rules: one for certain solvents destined for wastewater treatment and discharge under the Clean Water Act, and another for slagged combustion residues from hazardous waste combustors. Other targeted exemptions are being assessed for later development (see Section X of this preamble for further discussion). We also plan to continue on-going efforts to streamline the existing delisting process.

Major Comments

VII. What Were the Major Comments on Retaining the Mixture and Derived-From Rules, and How Has EPA Responded to Them?

EPA received several dozen comments on the issue of retaining the mixture and derived-rules for both the 1995 and 1999 HWIR proposals. Below is a summary of three major issue areas

[2] An ''exemption level'' in this context is a specific chemical concentration. If all chemicals in a waste are below their exemption levels, then the waste would be considered non-hazardous.

raised in the comments, and EPA's responses. For more detailed comment responses, please see *Hazardous Waste Identification Rule: Revisions to the Mixture and Derived-From Rules Response to Comments Document.*

A. Need for the Mixture and Derived-From Rules

(1)(a) Summary of the Comments on the Need for the Mixture and Derived-From Rules

EPA received comments from 38 commenters in response to both the 1995 and the 1999 HWIR proposals specifically concerning the necessity of the mixture and derived-from rules. Of those comments, 14 were received from industry, seven were from industry associations, eight were from State Agencies, five were from waste management companies, two were from waste management associations, one was from a Federal Agency and one was from a consultant.

The States and waste management associations supported the retention of the mixture and derived-from rules, while the industry commenters generally believed that the mixture and derived-from rules were unnecessary. A summary of the specific issues raised by commenters is provided below.

Twelve commenters explicitly supported the retention of the mixture and derived-from rules. Many of the State commenters said that the rules were necessary to capture mixtures and derivatives of listed hazardous wastes in the universe of regulated hazardous wastes in order to protect human health and the environment. The commenters noted that without these rules, it would be possible to alter a particular waste to the point that it no longer meets the listing description without detoxifying, immobilizing, or otherwise actually treating the waste. One industry association commenter also supported the retention of the mixture and derived-from rules, noting that although it is not a perfect solution, the approach has been used for the last 15 years in a generally effective manner.

One waste management association commenter also strongly supported the retention of the mixture and derived-from rules. The commenter believed the mixture and derived-from rules were necessary because they prevented many wastes that clearly were hazardous and that posed substantial threats to human health and the environment from escaping RCRA controls only because they are mixtures or derivatives that no longer fit an original listing description. The commenter noted that generators send their listed hazardous wastes to treatment facilities for initial treatment to reduce the toxicity and/or mobility of some, but not all, toxic constituents in the waste. The commenter also agreed that EPA's experience with delisting petitions further supported the rationale for the mixture and derived-from rules.

Twenty-six commenters did not support the retention of the mixture and derived-from rules. Some asserted that eliminating the derived-from rule would be a common sense reform of RCRA to reduce unnecessary over-regulation of many wastes. Many industry commenters and industry associations commented that the mixture and derived-from rules unnecessarily continue to regulate low-risk material resulting in significant waste management costs with no associated environmental benefit, thus also affecting the credibility of EPA. Several of the comments cited EPA's 1992 HWIR proposal, saying that ''millions of tons of mixtures and derived-from residuals that must be managed as hazardous waste * * * may actually pose quite low hazards.'' (57 FR 21451, May 20, 1992). The Department of Defense acknowledged the need to retain the mixture and derived-from rules; however, the commenter noted that the mixture and derived-from rules have been a source of over-regulation for low-risk wastes.

Several commenters asserted that the mixture and derived-from rules have no continued viability, particularly in light of the technological advances that have developed since the rules were first promulgated in 1980. They noted that since 1980, the regulated community has made considerable improvements in the treatment, storage, and disposal of hazardous waste. In their view, the result is that the risks that formerly may have been associated with the management of hazardous waste have been reduced significantly or eliminated, such that the universe of waste that may have warranted Subtitle C regulation in 1980 has been reduced significantly. Six commenters agreed with the U.S. Court of Appeals observation in *Shell Oil Co.* v. *EPA,* 590 F.2d 741, 752 (D.C. Cir. 1991) that, ''the derived-from rule becomes counterintuitive as applied to processes designed to render wastes nonhazardous. Rather than presuming that these processes will achieve their goals, the derived-from rule assumes their failure.'' Commenters also noted that the hazardous waste characteristics, particularly the Toxicity Characteristic, would continue to ensure proper management of high risk wastes under RCRA.

Several commenters stated that when compared to established standards, a waste material is either hazardous or it is not and it is not necessary to consider the origin of the material. The consultant noted that the mixture rule is completely unnecessary and isn't scientifically appropriate because if the compound or element in the waste needs to be controlled in a certain environment, it doesn't matter what the source is. Therefore, a regulation should set the limit for that environment for that compound or element and the mixture and derived-from rules should be eliminated. One commenter believed that the continued inflexible application of the mixture and derived-from rules has served only to bring to light the self-defeating complexity of the program.

(1)(b) EPA Response To Comments on the Need for the Mixture and Derived-From Rules

EPA acknowledges that the mixture and derived-from rules apply regardless of the concentrations and mobilities of hazardous constituents in the waste. We have implemented and will continue to pursue actions to reduce any overregulation of low-risk wastes arising from the mixture and derived-from rules. Nevertheless, EPA believes that retention of the mixture and derived-from rules are necessary to ensure protection of human health and the environment. When EPA determines that a waste should be listed as hazardous, we consider several different factors, including the toxicity of the chemicals in the waste, the persistence of those toxic chemicals, and the degree to which the chemicals bioaccumulate in the environment. As discussed below, the act of mixing a hazardous waste with another waste, or storing, treating, and disposing of that waste does not necessarily remove the hazard posed by these toxic chemicals. Under RCRA, EPA has an obligation to ensure that the risk posed by a hazardous waste is controlled from the cradle to the grave. Both the mixture and derived-from rules are needed to make sure that this obligation is carried out.

Concerns About Deliberate Evasion

When EPA originally promulgated the mixture and derived-from rules in 1980, one of our main concerns was that, without these rules, generators could deliberately evade regulation by taking advantage of a ''loophole'' in the hazardous waste identification process. (45 FR 33084, 33095 (May 19, 1980)). Specifically, we believed that without the mixture and derived-from rules, generators could potentially alter their waste so that it no longer meets the

listing description without detoxifying, immobilizing, or otherwise effectively treating the waste.

Despite the progress that has been made in environmental compliance in the past twenty years, this concern remains, and the comments of EPA's co-regulators, the State governments, echo this continuing concern. EPA agrees with those industry comments that claim many companies are more environmentally aware and responsible than they were in the past. However, there will always be some entities who might try and exploit gaps in the regulatory system. Absent the mixture and derived-from rules, there would be a potentially significant gap in the coverage of the hazardous waste listings.

For example, without a ''mixture'' rule, generators of hazardous wastes could potentially evade regulatory requirements by mixing listed hazardous wastes with other hazardous wastes or nonhazardous solid wastes to create a ''new'' waste that arguably no longer meets the listing description, but continues to pose a serious hazard. Similarly, without a ''derived-from'' rule, hazardous waste generators and hazardous waste treatment, storage, and disposal facilities (TSDFs) could potentially evade regulation by minimally processing or managing a hazardous waste and claiming that the resulting residue is no longer the listed waste, despite the continued hazards that could be posed by the residue even though it does not exhibit a characteristic. A hazardous waste regulatory system under which it could be argued that hazardous waste could leave the system as soon as it was modified to any degree by being mixed or marginally treated would be ineffective and unworkable. Such a system could act as a disincentive to adequately treat, store and dispose of listed hazardous waste.

In addition, as explained below, even if generators or TSDFs do not deliberately try to evade hazardous waste regulations, certain waste mixtures and derived-from wastes could pose substantial present or potential hazards if mismanaged. We, therefore, continue to believe that the mixture and derived-from rules are necessary to capture wastes that would pose unacceptable risks to human health and the environment.

Regulating Hazardous Waste Mixtures

Mixing hazardous waste with another waste may dilute, and sometimes mask, the concentrations of toxic constituents in the listed waste, but does not necessarily address the hazards posed by these constituents. Some of the comments focused on diluted wastewaters as an example of mixtures that are potentially ''low risk.'' Of the ''millions of tons'' of waste that EPA estimated would be exempted under the 1995 HWIR proposal because they may pose low risks, 99% of the waste by volume is wastewater (60 FR 66415, December 21, 1995). Wastewaters are generally disposed either in an underground injection control well regulated under the Safe Drinking Water Act (SDWA)or to the environment under the Clean Water Act (CWA). Because discharged hazardous wastewaters must meet CWA standards, some commenters believe that these wastewater mixtures should be excluded from hazardous waste regulation prior to their discharge.

We have several concerns with this argument. The management of wastewater mixtures is already largely exempt from most RCRA requirements. The two main requirements that remain under RCRA are that the wastewaters must be managed in tanks, and the treatment sludge must be managed as a hazardous waste once removed from the tank. Continued management of these wastewaters in tanks is usually needed to avoid infiltration to groundwater of concentrations of toxic constituents that pose unacceptable risks. Even when they meet their CWA discharge limits, mismanaged wastes could pose unacceptable risks through the groundwater pathway, which is not addressed by the CWA. Sludges from wastewater treatment need to be managed as hazardous waste, because they can contain the same persistent and toxic chemicals (e.g., heavy metals) that originated in the wastewaters. Each of these points is discussed in more detail below.

RCRA section 1004(27) already excludes industrial wastewater discharges subject to CWA section 402 regulation from the definition of ''solid waste'' under RCRA. See also, 40 CFR 261.4(a)(2). In addition, wastewater treatment units, as defined in 40 CFR 260.10 (i.e., tanks), are excluded from almost all RCRA regulation (see 40 CFR 264.1(g)(6); 265.1(c)(10); and 270.1(c)(2)(v)). RCRA has historically deferred to the Clean Water Act and its oversight in properly regulating hazardous wastewaters discharged by CWA wastewater treatment systems or other point sources subject to CWA discharge requirements, including storage in wastewater treatment units prior to discharge. However, with the exception of sewage sludge, the CWA does not apply to sludges which are a byproduct of wastewater treatment. To the extent treatment of listed hazardous wastewaters generates sludges, those sludges are considered hazardous by the derived-from rule (as discussed below).

Furthermore, to the extent that additional hazards may be associated with wastewaters managed in such systems (including risks via inhalation pathway and risks via groundwater ingestion when treatment takes place in surface impoundments),[3] the Agency considers such wastes as hazardous and within RCRA jurisdiction until discharged. While wastewaters must meet CWA requirements at the point of discharge, they can still have high concentrations of constituents during the management of the waste.

Even after hazardous wastewaters have been treated to meet CWA standards, they could still have the potential to pose unacceptable risks to human health and the environment when managed in surface impoundments or other retention ponds (or otherwise managed on the land, i.e., during a spill) prior to discharge to the receiving water body. Both surface impoundments and retention ponds can have high potential for discharge of the wastewaters they contain to underlying groundwater (*see* RCRA sections 1002(b)(7) and 3005(j)). Discharge treatment requirements based on State water quality standards are calculated by taking the nature of the effluent and the receiving water body into account. An effluent treated to meet water quality standards for a surface water body could leach into groundwater, depending on the hydrogeology of the site, if subsequently held in a surface impoundment or retention pond prior to discharge. This leachate could undergo a lesser degree of dilution in groundwater than in the intended surface water body, potentially posing unacceptable risks to groundwater users through a drinking water well. This risk is not accounted for under the current federal CWA standards.[4] Therefore, EPA continues to believe that retaining

[3] The Revised Air Characteristic Study (EPA 530–R–99–019a) published August 1999 suggests that potential risks emanating from wastewaters managed in wastewater treatment tanks may be of regulatory concern and may represent a regulatory gap because of the existing exclusions for wastewater treatment units from control requirements.

[4] The current federal National Pollution Discharge Elimination System (NPDES) program under the CWA does not require permitting authorities to issue permits for discharges of wastewater to groundwater (See 40 CFR 122.1 and 122.2). The exception is those instances in which a discharge to surface water may occur via a hydrologic connection between a groundwater and surface water. In addition, some states have chosen to exceed federal program requirements and do issue such permits. *See also* U.S. EPA NDPES. Permit Writers' Manual, United States Environmental Protection Agency, Office of Water, December 1996. EPA–833–B–96–003.

jurisdiction over hazardous wastewaters under RCRA prior to their NPDES-permitted discharge is necessary to ensure protection of human health and the environment.

Another reason why these wastewaters should not be categorically designated as non-hazardous prior to discharge is because that would effectively exclude their treatment sludges as well (by avoiding the application of the derived-from rule).[5] As explained below in more detail, treatment sludges from these dilute wastes cannot be assumed to be low risk. In fact, treatment sludges can contain high levels of the very chemicals (e.g., heavy metals) that caused the original waste to be listed. In these cases, the hazard that was identified as the original basis of listing has not been removed; it has merely been transferred to another type of waste matrix (i.e., from a water to a solid).

In sum, EPA has excluded (through the wastewater treatment unit exclusions) hazardous wastewaters from regulation where we believe there is a reasonable basis to do so, grounded in the protection of human health and the environment, and the statute excludes from RCRA jurisdiction industrial wastewater discharges subject to CWA discharge permits. But based on the available data, EPA believes that a blanket wastewater exclusion from regulation is not warranted. Instead, EPA will continue to develop approaches (e.g., targeted exemptions and HWIR exemption levels) to address wastewaters that are be considered low risk.

Regulating Derived-From Wastes

As explained in 40 CFR 261.3(c)(2)(i), any solid waste derived from the treatment, storage, or disposal of a hazardous waste is also considered a hazardous waste. Specific examples of these derived-from wastes include sludges, spill residues, ash, emission control dust, and leachate. For derived-from wastes that change location but are otherwise unmodified, the question of their continued regulation is more straightforward. Because such waste would have the same levels of toxic constituents and presumably the same potential exposure patterns as the waste that was evaluated for the original hazardous listing determination, it would pose the same unacceptable risk as the original waste.

Other types of derived-from wastes may have a different physical form than the original waste, but still present the same chemical hazard. Leachate derived from the disposal of hazardous waste, for example, can contain the same chemicals as found in the original waste. When EPA analyzed leachate for purposes of promulgating effluent guidelines for landfill leachate (65 FR 3007, January 19, 2000), we found that wastewater generated as a result of a particular industrial operation can have a similar pollutant profile to leachate generated by a landfill receiving the bulk of their waste from that same operation (65 FR 3008, 3012, January 19, 2000). During treatment, chemicals in hazardous wastewater are transferred to the sludge, which is disposed of in the captive landfill. Once the sludge is disposed in a landfill, persistent chemicals in this sludge can then transfer to the leachate, which, when managed in a wastewater treatment unit, transfers them once more to sludge. Although changed in form, the treatment sludge (and leachate) could still pose similar unacceptable risks as the originally listed waste, depending on actual concentrations and exposure patterns.

We also found considerable differences between the leachate samples from hazardous and those from non-hazardous waste landfills in both numbers of constituents of concern and their concentrations. Hazardous waste landfill leachate contained a greater number of constituents than non-hazardous waste landfill leachate, and constituents found in both hazardous and non-hazardous waste landfill leachate were generally present in hazardous waste landfill leachate at concentrations an order of magnitude higher than those found in non-hazardous waste landfill leachate.[6] Absent a risk assessment, it is not possible to determine whether the levels of these constituents pose unacceptable risk. However, the presence of such constituents creates a continuing concern regarding leachate derived from hazardous waste.

The other broad category of derived-from waste are treatment residues. At least six commenters cited the D.C. Circuit Court of Appeals observation in *Shell Oil Co.* v. *EPA,* 590 F.2d at 752 that ''the derived-from rule becomes counterintuitive as applied to processes designed to render wastes nonhazardous.'' However, the presumption that treatment always renders hazardous waste nonhazardous is overly simplistic. This presumption does not take into account all products of treatment. Even treatment that operates properly is often designed to isolate a hazardous residual. For example, wastewater treatment designed to produce a sufficiently clean effluent for discharge is also designed to move the hazardous constituents from the wastewater into the sludge. The resulting de-watered sludge, while much lower in volume than the original hazardous wastewater, has the potential to have much greater concentrations of hazardous chemicals. As explained above, once the sludge is disposed in a landfill, persistent chemicals in this sludge can then transfer to the leachate, which, when managed in a wastewater treatment unit, transfers them once more to sludge.

The derived-from rule thus ensures that the chemicals in the originally listed waste that are transferred to another matrix when the waste is managed remain under RCRA Subtitle C control. Without the derived-from rule, a hazardous wastewater could be treated so that hazardous constituents are moved to the sludge. If the generator could claim that the resulting sludge, regardless of chemical concentration, no longer meets the listing description, then that sludge could be handled as non-hazardous waste, and placed in an unlined industrial landfill, or sent to a land application unit.[7] The resulting leachate would not necessarily be collected. Instead, those chemicals that first caused the waste to be listed could potentially now enter the environment and, depending on the actual chemical concentrations and exposure patterns, could pose unacceptable risks.

Other types of treatment, which result in combining wastes with different chemical concentrations, can result in dilution of those chemicals, but may not adequately address the hazard they could pose. As mentioned earlier in the discussion on regulating mixtures, combining wastewaters for centralized treatment is often a legitimate treatment practice, but the diluting effect of such treatment does not address the transfer of persistent chemicals to the sludge.

Finally, treatment that reduces the amount of organic chemicals in a waste does not typically address the risk from

[5] These wastes would still be subject to the hazardous waste characteristics of 40 CFR Part 261, Subpart C, but, as explained later in this preamble section, such coverage would not address all the unacceptable risks potentially posed by the chemicals in these wastes.

[6] Development Document for Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category, EPA–821–R–99–019, U.S. EPA, January 2000.

[7] These wastes would still be subject to the hazardous waste characteristics of 40 CFR Part 261, Subpart C, but, as explained later in this preamble section, such coverage would not address all the unacceptable risks potentially posed by the chemicals in these wastes.

metals in the waste. For example, biological treatment and incineration, which are among the most aggressive forms of treatment, are designed to reduce or destroy organic chemicals. However, these types of treatment do not address heavy metals and may form chemical by-products (e.g., dioxins) that could pose unacceptable risks, if not managed properly. For example, baghouses on combustion devices serve to collect hazardous constituents that would otherwise be emitted to the air from the combustion process, and the dust that is removed from the baghouses predictably contains metals that were in the original waste. In response to industry comments, EPA will explore specific approaches for dealing with biological treatment residues and has already begun considering an alternative approach to address combustion residues (See Sections X.C. and X.D. of this preamble.) EPA will also continue to develop approaches (e.g., targeted exemptions and HWIR exemption levels) to exempt other waste streams that are currently captured by the derived-from rules but pose low risks.

Historic Information on Mixture and Derived-From Wastes

As we discussed in the 1999 proposal, EPA's experience with the delisting program further supports retaining the mixture and derived-from rules as a necessary part of hazardous waste identification. Generators can petition EPA under 40 CFR 260.22 to exclude a waste produced at a particular facility from the definition of hazardous waste. Such petitions must demonstrate that the waste does not meet any of the criteria for which it was listed nor has other attributes that might result in the waste being hazardous.

Over the 20-year period from 1980 through 1999, EPA reviewed over 900 petitions to delist wastes, and granted delistings to 136 waste streams generated at 115 separate facilities. Most of the petitions (i.e., more than 600) were withdrawn or mooted before the review was complete; 108 were denied. Most of these denials were based on lack of information. In at least 13 of the 36 cases where enough information is available in the source documentation to determine whether a waste was a mixture or derivative, we denied delisting petitions for mixtures or residuals of listed waste because risk analyses indicated that the toxicity and leaching potential of hazardous chemicals in those wastes posed unacceptable risk to human health. These mixture and derived-from wastes had potentially hazardous levels of a wide range of chemicals including barium, cadmium, chromium, lead, mercury, nickel, benzene, benzo(a)pyrene, cyanide, chloroform, 1,1-dichloroethane, 1,1-dichloroethylene, 2,4-dinitrotoluene, methylene chloride, trichloroethylene, and vinyl chloride.[8]

We have also identified possible damage cases associated with mixture and derived-from wastes. For example, there are Superfund sites that contain mixture and derived-from wastes (See 50 FR 658). We have identified at least twenty sites that may have involved the mismanagement of mixture and derived-from wastes.[9] The sites identified include cases of extensive contamination of soils and groundwater with metals (e.g., arsenic, lead, mercury), cyanide, and organics (e.g., benzene, toluene, and xylenes). It is very difficult to identify the full range of damage cases that specifically involve waste mixtures or derivatives since neither EPA nor other parties track or categorize waste based on its status under the mixture or derived from rules.

The legislative history of RCRA also provides examples of damage cases caused from disposal of mixture and derived-from hazardous wastes. In introducing the purpose of Subtitle C, the House Committee on Interstate and Foreign Commerce cited seven pages of damage cases, stating, ''The most effective way of illustrating the dangers of improper hazardous waste disposal is perhaps to cite actual instances of damage caused by current hazardous waste disposal practices. The following section is merely illustrative of the problem. Far more cases could be cited, even more have gone unreported.'' H.R. Rep. No. 94–1491 (94th Cong. 2d Sess. 1976) 17–23. Of the 59 instances described in the House Committee Report, at least 40 involved spills, leachate or runoff from landfills, lagoons or waste storage facilities. Leachate and run-off are derived-from wastes, as are spills from storage and disposal facilities, and some of the sources contained mixtures of hazardous and non-hazardous solid wastes.

Intrinsic Chemical Properties of RCRA Hazardous Waste ''Mixtures'' and ''Derived-From'' Wastes

We also analyzed the information in EPA's National Hazardous Waste Constituent Survey (NHWCS) Database to assess the intrinsic physical and chemical properties of RCRA hazardous waste ''mixtures'' and ''derived-from'' wastes. The purpose of the NHWC Survey was to collect descriptive information about the identity and measured concentrations of chemical constituents contained in RCRA hazardous wastes. The NHWCS was a one-time, voluntary participation mail survey we administered in 1996, providing a single-year ''snapshot'' of the intrinsic physical and chemical properties of RCRA hazardous wastes. It is EPA's most comprehensive and current database about hazardous waste constituents. We benchmarked the 1996 survey to data already collected in our 1993 Biennial Reporting System (BRS) database—which contains data provided by the 1993 universe of RCRA hazardous waste large quantity generators—by pre-loading survey questionnaires with the known 1993 BRS data for the NHWC survey facilities, and asking facilities to verify the known BRS data, as well as to provide new data about the known chemical constituents in the RCRA hazardous wastes they managed (constituent data are not contained in the BRS database). This analysis is presented as a technical supplement to this rulemaking for purpose of public understanding of the intrinsic nature of these two groups of wastes, which we currently regulate as RCRA hazardous. This supplemental analysis corroborates the substance of our proposed rule (64 FR 63382–63461, Nov. 19, 1999).

Although the survey results apply to a subset of the total universe of waste and should not be extrapolated to the larger universe of RCRA hazardous waste generators, the information provides valuable insight into the types and levels of chemicals that could be present in such wastes. A large number of waste streams captured in the NHWCS were identified by their generators as mixtures of solid waste and hazardous waste or derived-from hazardous wastes. The analysis revealed that potentially hazardous chemical constituents, have been and can be present in wastes mixed with or derived-from, RCRA hazardous wastes. Although this analysis is not a quantitative risk assessment, this conclusion is supported by the presence of persistent, bioaccumulative, and toxic (PBT) chemicals in these two waste groups, some of which are at relatively high concentrations. Consequently, we continue to be concerned about the potential risks posed by the mismanagement of RCRA hazardous

[8] U.S. EPA *Evaluation of Hazardous Waste Delisting Program,* December 2000; and *Analysis of the Delisting Petition Data Management System,* U.S. EPA, September 1998). EPA Docket 99–WH2P–FFFFF.

[9] EPA 2000. *Releases of Hazardous Constituents Associated with Mixture and Derived-from Wastes (An Update)* U.S. EPA, April 2000.

waste ''mixtures'' and ''derived-from'' wastes.

For more information about this analysis, please see the background document *Analysis of RCRA ''Mixtures and Derived-from'' Hazardous Waste Constituent Data,* which is available to the public from the RCRA Docket. The NHWCS database is available to the public via the Internet at *http://www.epa.gov/epaoswer/hazwaste/id/hwirwste/economic.htm.*

Regulatory Coverage by the Toxicity Characteristic

EPA also does not agree with comments that the mixture and derived-from rules are not necessary because the Toxicity Characteristic (TC) provides regulatory coverage of these wastes. The TC currently sets regulatory levels for only 40 chemicals. (see 40 CFR 261.24). On the other hand, the hazardous waste listings are based on hundreds of different chemicals. (see Appendix VII to 40 CFR Part 261). In addition, the TC levels are the result of laboratory analyses to predict whether a waste is likely to leach chemicals into groundwater at hazardous levels, not the result of a comprehensive risk assessment. Depending on the actual constituents in a waste and their concentrations, wastes with constituents that fall below TC levels can still pose unacceptable risks to human health and the environment if mismanaged. (55 FR 11799). EPA has listed wastes based on the presence of constituents below the TC levels. For example, in the final listing decision for spent hydrotreating and hydrorefining catalysts from refinery operations, we analyzed the potential risk from arsenic and benzene using input leachate concentrations capped at TC regulatory levels. The results of this analysis suggested unacceptable risks posed by these wastestreams from concentrations below the TC regulatory levels (63 FR 42154). The mixture and derived-from rules are necessary for capturing such wastes that could pose unacceptable risks from chemicals without TC levels and for risks not addressed by the TC approach.

Conclusion

When EPA determines that a waste is capable of posing a hazard to human health or the environment when improperly managed, that determination is based on consideration of several different factors, including the toxicity, persistence, degradability in nature, the potential of chemicals to bioaccumulate in tissue, flammability, corrosiveness, and other hazardous characteristics and related factors. The act of mixing, storing, disposing or even treating the waste does not guarantee removal of the hazard posed by these chemicals, nor does it remove EPA's obligation to ensure that the hazards presented by the waste continue to be controlled from the cradle to the grave, even when it is transferred to another waste matrix. Nevertheless, EPA will continue to develop approaches to exempt low-risk wastes from full Subtitle C regulation, as appropriate. Since the original promulgation of the mixture and derived-from rules, we have invited suggestions as to better ways of handling the difficult issues associated with the mixing, treating, storing, disposing, and otherwise managing waste following its generation. See 45 FR 33095 (May, 19, 1980). We have considered and are continuing to pursue suggestions for targeted exemptions (e.g., the CMA suggestions discussed at Section X of the preamble) as well as a risk-based exit level approach to identifying low-risk wastes.

B. Legality of the Mixture and Derived-From Rules

EPA received comments in response to both the 1995 and 1999 HWIR proposals on RCRA Subtitle C jurisdiction over mixtures and derivatives from the management of listed hazardous wastes. Of the 42 commenters who specifically commented on the statutory authority for these rules, 38 were received from industry (including utilities and trade associations), two were from waste management companies, one was from a waste management association and one was from an individual commenter. Almost all these comments expressed the view that EPA lacked statutory authority to promulgate these rules, although other commenters who generally supported retention of the mixture and derived-from rules expressed the view that these wastes are properly under RCRA Subtitle C jurisdiction.

The waste management association agreed that EPA had statutory authority under RCRA to promulgate the mixture and derived-from rules in 1980, and that EPA also had ample authority to retain the basic rules now without change. The commenter, citing *Shell Oil Corp.* v. *EPA,* believed that the rules were consistent with EPA's legal authority under RCRA section 3001 to determine when wastes are hazardous based on listing criteria, and under RCRA sections 3002–3004 to impose regulatory standards until wastes have ceased to pose a hazard to the public.

As noted, most commenters expressed the view that EPA is acting beyond its statutory authority by retaining the mixture and derived-from rules. These comments asserted three main points: (1) Mixture and derived-from wastes do not meet the statutory definition of hazardous under RCRA section 1004(5); (2) EPA has not met the requirements under section 3001, 42 U.S.C. Section 6921 and 40 CFR 261.10 and 261.11 for designating wastes as hazardous; and (3) EPA has no authority under sections 3002–3004 of RCRA to designate wastes as hazardous. A summary of each of these specific issues raised by commenters, and EPA's response to these issues, is provided below. For more information on these comments and EPA' responses, please see *Hazardous Waste Identification Rule: Revisions to the Mixture and*

Derived-From Rules Response to Comments Document.

(1)(a) Comment: Mixture and Derived-From Wastes Do Not Meet the Statutory Definition of Hazardous Under RCRA Section 1004(5)

Numerous commenters from industries, industry associations, utility companies, utility company associations and waste management companies generally believed that the mixture and derived-from rules were too broad and swept in many wastes which did not meet the statutory definition of hazardous wastes, and that the derived-from rule in particular was not supported by statutory authority. One commenter even felt that the derived-from rule was a ''legal fiction'' because treatment residuals must be managed as if the treatment had not occurred. Commenters noted that EPA only was authorized under the Resource Conservation and Recovery Act (RCRA) to designate as hazardous waste those solid wastes that EPA determined may (1) cause, or significantly contribute to an increase in mortality or serious illness, or (2) pose a substantial present or potential hazard to human health or the environment when improperly managed (RCRA section 1004(5), 42 U.S.C. 6903(5)). Commenters expressed the view that EPA can regulate under Subtitle C only those solid wastes that EPA determined pose substantial hazards per the language in Section 1004(5) of RCRA. Many commenters also noted that, in their view, many of these wastes pose minimal or no threat to the environment and public health. The majority of these commenters believed that EPA made no attempt to demonstrate that derived-from wastes met the statutory definition of hazardous waste. Instead, these commenters believed EPA simply drew conclusions that these materials were

hazardous waste, even though many derived-from wastes had not met the statutory definition of hazardous waste. They also noted that EPA has admitted that many derived-from wastes pose little risk to human health or the environment. Therefore, they claim that the derived-from rule was not a legally valid approach to regulating materials that result from the management of hazardous waste.

(1)(b) EPA Response

While we agree that the mixture and derived-from rules capture some waste that may actually pose quite low hazard, we have implemented and continue to pursue approaches (such as today's revisions) to exclude such waste from full Subtitle C regulation. Nevertheless, these rules are a necessary component of cradle-to-grave waste management, to protect human health and the environment from unacceptable risks. EPA does not agree with comments that mixtures and derivatives do not meet the definition of ''hazardous waste'' in section 1004(5) of RCRA, nor do we agree that Congress did not intend these wastes to be regulated under Subtitle C of RCRA.

The definition of hazardous waste is a broad definition which encompasses solid wastes or combinations of solid wastes which, because of their ''quantity, concentration, or physical, chemical, or infectious characteristics may * * * pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of, or otherwise managed.'' Because they originate from waste that has already been determined to be hazardous, EPA has a reasonable basis to conclude that mixtures and derivatives could also pose a potential or present hazard to human health or the environment if not properly managed. The original listing of the waste already establishes the reasons, i.e., the ''quantity, concentration, or physical, chemical, or infectious characteristics'' for having identified the listed waste as hazardous. It is reasonable to conclude, without information to the contrary, that both mixtures and derivatives of such wastes may pose a substantial potential or present hazard to human health or the environment if not properly managed, and therefore fall under the definition of hazardous waste in RCRA section 1004(5).

Nothing in the section 1004(5) definition of hazardous waste requires EPA to prove that every member of a category of waste poses a hazard. In fact, many waste listings describe categories or ''classes'' of hazardous wastes because they cover a range of materials that are not identical in composition.

EPA also does not agree with commenters' assertion that wastes derived from the treatment, storage, or disposal of listed hazardous wastes in particular do not meet the section 1004(5) definition. As explained in section VII.A.2, residuals from the treatment of hazardous wastes can contain higher concentrations of the chemicals that led to the hazardous waste listing in the first place, and therefore may pose a present or potential hazard to human health or the environment if improperly managed. Indeed, the objective of many forms of treatment is precisely to isolate and collect hazardous constituents, often in concentrated form, for further management. For example, de-watering of waste, e.g., to make it easier to transport, is a form of treatment that often does not significantly change the character of the waste other than to leave it in a more compact and concentrated form. At the more aggressive end of the treatment spectrum, baghouses on hazardous waste combustion devices collect hazardous constituents that would otherwise be emitted to the air from the combustion process, creating dust that predictably contains any metals that were in the original wastes as well as products of incomplete combustion. Congress specifically expressed concern in RCRA about treatment residues created by federal and state pollution control laws, RCRA 1002(b)(3). The potential for persistent hazardous constituents in treatment residues and the Congressional findings in the RCRA statute support EPA's conclusion that residuals from the treatment, storage and disposal of listed hazardous waste may pose a substantial present or potential hazard.

EPA acknowledges that not all mixtures and derivatives pose hazards to human health and the environment (see, e.g. 57 FR 21451). There are mechanisms to address this fact, and we are continuing to pursue approaches to exempt low-risk wastes. First, RCRA and EPA regulations provide for the delisting of listed hazardous waste. RCRA 3001(f); 40 CFR 261.20 and 40 CFR 261.22. Since the federal delisting program took effect in 1980, EPA has excluded an estimated 45 million tons of waste, resulting in an estimated cumulative cost savings between $1.1 billion and $1.3 billion dollars (in 1999 dollars). In 2000 alone, we estimate cost savings of approximately $105.4 million.[10] In the 1995 HWIR proposal, EPA stressed the continued need for the delisting program, although we also acknowledged that it had not provided an efficient solution to the regulation of low-risk wastes. However, as discussed in Section VIII.C of this preamble, since the delisting program was delegated to the EPA Regions on October 10, 1995, a number of innovations have been adopted that have greatly improved the efficiency and effectiveness of the delisting program. EPA will continue these efforts and others in order to keep improving the delisting process.

In addition, as EPA has identified specific mixtures and derived-from wastes which no longer meet the definition of hazardous waste, and has therefore established a number of exclusions in 40 CFR 261.3. Currently, there are over a dozen types of hazardous waste mixtures and residuals excluded or conditionally exempted under section 261.3. See the ''Table of Revisions to 40 CFR 261.3'' in Section VII.C.2 of this notice for a list of these exclusions. This is in addition to other exclusions and conditional exclusions set forth in 40 CFR 261.4 as well in other parts of the hazardous waste regulations.

Furthermore, as discussed in Section VI of this notice, EPA is continuing work to develop exit levels for listed hazardous wastes, so that listed wastes can become ''delisted'' automatically, under a self-implementing procedure. But, as also explained in Section VI of this notice, that is a complex undertaking and, despite best efforts, EPA is not able at this time to propose a technically supported concentration-based exemption.[11] Also, as explained in Section X of this preamble, we are also investigating and will actively pursue other specific exemption proposals.

EPA continues to believe, as it did in 1980, that it would be virtually impossible to try to identify all possible waste mixtures and treated wastes and assess their hazards individually. EPA's rule reasonably retains jurisdiction over both broad classes and places the burden of proof on the regulated community to show that a particular waste has ceased to present a hazard.

Even if all listed hazardous waste mixtures and derivatives could not be

[10] U.S. EPA *Evaluation of Hazardous Waste Delisting Program,* December 2000.

[11] Congressional report language accompanying EPA's FY 2001 appropriations act directs EPA to submit the HWIR model to an independent peer review, and respond publicly to the findings of the peer review prior to using it to establish regulatory determinations. S. Rep. No. 106–410 at 90 (2000)). EPA is currently in the process of preparing for that peer review.

said to meet the statutory hazardous waste definition, at the very least it is reasonable and consistent with RCRA to *presume* that mixtures and derivatives of listed hazardous wastes remain hazardous under the definition, unless that presumption is rebutted through the delisting process. As discussed further in the next section, Congress established clear standards for hazardous waste identification, but did not speak specifically to the issue of the circumstances under which mixtures and derivatives of listed hazardous wastes should be regulated. Under these circumstances, EPA must interpret and implement the statute in a way that effectuates the statutory objectives. The mixture and derived-from rules are the only implementation approach that EPA is aware of at this time that effectuates the protective purposes of RCRA.

(2)(a) Comment: EPA Has Not Met the Requirements Under Section 3001, 42 U.S.C. 6921 and 40 CFR 261.10 and 261.11 for Designating Wastes as Hazardous

These commenters also disagreed with EPA's claim of authority under section 3001 (60 FR at 66348, 64 FR 63390). The commenters believed that EPA had not followed the required procedures or made the findings required by RCRA to identify ''mixture and derived-from wastes'' as hazardous. They noted that sections 3001(a) and (b) outline a two-step process for classifying wastes as hazardous. EPA first must specify criteria to determine if the waste is ''hazardous,'' 42 U.S.C. 6921(a), which is defined as presenting a substantial present or potential hazard to human health or the environment 42 U.S.C. 6904(5). Once the criteria are established—as they have been in 40 CFR 261.10 and 261.11—the commenters stated that EPA must apply these criteria to identify a characteristic of hazardous waste or to list a waste as hazardous. In these commenters' view, the mixture and derived-from rules identify a broad class of wastes as hazardous without regard to the criteria established by EPA. Also, they noted that the proposal did not discuss how mixtures and derived-from wastes pose a substantial present or potential threat to human health or the environment, nor did EPA discuss concentration levels, mobility, persistence, or any other objective factors of hazardousness that are listed in the statute or the regulations.

In addition, numerous commenters from industries, industry associations, utility companies and utility company associations disagreed with EPA identifying mixture and derived-from wastes as a ''class'' under 40 CFR 261.11 (60 FR at 66348, 64 FR at 66390). They believed that such identification required a finding that EPA had reason to believe that individual wastes within the class ''typically or frequently are hazardous'' under the definition at RCRA section 1004(5) (see 40 CFR 261.11(b)). Commenters noted that EPA's own longstanding practice was that, in a class-wide listing determination, ''typically or frequently'' meant that more than 50 percent of the samples taken from that class exhibited some or all of the 40 CFR 261.11(a) criteria (see, *e.g.,* 56 FR 48020, Sept. 23, 1991 and 45 FR 33114, May 19, 1980). The commenters stated that EPA historically has required that samples of a waste class contain concentrations of toxic constituents at 100–1000 times specified health-based numbers to be considered as posing a ''substantial hazard'' under 40 CFR 261.11(a)(3) (see, *e.g.,* 56 FR. 48018, Sept. 23, 1991 and 57 FR 21453, May 20, 1992). They noted that EPA generally requires that wastes typically and frequently contain toxic constituents at ''many times'' health-based levels and that such constituents be mobile and persistent. The current proposal made no reference to these prior practices, nor did it offer evidence that EPA collected or analyzed any samples or otherwise attempted to demonstrate that 50 percent—or any substantial percentage—of mixtures or treatment residues met any of the specific criteria of § 261.11(a). Also, they commented that the proposal offered nothing responsive to the 100–1000 times health-based numbers requirement. In addition, they noted that the class must have ''sufficient uniformity'' to apply the criteria in 40 CFR 261.11 (45 FR 33114). The commenters felt that it was obvious that the class of mixture and derived-from wastes was anything but uniform, a point admitted by EPA (45 FR 33095–96, ''the potential combinations of listed wastes and other wastes are infinite''). Therefore, the class did not have the requisite uniformity needed to be classified as hazardous.

(2)(b) EPA Response

EPA does not agree with comments that the Agency lacks statutory authority under RCRA Section 3001 for either the mixture rule or the derived-from rule. We have the statutory authority to promulgate these rules as part of the authority to ''develop and promulgate criteria for identifying the characteristics of hazardous waste and for listing hazardous waste.'' Among the criteria are the provisions of 40 CFR 261.3, which provide generally applicable criteria for the identification of hazardous waste. The mixture and derived-from rules are included in section 261.3(a)(2), which states that a solid waste is a hazardous waste if ''[i]t meets any of the following criteria.'' These rules ensure that listed hazardous wastes that are mixed with other wastes or treated in some fashion do not escape regulation as hazardous waste until EPA has made some determination that they no longer threaten human health or the environment. This section also includes the exclusions from the definition of hazardous waste, including those promulgated today, where EPA has made specific findings on the record that the excluded wastes are no longer hazardous under the criteria set forth in the exclusions. We will continue to pursue additional approaches to exempt low-risk wastes, as appropriate.

The commenters' position rests largely on the assumption that mixtures and derivatives of wastes are entirely new and distinct substances from the originally listed waste, leading to the apparent conclusion that EPA must make a separate, record-based finding of hazardousness for each of the infinite variations of mixtures and derivatives generated from the wastes EPA has listed. EPA disagrees. In upholding the ''contained-in policy,'' the U.S. Court of Appeals for the D.C. Circuit deferred to EPA's conclusion that a listed hazardous waste cannot be presumed to change character when it is mixed with an environmental medium. *Chemical Waste Management* v. *EPA,* 869 F.2d 1526, 1539 (1989). We believe that the same reasoning applies to the mixture rule. Similarly, as discussed in Section VII.A.2, waste management residuals can contain constituents from the originally listed waste at even higher concentrations than the original waste and, therefore, may pose a hazard. Indeed, EPA views the mixture and derived-from rules as applications of the general principle that ''a hazardous waste will remain a hazardous waste'' unless it is excluded through a regulatory process. 40 CFR 261.3(c)(1). *See Chemical Waste Management,* 869 F.2d at 1539 (upholding contained-in policy as interpretation of § 261.3(c)(1)).

EPA's approach is consistent with Congress' intention that hazardous waste be regulated for the long term under a comprehensive regulatory program. One of the findings upon which the 1976 RCRA legislation was based was that ''hazardous waste presents, in addition to the problems associated with nonhazardous solid waste, special dangers to health and requires a greater degree of regulation than does nonhazardous solid waste.''

Public Law No. 94–580, section 1002(5). With enactment of the Hazardous and Solid Waste Amendments (HSWA) in 1984, Public Law No. 98–616, Congress strengthened that provision and added three more findings: ''the placement of inadequate controls on hazardous waste management will result in substantial risks to human health and the environment; if hazardous waste management is improperly performed in the first instance, corrective action is likely to be expensive, complex , and time consuming; certain classes of land disposal facilities are not capable of assuring long-term containment of certain hazardous wastes * * *''. RCRA section 1002(b)(5), (6), (7). Similarly, when RCRA was enacted in 1976, Congress stated one of the objectives of the Act was ''regulating the treatment, storage, transportation, and disposal of hazardous wastes which have adverse effects on health and the environment.'' Public Law No. 94–580, 1003(a)(4). This provision too was replaced with a stronger statement by HSWA, that an object of the statute is ''*assuring* that hazardous waste management practices are conducted in a manner which protects human health and the environment.'' (Emphasis added.) RCRA 1003(a)(4). Further, HSWA added as national policy that hazardous waste ''should be treated, stored, or disposed of so as to minimize the present and future threat to human health and the environment.'' RCRA 1003(b). It is clear that Congress' principal objective under Subtitle C was protecting against threats to human health and the environment caused by hazardous waste. We acknowledge that such a goal does not imply that all mixtures and derived-from wastes must be regulated under full Subtitle C requirements, regardless of the potential risks they pose, but we believe that it is reasonable to regulate these wastes until it is shown that such wastes do not pose a hazard.

The D.C. Circuit Court of Appeals has characterized RCRA as establishing ''a ''cradle-to-grave'' regulatory structure overseeing the safe treatment, storage and disposal of hazardous waste.'' *United Technologies Corp.* v. *EPA,* 821 F.2d 714, 716 (D.C. Cir. 1987). The mixture and derived-from rules are a necessary part of this approach, by maintaining jurisdiction over mixtures and derivatives of already listed waste. Without these rules, as explained in Section VII.A.(2), the ''cradle-to-grave'' structure would have a major loophole, undermining the objectives of RCRA.

The delisting provision supports the mixture and derived-from rules as a means to address wastes that could pose unacceptable risks. In amending RCRA section 3001 in 1984, Congress enacted subsection (f) to require the Agency to ''consider factors (including additional constituents) other than those for which the waste was listed'' if the Agency ''has a reasonable basis to believe that such additional factors could cause the waste to be a hazardous waste.'' The legislative history shows that Congress was concerned that both as generated wastes and wastes resulting from treatment were exiting the Subtitle C system while still hazardous. ''The delisting process allows petitioners (usually individual hazardous waste generators or treatment facilities) the opportunity of showing that their wastes are significantly different—because of treatment, or because they are generated in a different process—from listed wastes of the same type. * * * Under this amendment, there would no longer be a risk that delisting a waste means releasing waste which may still be hazardous from regulation.'' H.R. Rep. No. 98–198 Part I (May 17, 1983). Congress made this change because it believed that under its previously existing delisting regulations, EPA allowed wastes that remained hazardous to exit the Subtitle C system. S. Rep. No. 98–284 (Oct. 28, 1983). The language and legislative history reflect Congress' assumption that treatment derivatives from listed wastes *would* remain subject to Subtitle C absent a delisting.

The land disposal restrictions (LDR) provisions of the statute further demonstrate that the mixture and derived-from rules are consistent with Congress' intent. The statute authorizes EPA to promulgate regulations establishing levels or methods of treatment, ''if any,'' that substantially diminish the toxicity or mobility of the hazardous waste, and provide that the waste may thereafter be disposed of in a land disposal facility that ''meets the requirements of [Subtitle C].'' RCRA section 3004(m). This section demonstrates two things. (1) Congress contemplated the possibility that there may be hazardous wastes for which no form of treatment would be adequate; and (2) Congress assumed that waste that was treated according to the promulgated treatment standards would nonetheless still be disposed of in a Subtitle C (hazardous waste) facility. This provision is at odds with the commenters' assertion that, once treated, a hazardous waste becomes a fundamentally different waste and is unregulated unless EPA undertakes a separate rulemaking to list the treated waste.

Other provisions of the 1984 amendments to RCRA relating to land disposal provide further support for the mixture and derived-from rules. See, e.g., section 3004(o) (establishing minimum technological requirements for land-based hazardous waste management units); section 3004(p) (establishing groundwater monitoring requirements); section 3005(c)(3) (requiring 5-year permit reviews for land disposal facilities); section 3005(e)(2), (3) (establishing interim status termination dates for certain non-compliant land disposal facilities); section 3005(i), (j) (establishing specific additional requirements for certain land-based units); section 1002(b)(7) (finding that certain classes of land disposal facilities are not capable of assuring long-term containment). Some commenters suggest that treatment residuals from listed hazardous wastes do not remain hazardous. We believe it is unlikely Congress would have created such stringent requirements for land disposal, if it intended for treatment residuals to escape Subtitle C regulation.

Taken to the extreme, the view that mixtures containing listed wastes should not be regulated as hazardous wastes would imply that most listed hazardous wastes, even if they reached a management unit in ''pure'' form, would cease to be hazardous once they entered the unit, since most units contain mixtures of different wastes. However, the RCRA statute clearly assumes that units would not only receive, but continue to contain, hazardous waste. See, e.g. section 3005(j)(11) and (12)(A), Moreover, the comprehensive requirements mandated for hazardous waste management units, including the technical standards of section 3004 and the permitting regime of section 3005, could be undermined if facilities receiving listed hazardous wastes could argue that their management units are subject to this scheme only as long as they are receiving the waste, but that they become exempt thereafter since the units do not contain hazardous waste.

Various provisions in RCRA appear to contemplate that at least some hazardous waste mixtures and derivatives would themselves be hazardous. See, e.g., section 3004(d)(2)(A), (B) (addressing liquid hazardous wastes, ''including free liquids associated with any solid or sludge,'' suggesting that liquid derivatives of hazardous waste would themselves be hazardous). Another example is the language in section 3005(b), which requires permit applicants to provide information regarding hazardous wastes and ''combinations of * * * hazardous waste and any other solid waste'' to be

managed at the permitted facility, as well as information regarding the site at which the ''products of treatment'' of hazardous waste will be managed.

Finally, the appropriations act provision that EPA is implementing with today's rule requires that the mixture and derived-from rules would continue in effect while EPA developed revisions to the regulations. Public Law No. 102–389, 106 Stat. 1571 (October 1992). That provision instructed EPA to ''promulgate revisions to paragraphs (a)(2)(iv) and (c)(2)(i) of 40 CFR 261.3, as reissued on March 3, 1992 * * *''. Congress expressed no intent that these rules be rescinded or replaced.

We also disagree with commenters' assertion that the mixture and derived-from rules violate the ''two-step process'' of section 3001(a) and (b) for hazardous waste identification. It is true that the statute requires EPA to promulgate criteria for hazardous waste identification (section 3001(a)) and, based on those criteria, to identify characteristics of hazardous waste and to list hazardous wastes (section 3001(b)). In general, EPA has done this in separate steps. *See* 40 CFR part 261, Subpart B (criteria) and Subparts C and D (characteristics and lists). However, the statute does not preclude EPA from creating self-implementing criteria, as EPA has done with the mixture and derived-from rules. EPA does not interpret 3001(b) as imposing an obligation on EPA to undertake a separate waste identification rulemaking step following the development of self-implementing criteria. Alternatively, the mixture and derived-from rules could be viewed as a simultaneous exercise of EPA's 3001(a) and 3001(b) authority. Nothing in the statute prevents EPA from simultaneously, in combined regulations, establishing the criteria for waste identification, and identifying the characteristics of hazardous waste and listing waste.

We agree with commenters who point out that EPA has not used the class listing process under 40 CFR 261.11(b) to list mixtures and derived-from wastes as a class. However EPA does not agree that mixtures and derivatives must be individually listed or identified as hazardous wastes before being subject to Subtitle C jurisdiction. As previously stated, mixtures and derivatives are identified as hazardous waste by virtue of containing or coming from wastes that have been listed pursuant to the criteria in 40 CFR 261.11. EPA cannot presume that the hazardous constituents that are the basis of the original listing are always eliminated or rendered nontoxic simply because a waste is mixed with other wastes or managed in some fashion.

(3)(a) Comment: EPA Has No Authority Under Sections 3002–3004 of RCRA To Designate Wastes as Hazardous

Several commenters from industries, industry associations, utility companies, utility company associations and waste management companies also disagreed with EPA's claim of authority under sections 3002–3004 of RCRA. They argued that these sections of RCRA provide for hazardous waste management standards for generators, transporters, and treatment, storage and disposal facilities, not for identifying hazardous wastes. Instead, that role is unambiguously carried out by section 3001. 42 U.S.C. 6921, and in previous promulgations and in litigation, EPA relied primarily on section 3001 to justify the mixture and derived-from rules.

(3)(b) EPA Response

In citing sections 3002–3004 in the discussion of EPA's statutory authority, we did not intend to imply that these sections by themselves provide statutory authority for the mixture and derived-from rules. Rather, our intent was to explain that these sections inform the process of identifying hazardous waste under section 3001 because the purpose of identifying a solid waste as hazardous is to ensure that it is managed properly.

The statute directs EPA to regulate hazardous waste generators (section 3002(a)), hazardous waste transporters (section 3003(a)), and hazardous waste treatment, storage, and disposal facilities (section 3004(a)) ''as necessary to protect human health and the environment.'' It is our view that this informs the decision of when waste should be identified as hazardous and therefore subject to the regulatory requirements of Subtitle C . In deciding whether to identify a waste as hazardous under section 3001, EPA considers whether Subtitle C controls on the waste are necessary to protect human health and the environment. We have therefore consistently interpreted section 3001 to give us broad flexibility in fashioning criteria for hazardous wastes to enter or exit the Subtitle C regulatory system. See, *Military Toxics Project* v. *EPA,* 146 F.3d 948, 958 (D.C. Cir. 1998). As discussed above, this interpretation is consistent with the statutory purpose of protecting human health and environment by establishing a comprehensive hazardous waste regulatory program. (RCRA sections 1002, 1003).

In addition to providing the context in which the determination of whether a waste ''should be subject to the requirements of Subtitle C,'' sections 3002–3004 allow us to continue to impose requirements on waste handlers until wastes have ''cease[d] to pose a hazard to the public.'' *Shell Oil Co.* v. *EPA,* 959 F.2d 741, 754 (D.C. Cir. 1991). See also *Chemical Manufacturers Assoc.* v. *EPA,* 919 F.2d 158, 162–65 (D.C. Cir. 1990) (EPA may regulate the disposal of nonhazardous wastes in a hazardous waste impoundment under section 3004) and *Chemical Waste Management, Inc.* v. *EPA,* 976 F.2d 2, 8, 13–14 (D.C. Cir. 1992) (EPA may require further treatment of wastes under section 3004 even though they cease to exhibit a hazardous characteristic). Without the mixture and derived-from rules, EPA could not effectively carry out its obligation under sections 3002–3004 to protect human health and the environment. Thus, in addition to the specific authority of section 3001, the mixture and derived-from rules are authorized under section 2002(a)(1), which empowers the Administrator to ''prescribe * * * such regulations as are necessary to carry out his functions'' under RCRA.

C. Regulatory Cost of the Mixture and Derived-From Rules

(1) Summary of Comments on the Regulatory Cost of the Mixture and Derived-From Rules

EPA received comments from five commenters in response to both the 1995 and the 1999 HWIR proposals concerning the regulatory cost of the mixture and derived-from rules. Of those comments, four were received from industries, and one was from an industry association. The commenters generally argued that the rules constituted over-regulation of low-risk wastes causing high costs and heavy burdens with little benefit to human health and the environment. A summary of the specific issues raised by commenters is provided below.

One industry commenter argued that the rules have added significant costs to the operation of manufacturing facilities throughout the nation, while providing insignificant benefits to human health and the environment. The commenter noted that the generation of large quantities of hazardous wastewaters based solely on the practice of efficient, centralized wastewater treatment has led the company to evaluate the segregation of hazardous and non-hazardous wastewaters, to prevent the attachment of a ''hazardous'' label to those non-hazardous wastewaters. Such a segregation would require a second treatment facility and much re-piping,

with the net result that millions of dollars would be expended and there would be no improvement in the wastewaters ultimately discharged to the environment through two, rather than one, discharge points. All that would be achieved is an apparent reduction in hazardous waste generation which does not, in reality, represent a decrease in waste generation, treatment or discharge, but rather a reporting game and artificial waste minimization driven by EPA requirements. It is this kind of ''game'' that compromises the credibility of both EPA and the regulated community and imposes a significant burden on the regulated community.

Another industry commenter noted that managing the residuals as if they were listed hazardous waste was significantly more expensive than managing the waste in accordance with solid waste regulations. For example, in 1995 transportation and disposal of ash from a hazardous solids incinerator cost approximately $185,000. In comparison, the ash could be managed in a state permitted Subtitle D landfill as non-hazardous waste for about $25,000. Another industry stated that these rules have resulted in significant expense that has diverted resources away from greater environmental opportunities.

One association commenter stated that the rules frequently cause waste codes to be carried through and applied to wastes that are fundamentally different from the original waste considered in the development of the listing classification. The commenter noted that there are many instances in which the risk associated with the original listed waste simply does not carry through in the same way, and that the composition and nature of any risk posed by these materials often bears little or no relationship to the original listed waste. Specific examples cited include (1) Wastewaters where most of the arsenic has been precipitated and removed, (2) debris from hazardous waste refractories undergoing repair, and (3) wastewaters that had received ethylene oxide as part of an emergency incident. The costs and impacts of this automatic waste-code carry-through are quite significant. Much of the industry operates through smaller ''batch'' processes, while the regulations are crafted for a continuous manufacturing process. And, in many operations, delisting the mixture is not an option, as the facility can only store the mixture on-site for 90 days, which is not enough time for a delisting.

An industry association also stated that the costs imposed by the rules from a number of member companies are easy to identify: on-site storage costs, paperwork and administrative costs, higher shipping and transportation costs, and higher treatment, storage and disposal costs. And, these are the same types of costs analyzed and tallied by EPA in documenting the cost savings it attributes to the modified exemption for hazardous wastes listed solely for a characteristic of ignitability, corrosivity and/or reactivity. The commenter also stated that another significant cost of the current regulatory regime was the extra time and effort required to evaluate and apply the rules in the real world. Even after 20 years, facilities still have difficulty evaluating when, whether and why certain waste streams must be managed as Subtitle C hazardous wastes under this approach.

2. Response to Comments on Regulatory Cost of the Mixture and Derived-From Rules

We agree that the mixture and derived-from rules have captured wastes that could safely be managed outside of RCRA Subtitle C regulation. As explained below, we have addressed specific cases of such over-regulation through targeted rulemaking in the past, and we will continue to explore options for exempting wastes that do not warrant Subtitle C regulation. However, we do not agree that hazardous waste regulation of mixture and derived-from waste provides no additional protection of human health and the environment. For example, as we discuss in Section VII.A, wastewaters prior to discharge may contain constituents at levels that could pose unacceptable risks if they are mismanaged. Furthermore, the mixture and derived-from rules address cross-media transfer of persistent hazardous chemicals from the wastewater to the treatment sludge.

One way of reducing the regulatory burden available to individual waste generators is the delisting process. Generators have the option of petitioning the Agency under 40 CFR 260.20 and 40 CFR 260.22 to exclude their wastes from the lists of hazardous wastes in subpart D of part 261 if they believe those wastes no longer pose risk to human health and the environment. Since the delisting program was delegated to the EPA Regions on October 10, 1995, a number of innovations have been adopted that have greatly improved the efficiency and effectiveness of the delisting program. In particular, EPA Region VI's award-winning program has created a process that produces a decision within an average of 180 days, provides a streamlined application checklist, proactively coordinates with State personnel, and includes a user-friendly, stand-alone software program that produces an updated, state-of-the art assessment of risks associated with delisting a petitioned waste. In addition, EPA and the applicant now work together to develop an initial application that can be approved without the need for major revisions, which is a major factor in reducing the processing time. EPA will continue these efforts and others in order to keep improving the delisting process. Since 1980, EPA has excluded an estimated 45 million tons of waste, resulting in an estimated cumulative cost savings between $1.1 billion and $1.3 billion (in 1999 dollars). In 2000 alone, we estimate cost savings of approximately $105.4 million.[12]

In addition, EPA has taken steps since the mixture and derived-from rules were promulgated in 1980 to further reduce the scope, and therefore the cost, of these rules when appropriate. As one commenter to the 1999 proposal pointed out, eighteen months after the original mixture and derived from rules, EPA promulgated the first of several exclusions for low-risk waste from the definition of hazardous waste. Over the past twenty years, EPA has developed exclusions and/or tailored regulations to reduce the regulatory cost for more than a dozen types of hazardous waste mixtures and residuals. (see table below)

[12] U.S. EPA *Evaluation of Hazardous Waste Delisting Program,* December 2000.

REVISIONS TO 40 CFR 261.3 THAT HAVE REDUCED THE REGULATORY COST OF THE MIXTURE AND DERIVED-FROM RULES

CFR citation	Hazardous waste(s) affected	Year promulgated (FR citation)
40 CFR 261.3(a)(2)(iv)(A) and (B)	Certain solvents managed in wastewater treatment systems.	1981 (46 FR 56582)
40 CFR 261.3(a)(2)(iv)(C)	Certain petroleum wastes discharged to the refinery oil recovery sewer.	1981 (46 FR 56582) Additional wastes added in 1998 (63 FR 42184)
40 CFR 261.3(a)(2)(iv)(D)	De minimis losses of commercial chemical product.	1981 (46 FR 56582)
40 CFR 261.3(a)(2)(iv)(E)	Certain laboratory wastewaters	1981 (46 FR 56582)
40 CFR 261.3(a)(2)(iv)(F) and (G)	Certain carbamate wastewaters	1995 (60 FR 7848)
40 CFR 261.3(a)(2)(v)	Used oil	1992 (57 FR 41611)
40 CFR 261.3(c)(2)(ii)(A)	Certain waste pickle liquor sludges	1984 (49 FR 23284)
40 CFR 261.39(c)(2)(ii)(B)	Wastes derived from burning certain oil-bearing wastes as fuel.	1987 (52 FR 11819)
40 CFR 261.3(c)(2)(ii)(C)	Wastes derived from high temperature metals recovery of certain hazardous wastes.	1992 (57 FR 37263)
40 CFR 261.3(c)(2)(ii)(D)	Certain types of biological treatment sludge	1995 (60 FR 7848)
40 CFR 261.3(c)(2)(ii)(E)	Certain types of catalyst inert support media	1998 (63 FR 42184)
40 CFR 261.3(f)	Certain types of debris contaminated with a hazardous waste.	1992 (57 FR 37264)

In each of these revisions to 40 CFR 261.3, EPA considered the case-specific circumstances of the waste affected and, through the formal rulemaking process, determined that these wastes merited special consideration under the hazardous waste identification rules. In many cases, these wastes still warranted enough concern to impose specific management and other implementation requirements. For example, the solvent exclusions in 40 CFR 261.3(a)(2)(iv)(A) and (B) require that (1) these wastes are managed in a system the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act, and (2) the total weekly usage of these solvents divided by the average weekly flow of the wastewater into the treatment works would not exceed a specific regulatory level (either 1 ppm or 25 ppm).

Under today's final rule, EPA has continued the effort to reduce the burden from the mixture and derived-from rules where appropriate by excluding wastes listed solely for ignitability, corrosivity, and/or reactivity, once the waste no longer exhibits any of the hazardous waste characteristics (40 CFR 261.3(g)). We are also finalizing a conditional exemption for mixed waste from the mixture and derived-from rules, provided the mixed waste is handled in accordance with 40 CFR part 266, Subpart N. (40 CFR 261.3(h))

Finally, over the past twenty years EPA has promulgated numerous rules establishing exclusions or conditional exemptions from the solid and hazardous waste definitions, and from regulatory requirements for particular wastes and management practices. These exemptions are part of EPA's overall effort to avoid unnecessary regulation of waste.

EPA plans to continue work on other types of hazardous waste exemptions, including the additional targeted exemptions for certain categories of wastes and management practices, and the concentration-based exemptions (HWIR exemption) discussed in the November 19, 1999 proposal. We also plan to continue on-going efforts to streamline the existing delisting program.

In regard to the specific examples of over-regulation claimed by one commenter (see comment # WH2P–00035, page 10), it is difficult for EPA to fully evaluate these cases without more specific data. For example, in the case of wastewaters where most of the arsenic has been precipitated and removed, it is not clear whether there are any other hazardous constituents of concern in the treatment sludge, and whether the residual arsenic might still pose a risk (depending on waste volume and management method). In the case of contaminated bricks from hazardous waste refractories undergoing repair, it would appear that the exclusion for debris [40 CFR 261.3(f)] could address this concern. Finally, for wastewaters that had received ethylene oxide as part of an emergency incident, while it is true that ethylene oxide eventually breaks down to ethylene glycol, this reaction is not instantaneous. When released into water, ethylene oxide will primarily be lost by three processes: volatilization, hydrolysis and biodegradation. The half-lives of these reactions range from a few hours to up to 20 days.[13] Ethylene oxide itself is toxic, and if these wastewaters were automatically considered non-hazardous, they could present a substantial risk, depending on actual concentrations and exposure patterns. Both low level chronic exposure and acute high levels of ethylene oxide can lead to a broad spectrum of neurological effects. Also, inhalation studies have shown that exposure to ethylene oxide can result in a wide range of carcinogenic effects, and NIOSH considers ethylene oxide to be a potential occupational carcinogen.[14] Therefore, EPA does not agree that such a mixture should be automatically excluded from hazardous waste regulation. More importantly, since the purpose of this rulemaking is not to evaluate individual wastestreams, EPA does not believe this example demonstrates that the mixture and derived-from rules themselves are unnecessary as a general matter.

EPA understands that the RCRA regulations, in particular the waste identification regulations, can be difficult to understand. We have attempted to use plain language in drafting today's revised regulatory language, and will continue to make regulatory language more accessible to readers in the future. In addition, we believe that the mixture and derived-from rules are more straightforward than the alternative of having to evaluate each combination and permutation of

[13] Agency for Toxic Substances and Disease Registry. (1990). Draft Toxicological Profile for Ethylene Oxide.

[14] National Institute for Occupational Safety and Health. (1989). Ethylene Oxide Sterilizers in Health Care Facilities, Engineering Controls and Work Place Practices. DHHS (NIOSH) No. 89–115.

listed waste on a case-by-case basis. We believe this alternative would create uncertainty for the regulated community, state agencies, the public, and the courts, as various stakeholders press conflicting views as to whether a particular waste does or does not continue to meet the listing description.

VIII. What Were the Major Comments on the Revision to 40 CFR 261.3 To Exclude Wastes Listed Solely for Ignitability, Corrosivity, and/or Reactivity, and How Has EPA Responded to Them?

Most commenters generally supported revisions to 40 CFR 261.3 to various degrees. Chemical-producing industries as well as Federal government agencies who commented were unanimous in support. Most states supported the proposed revisions to the rules to varying degrees. Below are summaries of the major comment issue areas for this proposed exclusion. For more detailed comment responses, please see *Hazardous Waste Identification Rule: Revisions to the Mixture and Derived-From Rules Response to Comments Document.*

A. Eligibility of Waste Listed for the Toxicity Characteristic

(1) Comments on Eligibility of Waste Listed for the Toxicity Characteristic

EPA received comments from 12 commenters in response to both the 1995 and the 1999 proposals concerning inclusion of wastes listed solely for the toxicity characteristic in the expanded exclusion. Of those comments, four were received from industry, two were from industry associations, four were from utility companies or utility company associations, one was from a Federal Government Agency, and one was from an industry consultant. A summary of the specific issues raised by commenters is provided below.

While supporting the proposed exclusion, these commenters urged EPA to modify the proposal so the exclusion would apply to wastes listed due to any of the four characteristics, including the toxicity characteristic. Commenters asserted that it was not logical to limit the exclusion for derived-from wastes to three of the four characteristics, regardless of the fact that no listed wastes are listed solely on the basis of the toxicity characteristic. One commenter stated that it appears as if EPA suspects that wastes containing TC constituents below the toxicity characteristic are not really safe. A few commenters noted that in the future, wastes that may be listed solely for the toxicity characteristic should be eligible for the exclusion. Another commenter also noted that the proposed regulatory language does not provide for any additional hazardous waste characteristics that might be promulgated in the future. Commenters suggested that EPA replace references to ignitability, corrosivity, and reactivity in the proposed regulatory language for 40 CFR 261.3(g) with references to any characteristic of hazardous waste identified in subpart C, reflecting the approach and language used in the current mixture rule.

Several commenters noted that EPA did not offer an explanation for omitting wastes listed solely because they exhibit the characteristic of toxicity from eligibility for the proposed exclusions that would be granted by 40 CFR 261.3(g). EPA did explain that, since no listings to date have been based on the toxicity characteristic, EPA was proposing to limit the new revision to the derived-from rule to wastes listed because they exhibit only the characteristics of ignitability, corrosivity, or reactivity. However, the commenters believed it is confusing to give no explanation for proposing the elimination of an existing exclusion from the mixture rule, even if no wastes now exist that are eligible for the exclusion. Therefore, the commenters recommended that the preamble for the final rule contain such an explanation.

(2) EPA Response to Comments on the Eligibility of Waste Listed for the Toxicity Characteristic

EPA does not agree that wastes listed solely for the toxicity characteristic (TC) should be eligible for the exclusion. As we discussed in the 1995 HWIR proposal, wastes may still pose some risk concerns even when TC constituents are present below TC levels (60 FR 66369, December 21, 1995).

The hazards that the TC regulation addresses, carcinogenicity and chronic chemical toxicity via contaminated groundwater/drinking water, have fewer clear thresholds than the other characteristics. Wastes that exhibit the characteristics of ignitability, corrosivity or reactivity typically pose acute hazards which can be addressed by application of appropriate treatment to decharacterize the waste. For example, ignitable liquid waste or waste chemical oxidizers can be treated by combustion, and the ash treatment residue poses no ignitability threat to landfills. Similarly, strong acid or basic wastes, if effectively neutralized, generate residues that pose no threat of skin damage. Waste explosives or highly reactive chemicals that are denatured or reacted-out under controlled conditions also generate residues that pose no explosion or reaction threat.

The TC chemicals have less clear thresholds below which they pose little or no hazard for several reasons. Toxic chemicals pose a risk that is typically dependent on a range of factors, and assessment of hazard from toxicity is much more complex, and involves many more variables, than assessment of hazard from the other three characteristics. A waste that does not exhibit the toxicity characteristic for a particular chemical may nonetheless pose a substantial hazard depending on such factors as the volume of the waste, the exposure route being assessed, and the amount of dilution and attenuation that is assumed prior to exposure. These factors, along with others, are taken into account in making hazardous waste listing determinations based on toxicity. See 40 CFR 261.11((a)(3). In addition, as persistent chemicals move through the environment, they can accumulate, posing long-term chronic risks even at levels below those set for the toxicity characteristic. Thus, the toxicity characteristic is not designed to capture all of the wastes that might present a substantial hazard for the TC constituents. Rather, the TC is designed to capture wastes that may pose a substantial hazard, without the need to conduct a waste-specific risk assessment. In fact, when EPA promulgated the TC regulation, we stated that the regulation is intended to identify ''* * * broad classes of wastes which are clearly hazardous * * *''. We also noted that ''wastes that do not exhibit the hazardous waste characteristics are not necessarily non-hazardous.'' (55 FR 11799, March 29, 1990). In identifying TC hazardous wastes as ''clearly hazardous'' the agency was identifying a universe of wastes that it believed may pose high enough risk so as to *always* require classification as hazardous. In noting that non-TC wastes are not necessarily non-hazardous, the agency both recognized the non-threshold (i.e., continuous) nature of TC constituent risks, and recognized that wastes falling just below the TC values may pose risks that are just below a ''clearly hazardous'' designation, and which may sometimes warrant classification as hazardous. EPA has in fact listed wastes based on toxicity where the waste did not fail the TCLP for the constituent of concern. (see, for example, the final petroleum waste listing, 63 FR 42154 (August 6, 1998)).

EPA's decision to not exclude wastes listed solely for the TC could potentially affect the regulation of certain inorganic wastes that EPA has recently proposed

to list as hazardous. (65 FR 55684, September 14, 2000). The issue had been purely theoretical before that point because no waste had ever been listed for the TC. In the inorganics listing determination proposal, however, EPA proposed to list baghouse filters from antimony oxide production for the TC. Despite the fact these wastes fail the TC for lead and arsenic, they are not always being managed as Subtitle C hazardous waste, nor are these wastes always treated to the appropriate LDR standards. By listing them, we would clarify their regulatory status. In the preamble to the inorganics listing proposal, EPA noted that proposed revisions to the mixture and derived-from rules did not include an exclusion for wastes listed for the TC (65 FR 55705). EPA did not receive any public comments in response to this discussion in the Inorganics Listing proposal.

B. Toxicity of Wastes Listed for Ignitability, Corrosivity, and/or Reactivity

(1) Comments on Toxicity of Wastes Listed for Ignitability, Corrosivity, and/or Reactivity

EPA received two comments in response to the 1999 proposal concerning the potential toxicity of waste under the proposed expanded exclusion to the mixture and derived-from rules. One was from a waste management association and one from a State agency. A summary of the specific issues raised by commenters is provided below.

The commenters believed that EPA must evaluate the properties carefully, especially the toxicity, of the 29 compounds proposed to be excluded. They assert that some of these wastes are acutely hazardous and merit a thorough review to ensure that the exclusion is appropriate. The waste management association noted that EPA had not performed an evaluation of the negative environmental impact associated with eliminating these codes. Ignitable, corrosive, and reactive wastes could contain substantial levels of toxic constituents that could be low enough not to exhibit a characteristic of ignitability, corrosivity or reactivity, yet high enough to cause environmental damage. One damage case or Superfund site can cause damages far in excess of the $4.6 million estimated savings predicted by EPA. The waste management association further argued that EPA's Hazardous Waste Characteristics Scoping Study (Nov. 15, 1996) identified numerous gaps in the current RCRA identification of characteristic wastes. The commenter believed that gaps were so serious that EPA should not be proposing to eliminate any listing that was based on a characteristic until the deficiencies identified in the 1996 Scoping Study were addressed fully. Also, EPA must not eliminate any listing once the characteristic is removed, because the underlying hazardous constituent still represents a substantial threat even after LDR treatment.

(2) EPA Response to Comments on Toxicity of Wastes Listed for Ignitability, Corrosivity, and/or Reactivity

EPA continues to believe that wastes that were listed only for the characteristics of ignitability, corrosivity, and reactivity should become excluded once they no longer exhibit any characteristic, including the toxicity characteristic. While it is true that these wastes could contain constituents that were not considered in the original listing determination, EPA does not believe this possibility, without information demonstrating some particularized basis for concern, warrants continued regulation of the waste under Subtitle C once it is decharacterized. This is because of the unique nature of listings based on the three characteristics in question. (See the discussion, in Section VIII.A. above, regarding the differences between wastes listed for the toxicity characteristic and wastes listed for the characteristics of ignitability, corrosivity and reactivity). These listings are unlike toxicity-based listings, which involve development of detailed risk assessments and consideration of a range of technical factors. See 40 CFR 261.11(a)(3). In contrast, the basis for listings based on one of these characteristics is simply that the waste exhibits the relevant characteristic (see 40 CFR 261.11(a)(1)).

Listings that are based on 40 CFR 261.11(a) criteria increase the clarity and certainty of the applicability of the Subtitle C system to these wastes. By listing the waste, EPA clarifies that it is hazardous without the need for a site-by-site demonstration that the waste in fact exhibits the characteristic, thereby simplifying implementation and enforcement regarding these wastes. EPA does not believe these listings should alter the basic principle that a characteristic waste should not be regulated as hazardous if it no longer exhibits the characteristic. Consistent with this approach, EPA provided in 1981 an exemption from the mixture rule for wastes listed for one of these characteristics that no longer exhibits the characteristic (see 46 FR 56582, November 17, 1981). Today's rule provides a conforming change to the derived-from rule, which, because the 1981 rule only focused on mixtures, does not currently contain a comparable exemption. (see 60 FR 66349, December 21, 1995). The same rationale also supports the inclusion of as-generated waste in today's rule (although, since these wastes were listed solely on the basis of exhibiting a characteristic, EPA expects these wastes to exhibit the characteristic at the point of generation). Thus, EPA does not believe that the possibility that these wastes may contain additional hazardous constituents not considered in the original listing justifies continued regulation of the waste.

As stated earlier, EPA already excludes mixtures of these kinds of wastes, once the basis for listing these wastes has been removed. In addition, unlisted characteristic waste becomes non-hazardous when it ceases to be characteristic. Expanding the exclusion to non-mixtures that similarly do not exhibit the characteristic (particularly treatment residuals) would still be protective of human health and the environment. If there is any information that indicates that the original listing determination should have been based on toxicity risks, then the proper remedy is to amend the basis for listing the waste . The public can petition EPA to reconsider the basis for listing any such waste .

In regard to the toxicity of the listed chemicals themselves, EPA has examined the most recent toxicity data in IRIS concerning the chemicals in the 29 wastes listed solely for a characteristic, and does not believe these chemicals present a particular basis for concern. We found that fourteen of the chemicals have RfD's or RfC's available in IRIS. (This includes the eight F003 solvents discussed below—see Section VIII.C. of the preamble). EPA used these RfCs and RfDs to calculate conservative screening-level health-based numbers (HBN) for those chemicals, and compared them to the relevant Universal Treatment Standards (UTS) these chemicals would need to meet under Land Disposal Restrictions, in those cases in which numerical standards were available. For most of those chemicals, the relevant UTS standards are much *lower* than the conservative health-based numbers calculated for water and soil ingestion pathways. As discussed in Section VIII.C below, the level for one of the chemicals, n-butyl alcohol, is not significantly higher. Therefore EPA believes that excluding wastes that have

been listed solely for a characteristic of ignitability, corrosivity, or reactivity, when they have been decharacterized (i.e., exhibit none of the four hazardous waste characteristics), is protective of human health and the environment. However, in the future, if additional information becomes available, we may decide to reconsider the basis of listing for one or more of these wastes.

C. Eligibility of F003 Solvents for This Exclusion

(1) Comments on Eligibility of F003 Solvents for This Exclusion

EPA received comments from 17 commenters in response to the 1995 and 1999 proposals concerning the inclusion of F003 solvents in the expanded exclusion to the mixture and derived-from rules. Of those comments, five were from State Agencies, three were from utility companies or associations, four were from industries, two were from Federal Agencies, two were from waste management associations, and one was from an industry association. A summary of the specific issues raised by commenters is provided below.

About two-thirds of the commenters supported including F003 wastes in the proposed exclusion. However, one industry noted that this proposed revision would have little effect beyond eliminating the derived-from rule for a small number of wastes. Many commenters noted that if the solvent contained, before use, one or more of the toxic solvents specifically listed in F001, F002, F004, or F005, at 10 percent or more by volume, it would be regulated as that waste code. Therefore a blanket exclusion for all categories of F003 is appropriate because toxics, when present, will be addressed under other applicable waste codes. One State and two Federal commenters stated that any toxic solvents contained in an F003 spent solvent blend would not escape proper treatment because of the land disposal restrictions (LDR) program. They also noted that solvent mixtures/blends meeting the F003 listing description and containing a certain percentage of toxic solvents also will carry the waste code F001, F002, F004 and/or F005 and therefore, be subject to treatment requirements under the LDR program.

Four commenters did not support including F003 in the proposed exclusion. They argued that the listing description for F003 contains a reference to other solvent wastes (F001, F002, F004, or F005) that are listed for toxicity. Therefore, ignitability was not the only characteristic of concern. In addition, certain F003 solvents themselves may also be toxic, upon consideration of new data developed since 1985. Specifically, the commenter cited a National Toxicology Program, National Institutes of Environmental Health Sciences, Management Statistics Report dated January, 1999 on the carcinogenicity of ethylbenzene (an F003 waste).

In addition, one State noted that in the April 30, 1992 proposal to revise the Hazardous Waste Identification Rule, EPA was considering a separate rulemaking to modify the basis for listing F003 and other wastes listed solely for a characteristic because of concerns about toxicity and/or carcinogenicity. If the chemicals in these wastes are either toxic or carcinogenic according to EPA's own determinations, they should be identified as such in 40 CFR part 261, subpart D.

Commenters also argued that F003 wastes ''often'' contain toxic constituents other than the solvents themselves. One commenter noted that EPA states in 50 FR 53317 (December 31, 1985) ''In fact, solvents become spent when they have become contaminated with other materials, (i.e., heavy metals or toxic organic compounds) and must be disposed, reprocessed or reclaimed.'' EPA further states '' * * * since spent solvents reasonably are likely to contain other toxicants at levels of regulatory concern, and since we have not evaluated those wastes for these toxicants, we believe it inappropriate to remove these solvents from the hazardous waste list.'' In addition, the waste management association commenter argued that as part of the economic impact analysis associated with the 1999 HWIR proposal, there have been 51 different hazardous constituents associated with the F003 waste code. The commenter believed that if EPA lacked toxicological data on any of these constituents, then F003 could not be eligible for the exclusion once the ignitability characteristic was removed and the waste exhibited no other hazardous waste characteristics.

(2) Response to Comments on Eligibility of F003 Solvents for This Exclusion

EPA agrees with those comments that support F003 waste remaining eligible for this exclusion. Because F003 waste that contains 10% or more of the other F-listed solvents (F001, F002, F004, and F005) would also bear those waste codes, such wastes would not be eligible for the exclusion. The exclusions applies only to F003 wastes that do not contain 10% or more of these other solvents.

EPA is aware of the recent carcinogenicity study (referenced in the public comments) that was performed by the National Toxicology Program on ethylbenzene. Ethylbenzene is included in the Agency's on-going Integrated Risk Information System (IRIS) project (63 FR 68285, December 10, 1998). A focus of the IRIS project is to update selected chemical assessments by incorporating new scientific information and methods. The IRIS project consists of a process that determines the Agency's consensus position on the potential adverse health effects that may result from chronic or lifetime exposures to environmental contaminants. The carcinogenicity study on ethylbenzene, together with any other recent toxicological data, will be evaluated by the Agency as part of this process. Until that evaluation is completed, EPA does not believe it is appropriate to draw regulatory conclusions based on the referenced study.

With respect to the commenters' more generalized concerns about the possibility of toxic constituents in F003 waste, as explained above, EPA does not believe this possibility justifies the continued regulation of a waste that was listed for the sole reason that it is ignitable, where the waste is no longer ignitable and exhibits no other hazardous waste characteristic. F003 waste is unique among the listed solvents: the other listed solvents were listed on the basis of toxicity. F005 solvents were listed for both ignitability and toxicity. In fact, EPA decided to move two listed solvents (methanol and methyl isobutyl ketone) that were originally proposed to be regulated under the F005 listing to the F003 listing because EPA determined that they did not pose a significant toxicity risk, although they are highly flammable (45 FR 74884, November 12, 1980).

Since then, EPA has analyzed the toxicity risks that might be posed by F003 solvents when de-characterized. The Agency has researched the most recent data concerning the F003 solvents in the IRIS data base. None of the solvents in the listing are classified as carcinogens, but eight of the nine possess reference concentrations (RfC) and oral reference doses (RfD) for non-cancer risk. EPA used these RfCs and RfDs to calculate conservative screening-level health-based numbers (HBN) for those chemicals, and compared them to the relevant Universal Treatment Standards (UTS) these chemicals would need to meet under Land Disposal Restrictions. For seven of the eight chemicals (including ethylbenzene) the relevant UTS standards are much *lower* than the

conservative health-based numbers calculated for water and soil ingestion pathways. The health-based number for the remaining chemical, n-butyl alcohol, is only slightly lower than the UTS standard (3.3 mg/L water ingestion HBN vs 5.6 mg/L wastewater UTS).[15] Given the fact that the health-based numbers are conservative screening numbers, EPA does not believe this difference is of concern. Therefore EPA remains confident that excluding ignitable F003 solvents, when they have been decharacterized, is protective of human health and the environment.

Commenters also claimed that F003 solvents, because they are general use solvents, can carry with them various constituents other than the solvents themselves, and that this was a reason for listing the F003 solvents in the first place (see 50 FR 53317, December 31, 1985). EPA acknowledges that in the 1985 solvents final rule, we noted that additional toxic contaminants would likely be present in the spent solvent. We also stated, however, that we did not evaluate F003 wastes for other toxic constituents *that could be present* at levels of regulatory concern. Therefore, toxicity was a not a basis for listing F003 waste.

When the F003 listing was finalized in 1985, because it was listed solely for ignitability, mixtures of F003 waste and solid waste were eligible for the exemption for mixtures of waste listed for a characteristic that no longer exhibit any characteristic of hazardous waste. Expanding the exclusion to non-mixtures that similarly do not exhibit any characteristic would still be protective of human health and the environment. We do not think it makes sense to continue the anomaly of retaining regulation for non-mixtures of F003 wastes based on toxicity concerns when we have no record basis to support regulation for toxicity. Today's exclusion is also consistent with the approach taken in EPA's decision not to list 14 spent solvent wastes, in which EPA declined to focus on any toxic constituents other than those in the solvents themselves, despite the likelihood of other toxic constituents in the spent solvent waste. (63 FR 64372 (Nov. 19, 1998).[16]

[15] For the water ingestion pathway, EPA assumed a 71.8 kg adult with a 2.3 L/day intake (90th percentile), 350 days/yr frequency. For the soil ingestion pathway, EPA assumed a 16.6 kg child with 400 mg/day intake (upper percentile), 350 days/yr frequency. For more information, please see U.S. EPA *Analysis of Chemicals in Wastes Listed for Ignitability, Corrosivity, or Reactivity* memorandum to the docket from David Cozzie, Office of Solid Waste, November 22, 2000.

[16] EPA's determination was upheld at *EDF* v. *EPA,* 210 F.3d 396 (D.C. Cir. 2000).

D. Applicability of Land Disposal Restrictions (LDRs) to Excluded Wastes

(1) Comments on Applicability of Land Disposal Restrictions (LDRs) to Excluded Wastes

EPA received comments from 20 commenters in response to both the 1995 and the 1999 proposals concerning the applicability of LDRs to excluded wastes. Of those comments, eight were received from industries, four were from industry associations, two were from Federal Government Agencies, two were from State Agencies, one was from a consultant, one was from a waste management association, one was from a waste management company, and one was from an individual commenter. A summary of the specific issues raised by commenters is provided below.

Several commenters supported the EPA's proposed revision to the mixture and derived-from rules provided that the excluded waste meets land disposal restriction (LDR) requirements. One industry association noted that LDR standards assure that the waste is well treated. One State Agency believed that having similar wastestreams comply with the same requirements will achieve regulatory consistency as well as protection of human health and the environment.

Several commenters supported EPA's proposed revisions to the rules but did not support meeting LDR requirements. One industry commenter stated that applying LDRs to a waste which is excluded because it no longer meets the hazardous waste criteria is unnecessarily burdensome, costly and is a contradiction of the RCRA program requirements.

Two commenters said that the applicability of LDRs to both wastewater and nonwastewater forms of wastes should be both clear and identical. They felt that there is no justification for managing these wastes inconsistently.

Several of the comments dealt with whether excluded waste would need to be treated to meet LDR treatment standards for all underlying hazardous constituents (UHCs) under the existing rules. They felt that EPA should clarify that it did not intend to revise application of the current LDR rules without any discussion of why such a change would be necessary. One commenter emphasized that EPA has not provided a compelling case for requiring testing for UHCs or a clear methodology for implementing the requirements that are proposed. They stated that since these wastes are listed, generators have not been required to obtain information on underlying hazardous constituents. Obtaining this information would pose an undue burden for the generator, and they requested clarification on who would be responsible for verifying whether the waste in question meets the condition of the exclusion: the generator or the facility receiving the excluded waste.

Two industry association commenters referenced the Land Disposal Program Flexibility Act of 1996 (LDPFA) and its relationship to the proposed exclusion. Under LDPFA, solid wastes identified as hazardous based solely on a characteristic, are not prohibited wastes under the Land Disposal Restrictions program if they are managed in certain systems including a treatment system that subsequently discharges into waters of the United States pursuant to a CWA permit. The commenters further requested that EPA revise its proposed language modifying the mixture rule for wastes in proposed 40 CFR 261.3(a)(2)(ii) so that the land disposal restrictions program does not apply to wastes that are not prohibited. They argued that this revision is crucial to maintain the status quo for managing wastes listed solely for a characteristic in land-based units. Imposing the LDR program on such wastes would put many surface impoundments out of compliance because they are managing decharacterized listed wastes in land-based units that do not meet RCRA's minimum technology requirements.

(2) EPA Response to Comments on Applicability of Land Disposal Restrictions (LDRs) to Excluded Wastes

In proposing to expand the current exclusion for waste listed solely for a characteristic, EPA did not intend to change the way land disposal restrictions (LDRs) apply to the excluded waste. EPA agrees with those comments that support the continued application of LDR requirements to mixture and derived-from wastes listed solely for a characteristic of ignitability, corrosivity, or reactivity after they have become excluded. We are not imposing any new LDR requirements in this rule.

We agree that the treatment standards for UHC's do not apply in all cases, and have not changed the applicability of these requirements. In general, wastes that are both listed as hazardous waste and exhibit a characteristic only need to meet the treatment standard for the listed waste code. (40 CFR 268.9(b)). An exception occurs when the treatment standard for the listed waste code does not include a standard for the constituent that causes the waste to exhibit the characteristic. In this case, the waste must meet the treatment standards for all applicable listed and characteristic waste codes.

EPA disagrees with the comment that LDRs for wastewaters and nonwastewaters should be identical. We continue to support the existing different treatment standards for wastewaters and nonwastewaters. Such differences are based on waste treatability and differences in the Best Demonstrated Available Technology applicable to the waste.

Today's rule also does not broaden the applicability of LDRs. The revised language to 40 CFR 261.3 (g)(3) states, ''Wastes excluded under this section are still subject to part 268 of this chapter (as applicable), even if they no longer exhibit a characteristic at the point of land disposal.'' When the requirements of 40 CFR part 268 would not otherwise apply to a waste (for example, during treatment of certain characteristic wastes in a land-based unit), today's rule does not change that fact. In the case of wastes listed solely for ignitability, corrosivity, and reactivity that do not exhibit a characteristic at the point of generation, these wastes are considered to never have been hazardous and are not subject to 40 CFR part 268.

E. Applicability of Contained-In Policy to Excluded Wastes

1. Comment on Applicability of Contained-In Policy to Excluded Wastes

One commenter, the Department of Defense (DoD), requested that EPA clarify the interaction of the contained-in policy to the RCRA wastes that are listed solely for ignitability, corrosivity, and/or reactivity characteristics.

2. EPA Response to Comment on Applicability of Contained-In Policy to Excluded Wastes

The contained-in principle is the basis for EPA's longstanding interpretation regarding application of RCRA Subtitle C requirements to mixtures of contaminated media and hazardous wastes. Under the ''contained-in'' policy, EPA requires that soil (and other environmental media) be managed as hazardous wastes so long as they contain listed hazardous waste or exhibit a characteristic of hazardous waste. EPA's application of the ''contained-in'' policy to regulate media containing hazardous waste was upheld by the D.C. Circuit Court of Appeals in *Chemical Waste Management* v. *EPA,* 869 F2d 1526, 1539–40 (D.C. Cir. 1989). See the LDR Phase IV final rule 63 FR 28556, 28621 (May 26, 1998) for a detailed discussion of the contained-in policy and the Agency's reason, at the time, not to codify the contained-in policy for contaminated soil.

Today's final rule does not directly affect the implementation of the contained-in policy. However, wastes that are contained in contaminated media are eligible for the 40 CFR 261.3(g) exemption for wastes listed solely for a characteristic. Therefore, under today's final rule, contaminated media that contain a waste listed solely for a characteristic would no longer need to be managed as hazardous waste when it no longer exhibits a characteristic. However, consistent with the regulation of other decharacterized waste (and decharacterized contaminated media), it may remain subject to LDR requirements. (The final rule, by providing that wastes excluded under this section are subject to LDRs ''as applicable,'' applies the current rules regarding LDR applicability to soil containing hazardous waste. See, 40 CFR 268.49. For a detailed discussion of this subject, see 63 FR 28556, 28617 (May 26, 1998).)

IX. What Were the Major Comments on the Revision to 40 CFR 261.3 for Mixed Wastes, and How Has EPA Responded to Them?

A. 1999 Proposed Revision to 40 CFR 261.3 for Mixed Waste

In the 1999 proposal, EPA proposed a change to 40 CFR 261.3 that would exclude certain eligible mixed wastes (i.e., wastes that are both hazardous and radioactive) when they met the conditions outlined in the proposed 40 CFR part 266, Subpart N, which appeared in a separate Federal Register Notice. 64 FR 63464 (Nov. 19, 1999). EPA received comments from nine commenters in response to the 1999 HWIR proposal concerning the conditional exclusion from the mixture and derived-from rules for mixed waste. The commenters supported EPA's proposed conditional exemptions for low-level mixed waste (LLMW). Many of these commenters believed that such an exemption was implicit in the mixed waste proposal and necessary for the proposed mixed waste conditional exemptions to function effectively. Many of these commenters also noted that EPA's proposal would help eliminate much of the current regulatory overlap associated with LLMW. One commenter added that since the implementation of LLMW management under RCRA, it had been difficult to find treatment/disposal capacity for its limited quantities of mixed waste, and the proposal would improve safety, efficiency, cost and timeliness of LLMW management. Several commenters encouraged EPA to expedite its implementation.

However, two commenters (both Federal agencies) were concerned with the proposed regulatory language for implementing a conditional exemption from the mixture and derived-from rules for mixed waste. The commenters believed it would be more appropriate to pursue regulatory relief for low-level mixed waste (LLMW) via the standards proposed for 40 CFR part 266, Subpart N rather than within the definition of hazardous waste in 40 CFR 261.3. This proposed exemption within 40 CFR 261.3 would provide an inconsistency in the application of the MDF rules between wastes mixed with or derived-from the treatment of hazardous wastes and wastes mixed with or derived-from the treatment of LLMWs. The commenters noted that the proposed regulation for the transportation/disposal conditional exemption for mixed waste, section 266.305, exempts the waste from certain RCRA requirements (provided specified conditions are met), but does not exempt the waste from the definition of hazardous waste.

EPA appreciates the support expressed for the conditional exemption for mixed waste mixtures and derived-from wastes. In response to the apparent confusion about how the proposed regulatory language applies to these conditionally exempt mixed wastes, EPA has created a new section to 40 CFR 261.3, section (h), which more carefully explains how the definition of hazardous waste interacts with the mixed waste conditional exemption.

B. 1995 Comments on Conditional Exemptions for Mixed Waste

In EPA's 1995 HWIR proposal, we included a discussion of possible conditional exemptions for mixed wastes based on EPA's HWIR modeling, or on other conditions outlined in a proposal developed by the Department of Energy (DOE). EPA received comments from 45 commenters regarding this discussion, many of whom urged EPA to separate mixed waste from the HWIR rulemaking. DOE has since withdrawn its proposal, and EPA has developed a separate mixed waste exemption, which is published elsewhere in today's **Federal Register**. For a more detailed explanation of all the mixed waste comments submitted as part of the HWIR rulemakings, and EPA's response to those comments please see *Hazardous Waste Identification Rule: Revisions to the Mixture and Derived-From Rules Response to Comments Document.*

X. What Were the Major Comments on the Recommendations Submitted by the Chemical Manufacturers Association (CMA), and How Has EPA Responded to Them?

In August 1999, EPA received a paper from the Chemical Manufacturers Association (CMA) [17] describing five regulatory options for revising the mixture and derived-from rules. CMA forwarded these options seeking regulatory relief for some specific high-volume wastes that they believe are low-risk and feel that EPA could propose to exclude with very little delay. Although we did not have sufficient time to analyze these options in detail, we included a discussion of them in the 1999 HWIR notice to allow for public comment. Below is a short description of each option, a summary of the comments on the option, and EPA's response to the comments.

EPA is currently developing proposals related to two of the suggestions that we believe to be the most promising and straightforward to address: expanding the current headworks exclusion and excluding certain combustion residues. (see Sections X.A. and X.D. respectively). We are also considering additional proposals on the other suggestions, but we believe more analysis would first be necessary to decide how to address specific issues raised in the public comments. In addition, we will consider whether other opportunities exist for exempting low-risk waste from full Subtitle C regulation, including additional targeted exemptions and efforts to streamline the delisting program.

A. Expanding the Current Headworks Exclusion

One option involves an expansion of the current ''headworks'' exclusion in 40 CFR 261.3(a)(2)(iv)(A) and (B). The headworks exclusion excludes from the mixture rule wastewaters containing small quantities of particular F-listed solvents, based on the mass-balance flow of these solvents through the headworks of industrial wastewater treatment systems. CMA's options paper requests that this exclusion be amended in three ways.

First, CMA's suggested revision would allow direct monitoring of the actual concentration of spent solvents in untreated wastewater to demonstrate compliance. The current requirement is to perform a weekly mass balance of the solvents entering the system. Losses due to volatilization must be counted in the mass balance determination under the current system. We note that CMA's suggested wastewater monitoring would provide accurate data at the point the wastewater enters the treatment system, but the losses due to volatilization would not be counted in this approach.

Second, under CMA's suggested revisions, benzene, 2-ethoxyethanol, 2-nitropropane, and 1,1,2-trichloroethane would be incorporated into the list of chemicals for exclusion. These four chemicals were added to the 40 CFR 261.31 list of spent solvents in 1986 but the exclusion does not currently include these chemicals.

Third, under CMA's suggested revisions, multi-source leachate (F039) derived solely from the disposal of the spent solvents listed in 40 CFR 261.31 would be eligible for the exclusion.

(1) Summary of Comments on Expanding Headworks Exclusion

EPA received comments from 13 commenters in response to the discussion on expanding the headworks exclusion. Of those comments, two were received from industry, three were from industry associations, three were from utility companies or utility company associations, three were from State Agencies, one was from a Federal Government Agency, and one was from a waste management association. A summary of the specific issues raised by the commenters is provided below.

One state commenter noted that CMAS's suggested exclusion does not account for volatilization, an important factor considering the solvents involved, if the wastewater treatment system is not actually subject to Clean Air Act controls. In addition, they noted that CMA's suggested exclusion addresses whether and how RCRA should be modified in the wastewater treatment context, and they felt that this is a matter that could be addressed comprehensively following the completion of the surface impoundment study.[18] One waste management association commenter stated it was not clear what the potential environmental impact would be of expanding this exclusion to additional chemicals.

The rest of the commenters supported the CMA's recommendations for specific modifications to the mixture rule to expand the headworks exclusion in 40 CFR 261.3(a)(2)(iv)(A) and (B). Commenters noted that subsequent to the original headworks exclusion, additions were made to the F code solvent listings, but the corresponding changes were not made to the list of solvents in the headworks exclusion. For consistency, benezene, 2-ethoxyethanol, 2-nitropropane and 1,1,2-trichloroethane should be added to the list of solvents allowed under the headworks exclusion. One State added that the circumstances and reasoning that EPA used to support finalizing the original exclusion remain valid for these four solvents. Commenters also noted that they believed EPA would determine the appropriate headworks concentration (i.e., either 1 part per million or 25 parts per million). Also, it is appropriate, practical, and economical for a generator to manage small amounts of spent solvent wastes in a wastewater treatment system subject to regulation under sections 402 and 307 (b) of the Clean Water Act.

Nine of the commenters supported the use of direct monitoring of the actual concentration of spent solvents in untreated wastewater to demonstrate compliance with the headworks exclusion. Several commenters believed direct monitoring would facilitate documentation of compliance. A Federal commenter noted that the suggested changes would provide accurate data at the point the wastewater enters the treatment system, but still would allow generators who rarely discharge solvents into their wastewater systems to use the current method for verifying compliance. Several commenters believed that the mass-balance approach gives rise to a number of problems due to the varying degrees of precision in the underlying measurements and, therefore, deters use of this exclusion. Instead, direct sampling and analysis methods are much more straightforward to implement and would provide more accurate information about what actually is being discharged to treatment systems. A State commented that direct monitoring provides the most definitive information on the concentration levels of hazardous constituents in a waste. Direct monitoring would allow generators to apply the exclusion to its full intended regulatory limit. An industry commenter recommended that compliance with the regulatory levels be measured on a rolling average basis since flows may be variable. Several commenters noted that they do not believe that direct monitoring would encourage volatilization. They noted that EPA did not state directly that the current measurement scheme needed to account for volatilization when the headworks exclusion was finalized and it is not part of the current regulatory

[17] CMA has since changed the name of the organization to the American Chemistry Council (ACC).

[18] Note: EPA's surface impoundment study was completed March 2001. See U.S. Environmental Protection Agency. *Industrial Surface Impoundments in the United States.* EPA530–R–01–005. Washington, D.C. March 2001.

language. However, these comments recognized that over the years, EPA has explained in preamble language and interpretive letters that it considered accounting for volatilization losses to be necessary to prevent facilities from volatilizing solvents in order to be eligible for the exclusion. In the years subsequent to the statement, EPA has issued a number of regulations addressing air emissions of organics, including the listed solvents. Because EPA has addressed these potential air emissions by regulations which focus specifically on these emissions, the commenters felt that there is no need for the headworks exclusion to have to account for them as well.

One State commenter did not support the inclusion of multi-source leachate (F039) in the headworks exclusion, even though the leachate might be derived from the disposal of solvent wastes. The commenter noted that leachate might contain any variety of hazardous constituents, due to the presence of characteristic wastes or non-hazardous wastes. The commenter further noted that it would be difficult to determine whether the headworks exclusion, if modified in this manner, would protect human health and the environment sufficiently. The commenter did state that if the discharge is regulated under the Clean Water Act (CWA), this may provide a reasonable amount of assurance with respect to exposure paths, relating to the wastewater discharge.

Six of the commenters supported extending the exclusion to multi-source leachate (F039) derived solely from the disposal of the spent solvents in 40 CFR 261.31. A Federal commenter noted that in many cases, leachate is contaminated with barely detectable concentrations of F-listed solvents, yet the leachate still is classified as hazardous waste. By allowing the wastewater to be discharged for treatment to a wastewater treatment or pre-treatment system regulated under the CWA, EPA would encourage remediation by lowering treatment costs. The commenter also stated that EPA must believe that the 1 ppm/25 ppm concentration limits established under the existing rules are protective of human health and the environment, so extending those limits to wastes derived from the land disposal of certain listed solvents should be adequately protective.

Several commenters noted that the advent of the multi-source leachate waste code simplified some hazardous waste management by applying the single listing code to hazardous waste leachate. However, this streamlining did create some unintended consequences. Leachate generated solely from F001–F005 solvents no longer qualified for the headworks exclusion, even though the composition of the leachate was virtually identical to dilute non-leachate F001–F005 streams. Therefore, even though F039 leachate derived solely from F001–F005 wastes are exactly the same in chemical composition as the wastes from which they are derived, they cannot be treated in the same treatment train. They must be segregated and handled in separate tank-based systems or shipped off site for treatment and disposal causing additional cost but providing no additional environmental protection. One industry commenter recommended that EPA issue a technical correction or clarification notice with or before promulgating the final HWIR rule to address this problem. Under CMA's recommendation, the headworks exclusion rationale for the solvent wastes from ongoing production processes would be applied equally to solvent wastes leaching from a landfill. Both are treated equally well in the wastewater treatment plant at these low concentrations, so there is no justification for regulating them differently.

(2) EPA Response to Comments on Expanding the Headworks Exclusion

EPA agrees that there is merit in proposing to expand the current exclusions in 40 CFR 261.3(a)(2)(iv)(A) and (B) (the ''headworks'' exclusion) to include the four solvents listed in 1986: benzene, 2-nitropropane, 2-ethoxyethanol, and 1,1,2-trichloroethane, and we are currently developing a proposal on such an expansion. In the proposal, EPA will take into account the issues raised by the commenters, including environmental impacts of the expanded exclusion, and the use of any available surface impoundment study data. In the meantime, we welcome any data or additional feedback from the public on this topic.

We will also evaluate in this proposal the issue of measurement versus mass balance calculation as a part of the implementation of the headworks rule. EPA agrees that in the past 20 years, significant new Clean Air Act regulations have come into effect that may address some of the concerns about deliberate volatilization. In developing a proposed revision to the monitoring requirements for the headworks rule, we would take into account the issue raised by the commenters, including the issues concerning volatilization. We welcome any additional data the public has to support such a change.

EPA is also interested in possible applications in which solvent-only landfill leachate may be sent to a wastewater treatment facility. We are concerned, however, about possible difficulties in determining whether a landfill has received only solvent wastes. As part of the investigation, EPA would need more information characterizing possible ''solvent waste only'' landfills. We welcome any additional data the public has on these landfills.

B. Excluding Hazardous Waste Leachate

Another of the suggested regulatory options involves leachate derived from the land disposal of listed hazardous waste which is subsequently managed in a system regulated under the Clean Water Act. CMA argues that the leachate is both physically and chemically dissimilar from the wastes that were originally listed. Under the option presented, leachate would not be hazardous, even when generated from the treatment, storage or disposal of hazardous waste, unless it exhibited one or more of the hazardous waste characteristics of 40 CFR Part 261, Subpart C.

(1) Comments on Excluding Hazardous Waste Leachate

EPA received comments from eight commenters in response to excluding leachate. Of those comments, three were received from industries, one was from an industry association, three were from State Agencies, and one was from a waste management association. A summary of the specific issues raised by commenters is provided below.

The waste management association did not support the exclusion, noting that treatment tanks that are part of a Clean Water Act (CWA) system already are conditionally exempt. Thus, it was not clear to the commenter why a more expansive exclusion was advisable, particularly because leachate from hazardous wastes ''may often contain toxic constituents that are not subject to NPDES discharge limits or water quality standards.'' Also, one State did not support the exclusion noting that many organics of concern are not covered by the toxicity characteristic. Furthermore, the State commenter believed that it would be inappropriate to exclude these wastestreams without examining the results of the surface impoundment study, particularly without any supporting data on the physical/chemical properties of the leachate and its associated risks. Finally, these State comments claimed that there is no generic way to tell if these leachates will pose a problem. They could be very

different from unit to unit depending upon what type of waste has been placed in the unit. The commenter also felt that there could be an air emission problem or the leachate could cause the sludge to become hazardous. Instead, the State commenter thought industries should go through a case specific delisting for these wastes.

One State commenter did not understand CMA's proposal to exclude leachate from the derived-from rule. Currently, F039 leachate waste is subject to Part 268 land disposal restriction requirements and could be treated onsite in a tank or container within 90 days of generation without a permit. If this treated waste was an industrial wastewater discharge that was a point source discharge subject to regulation under section 402 of the Clean Water Act, it would be eligible for the 261.4(a)(2) exclusion. In that case the wastewater would not be a solid waste. The State wondered if CMA was proposing that F039 be exempt from LDR requirements. If that was the case, the State did not support such a recommendation.

One State commenter stated that there may be merit in excluding leachate resulting from the land disposal of a listed hazardous waste when the leachate is subsequently managed in a wastewater treatment system regulated under the CWA. However, to make a definitive decision, the State expressed a need to evaluate constituent concentration data, current management practices, environmental injury cases caused by the residues, and whether the residues commonly exhibit a hazardous waste characteristic. Since (1) the leachate is generated from landfills where only treated hazardous wastes are disposed, and (2) bonafide treatment has occurred and the residues are physically and/or chemically different from the hazardous wastes they were generated from, the State believed it was appropriate to view the residues as newly generated wastes and impose RCRA regulation only if the waste exhibited a hazardous waste characteristic.

The rest of the commenters believed that EPA should consider leachate from hazardous waste landfills to be a newly generated waste rather than derived-from waste. As a newly generated waste, it would be subject to regulation if it failed one or more hazardous waste characteristics, but would no longer be subject to hazardous waste regulation solely because the landfill accepted listed hazardous wastes. Several commenters noted that most POTWs would not accept direct discharges of listed hazardous waste, even if the leachate met all applicable effluent guidelines and other standards. As a result, several commenters noted that they must use costly and unnecessary incineration or other treatment at off-site facilities. In addition, the transportation and management from sending the wastes off-site actually may increase environmental risks and energy usage relative to the protective and cost-effective management in industrial wastewater systems. Several commenters noted that both landfills and land treatment units, as defined by RCRA, generate a leachate when constructed with a bottom liner. Leachate from either type of unit should qualify for the exclusion so long as it did not fail for a hazardous characteristic and the wastewater treatment system receiving the leachate was subject to regulation under the CWA. Two commenters also recommended as an alternative to considering leachate from hazardous waste landfills to be a newly generated waste, that EPA make it eligible for the headworks exclusion.

(2) EPA Response to Comments on Excluding Hazardous Waste Leachate

At this time, EPA is still considering the suggested regulatory exclusion for leachate derived-from landfilled hazardous waste as well as other specific exemption options, but we first need to evaluate several important issues. As noted in the comments, most hazardous waste leachate is regulated under a separate waste code, F039. To date, we have received no information that would cause us to reconsider that listing, although we would welcome any data that might be helpful in such a re-evaluation. However, in the most recent EPA study of landfill leachate characteristics (65 FR 3007, January 19, 2000), we found considerable differences between the leachate samples from hazardous and those from non-hazardous landfills in both numbers of constituents of concern and their concentrations. Hazardous waste landfill leachate contained a greater number of constituents than non-hazardous waste landfill leachate, and constituents found in both hazardous and non-hazardous waste landfill leachate were generally present in hazardous waste landfill leachate at concentrations an order of magnitude higher than those found in non-hazardous waste landfill leachate.[19] As noted in the comments, these pollutants can include many organic hazardous constituents not covered by the Toxicity Characteristic. Absent a risk assessment, it is not possible to determine whether the levels of these constituents pose unacceptable risk. However, the presence of these constituents is a strong indication that more study would be needed before developing an exemption for hazardous waste leachate.

C. Excluding Hazardous Waste Aggressive Biological Treatment Residues

Another suggested regulatory option involves excluding residues from the biological treatment of listed hazardous wastewaters. CMA argues that theses wastes are both physically and chemically dissimilar from the wastes that were originally listed. In addition, CMA notes that biological treatment can greatly reduce or eliminate organic chemicals. Under the options presented in CMA's discussion papers, these wastes would not be hazardous, even though they are generated from the treatment, storage or disposal of hazardous waste, unless they exhibit one or more of the hazardous waste characteristics of Subpart C of 40 CFR part 261.

(1) Comments on Excluding Residues From Aggressive Biological Treatment of Hazardous Waste

EPA received comments from 10 commenters in response to the CMA recommendation to exclude aggressive biological treatment residues from the derived-from rule. Of those comments, four were received from industries, two were from industry associations, three were from State Agencies, and one was from a waste management association. A summary of the specific issues raised by commenters is provided below.

The waste management association did not support excluding sludges derived from the biological treatment of listed hazardous wastes. The commenter noted that the sludges typically contain concentrations of heavy metals that warrant further treatment and Subtitle C disposal. EPA's listing background document for F006 electroplating sludges, for example, provides data on the presence of lead, cadmium, chromium and other toxic metals in such wastewater treatment sludges.

Two States did not support the exclusion, noting that these sludges can continue to pose a threat to human health and the environment and should continue to be subject to the derived-from rule. The States also believed that these wastes should meet land disposal restriction (LDR) treatment standards, just as any other listed hazardous waste

[19] Development Document for Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category, EPA–821–R–99–019, U.S. EPA, January 2000.

is required to meet a treatment standard before being disposed in a permitted Subtitle C facility. One State noted that EPA proposed the retention of the mixture and derived-from rules in part because of the potential toxicity of wastewater treatment sludges. (See 64 FR 63389, November 19, 1999).

One State commenter noted that there may be merit in excluding aggressive biological treatment residues. However, to make a definitive decision, the State would need to evaluate constituent concentration data, current management practices, environmental injury cases caused by the residues, and whether the residues commonly exhibit a hazardous waste characteristic. Since wastewater treatment is a bonafide treatment method proven to detoxify or otherwise treat hazardous waste and the residues are physically and/or chemically different from the hazardous wastes they were generated from, the State believed it was appropriate to view the residues as newly generated wastes and impose RCRA regulation only if the waste exhibited a hazardous waste characteristic.

The rest of the commenters supported excluding sludges derived from the biological treatment of listed hazardous wastes. Many commenters noted that industrial biosludges currently are overmanaged as hazardous wastes at a high cost to industry. Several commenters added that residues from biological treatment processes have reduced organic constituent concentrations significantly relative to the original waste. Commenters noted that most listed wastewaters are 99% water and are therefore substantially different in terms of potential for environmental harm than a non-wastewater form of the same waste. Also, residues derived from aggressive biological treatment are fundamentally different (both chemically and physically) from the originally listed wastes and these residues should be considered a new point of generation. One commenter submitted data on the concentration of chemicals in a combined treatment sludge.

Additionally, commenters claimed that in recent hazardous waste listings, EPA has recognized that treatment sludges do not necessarily present any significant environmental hazard even when there is sufficient hazard in the waste as generated to warrant listing by EPA (e.g., wastewater treatment sludges from carbamates, anthraquinone, and chlorinated aliphatics). Commenters also noted that public reporting of these very large volumes of derived-from waste misleads the public over the amount of actual hazardous waste in their communities.

Several commenters believed that there should not be a specific contingent management requirement associated with the excluded biosludge. Rather, the sludge would be subject to state industrial non-hazardous waste RCRA (Subtitle D) programs, including restrictions on industrial non-hazardous waste landfilling, combustion and other management options. Since industrial biosludge resulting from an aggressive biological treatment system is not significantly different from sewage sludge, the commenters expected that any restrictions placed on the use of sewage sludge would likewise apply to excluded sludge.

A few commenters pointed out that the LDR program for characteristic wastes has over the years established new points of generation. The commenters noted that in the LDR program, EPA recognized that various treatment residuals differ from the wastes from which they are derived and should not continue to be regulated as the same wastes. In at least three other situations, EPA has made a specific determination that the generation of wastewater treatment biosludge constitutes a new point of generation, generally on the basis that the wastewater being treated falls into one treatability group and the resultant sludge into another. They are: (1) Sludge from the treatment of U154 contaminated groundwater—The sludge is considered newly generated waste because it is a different treatability group than the wastewater being treated—sludge generated from treating non-ignitable wastewaters not derived from hazardous waste (03/21/96 Berlow, EPA to Day, Bryan Cave, LLP); (2) LDR notification requirements for wastewaters and sludges—LDR requirements apply only to wastes that are hazardous at the point of generation. Non-hazardous sludges removed from a wastewater treatment unit require no LDR notification. The requirement to identify and treat for underlying hazardous constituents (UHCs) is not applicable to wastewaters managed in centralized wastewater treatment systems subject to the CWA or to sludges that are not hazardous at the point of generation (05/01/97 Cotsworth, EPA to Dolce, Award Environmental Inc.); and (3) applicability of land disposal restrictions to tank-based wastewater treatment systems—LDRs do not apply to waste managed in systems that are entirely tank-based; sludge generated from wastewater treatment belongs to a different treatability group, and is therefore a newly generated waste that should be evaluated at the point of generation (03/29/97 Berlow, EPA to Day, Bryan Cave, LLP).

(2) EPA Response to Comments on Excluding Residues From Aggressive Biological Treatment of Hazardous Waste

EPA is considering a tailored exclusion for biological treatment residues, but does not believe that a blanket exclusion from the mixture and derived-from rules is appropriate for such wastes. Not all wastestreams are amenable to biological treatment, and the composition of the residuals generated from biological treatment would vary greatly depending on the influent and on the efficacy of the treatment system.

We have, in the past, determined that biological treatment systems are inappropriate for metals and could result in impermissible dilution under the LDR program.[20] We have also denied a delisting petition for K035 sludges resulting from aerated biological treatment of creosote in a surface impoundment in part because of downgradient groundwater contamination.[21] In addition, we have information that facilities have attempted to avoid generating F037 and F038 wastes by adding minimal aeration to primary treatment units and claiming the sludges from these units as excluded.[22]

However, EPA believes there may be merit to the idea of regulating certain types of biological treatment residues differently. As noted in the comments, we have in the past excluded certain types of biological treatment wastes from regulation (see, for example, 40 CFR 261.3(c)(2)(ii)(D)). There may be other types of waste similarly amenable to biological treatment. Before developing such a regulatory proposal, EPA would first gather and analyze data on biological treatment waste. Therefore, any such data would be welcomed by the Agency.

---

[20] EPA 1990. *LDR Determination of Waste Stream Dilution,* Letter from Jeffery Denit, Deputy Director, Office of Solid Waste to Bruce Smith, Director, Office of Hazardous Waste Programs, EPA Region III, October 14, 1990. [FAXBACK 13414, PPC 9551.1990(06)]

[21] EPA 1987. *K035 Listing and Inclusion of Sludges from Biological Treatment of Creosote Production Wastes,* Letter from Bruce R. Weddle, U.S. EPA, to Jordan Dern, Koppers Company, Inc., December 11, 1987. [FAXBACK 13105, PPC 9444.1987(52)].

[22] U.S. EPA 1991. *Draft Region VIII Policy on ''Aggressive Biological Treatment'',* Letter from Robert L. Duprey, Director, Hazardous Waste Management Division (EPA Region VIII) to Sylvia K. Lowrance, Director, Office of Solid Waste, April 19, 1991 (Ref: 8HWM–RI)

D. Excluding Hazardous Waste Combustion Residues

Another of CMA's suggested options involves excluding residues from the combustion of listed hazardous waste. CMA argues that these wastes are both physically and chemically dissimilar from the wastes that were originally listed. In addition, CMA notes that combustion can virtually eliminate organic chemicals. Under the options presented in CMA's discussion papers, these wastes, which would include combustion ash, slag, air pollution control residue and scrubber water, would not be hazardous, even though they are generated from the treatment, storage or disposal of hazardous waste, unless they exhibit one or more of the hazardous waste characteristics of 40 CFR part 261, Subpart C.

(1) Comments on Excluding Hazardous Waste Combustion Residues

EPA received comments from 15 commenters in response to the CMA recommendation to exclude hazardous waste combustion residues. Of those comments, seven were received from industries, two were from industry associations, four were from State Agencies, one was from a waste management company, and one was from a waste management association. A summary of the specific issues raised by commenters is provided below.

One waste management association and two State commenters did not support excluding combustion residues, noting that there is a great deal of variability in combustion residues. While some organic compounds are destroyed effectively by the combustion process, the residue may contain persistent constituents (e.g., dioxins and metals) that are toxic. Accordingly, while the combustion byproducts may be physically and chemically dissimilar from the listed waste it is derived from, the byproducts have toxic properties that could cause environmental degradation. The commenters believed that relying on the TC by itself fails to provide adequate protection of human health and the environment. The commenters mentioned that not all metals of concern are covered by the TC. They also noted that the TC only measures potential risks via the groundwater pathway, and it is not definitive that groundwater is the driving risk pathway for these wastes. Because the TC approach does not comprehensively evaluate potential risks, wastes that do not exhibit hazardous waste characteristics are not necessarily non-hazardous. In addition, one State commenter believed it was prudent to wait for EPA's anticipated action on proposed combustion residues to address the physical and chemical properties of these wastes before any action is taken on CMA's proposal.

Two State commenters stated that there may be merit in excluding residues from the combustion of listed hazardous wastes. However, to make a definitive decision, one State would need to evaluate constituent concentration data, current management practices, environmental injury cases caused by the residues, and whether the residues commonly exhibit a hazardous waste characteristic. Since bonafide treatment has occurred and the residues are physically and/or chemically different from the hazardous wastes they were generated from, the State believed it was appropriate to view the residues as newly generated wastes and impose RCRA regulation if the waste exhibited a hazardous waste characteristic. Another State commenter believed an exclusion for combustion residues could be appropriate if the combustion takes place in a permitted (not interim status) hazardous waste combustion device; any listed wastes are listed for organic hazardous constituents only; the residual must not exhibit any characteristics; and the residues meet LDRs, including standards for underlying constituents. This approach would protect human health and the environment fully and would allow many combustion residues to exit Subtitle C regulation once LDRs are met.

The rest of the commenters believed that EPA should consider residues from hazardous waste combustion to be a new point of generation. These combustion residuals substantially differ in their physical and chemical makeup from the original listed hazardous wastes from which they are derived. Subtitle C regulation is not needed for such combustion residuals, especially if the residues do not exhibit hazardous characteristics. Instead, the residues can be managed adequately and protectively as industrial non-hazardous waste or discharged under the Clean Water Act. The commenters believed that the high cost of regulating these materials as hazardous waste purchases little or no increased protection of human health and the environment. The hazardous waste combustion process destroys virtually all of the organics in the listed wastes from which these residuals are derived, and the Toxicity Characteristic limits for metals are virtually the same as the health-based limits EPA-established for excluding Bevill wastes from Subtitle C regulation. One commenter submitted information on the operating parameters and limits for their combustion unit and the concentrations of the sludge from incinerator scrubber water generated.

One industry commenter noted that in combustion-related rulemakings, EPA consistently has maintained that well-operated and maintained combustion units can achieve high combustion efficiencies and can be operated in a manner that is protective of human health and the environment. Therefore, the commenter recommended the exclusion be limited to residues from units that continuously monitor stack emissions of CO, and do not exceed a CO level of 100 ppmv measured as an hourly rolling average.

While agreeing with CMA's proposal, one association commenter believed it should be extended to combustion residues from facilities operating pursuant to 40 CFR part 266, subpart F, specifically residues from precious metal reclamation operations. The commenter noted that the recovery of precious metals from hazardous waste is not a TSDF operation, and the units are not permitted under the same CFR sections. The commenter added that precious metal-bearing residues also are environmentally safe for two additional reasons: (1) Precious metal-bearing residues must not exhibit one or more of the characteristics of hazardous waste and (2) the residues must contain economically significant amounts of precious metals (to partake of the authority of 40 CFR 266.100(f)), and thus such wastes will be further reclaimed rather than disposed, ensuring environmentally protective management.

One commenter supported the use of the TCLP extract concentration limits in Appendix VII to 40 CFR part 266 as the criteria for excluding combustion residues. Several commenters also believed that solid residues from hazardous waste combustion units that do not exhibit any toxicity characteristic should be considered industrial non-hazardous waste. As such, the materials would be subject to state industrial non-hazardous waste programs.

(2) EPA Response to Comments on Excluding Hazardous Waste Combustion Residues

EPA is considering a possible exclusion for certain combustion residues, but does not believe that a blanket exclusion from the mixture and derived-from rules is appropriate for such wastes. Although hazardous waste combustors must meet at least 99.99% DRE (destruction and removal efficiency), metals and certain organics may only be transferred to a residue.

The constituents can become significantly concentrated in the residue. EPA does not believe that stack emissions are a reliable measure of the risk posed by the combustion residue; in fact, as technology improves the removal capability of air pollution control devices, the resulting residue will likely have greater concentrations of hazardous constituents and may pose unacceptable risks if mismanaged. In addition, several of the mixture and derived-from waste damage cases that EPA has identified are a result of improper disposal of combustion residues.[23]

In addition, EPA is particularly concerned about the possible formation of dioxins and furans during hazardous waste combustion. In the September 1999 combustion rule, we noted that there is ''a considerable body of evidence'' to show that dioxin and furan compounds can be formed in the post-combustion regions of hazardous waste combustors (see 64 FR 52994). Because of this concern, we have added these dioxin and furan compounds to Appendix VIII of 40 CFR part 266, which lists products of incomplete combustion (PICs) likely to be found in stack effluents.

However, EPA is considering a proposed tailored exclusion for certain combustion residues. For example, EPA is currently developing for public comment a proposed exclusion that focuses on wastes that have been slagged to liquefaction. These slagged wastes are unique because the high temperatures associated with liquefaction (2100°F, typically) appear to eliminate organic chemicals, including PICs, and generate a slagged residue which is a glassy, liquid, molten material that, when cooled, forms a potentially durable, homogeneous, solid mass. This combination of elimination of organic chemicals and change in physical form (which can reduce risk from non-groundwater pathways) make these slagged residues potential candidates for de-regulation. However, the liquefaction process does not reduce the concentration of toxic metals in the waste, which we would need to evaluate for potential risks to human health and the environment. EPA is planning to address this issue, as well as other possible tailored exclusions for combustion residues, in the upcoming proposal.

[23] *See* table 1, EPA 2000. *Releases of Hazardous Constituents Associated with Mixture and Derived-from Wastes (An Update)* U.S. EPA, April 2000.

E. Expanding the Current De Minimis Exclusion

A final regulatory option to revise the mixture and derived-from rules would expand a current exclusion for ''*de minimis*'' losses that result from the manufacture of commercial chemical products. The current exclusion, found in 40 CFR 261.3(a)(2)(iv)(D), excludes small losses of a commercial chemical product that can result from normal handling of the chemicals during the manufacturing process. The existing exclusion applies to commercial chemical products or intermediates, when they are lost during the manufacturing operation and are subsequently managed as a wastewater subject to regulation under the Clean Water Act (CWA) (see 46 FR 56586). The suggested expansion of this option would also exclude small losses from the normal handling of all listed hazardous wastes (instead of just commercial chemical products) when managed as a wastewater under the CWA. One rationale for the current ''de minimis'' exclusion is that a facility has little economic incentive to allow spills, leaks or other losses of commercial products. With respect to wastes, CMA believes that tank, container and air emission management standards of 40 CFR parts 264 and 265, subparts I, J, BB, and CC serve to encourage safe management of these wastes.

(1) Summary of Comments on Expanding the Current De Minimis Exclusion

EPA received comments from 15 commenters in response to the suggested expansion of the de minimis exclusion. Of those comments, six were received from industries, four were from industry associations, three were from State Agencies, one was from a Federal Government Agency, and one was from a waste management association. A summary of the specific issues raised by commenters is provided below.

Three commenters did not support the exclusion, believing that the exclusion might serve as an incentive for generators to spill or leak listed wastes into non-hazardous wastewater systems if those wastes were eligible for an exclusion. The current exclusion exists for commercial chemical products and companies typically ensure that raw materials/products are handled in a manner which would minimize losses, as these materials/products are valuable. The commenters did not believe that companies necessarily would take the same amount of care to prevent losses of listed wastes, if those wastes were excluded from Subtitle C.

One State commenter supported the exclusion. However, the State believes that rinsate from large hazardous waste containers that are rendered empty should be outside the definition of a de minimis loss. Large containers such as tanker trucks could contain substantial quantities (possibly hundreds of gallons) of hazardous waste. Such a volume of hazardous waste is outside the scope of losses that should be defined as de minimis and should not be defined as such.

One industry commenter stated that it was not clear from the preamble discussion what was meant by ''rinsate from empty containers or from containers that are rendered empty by that rinsing.'' The commenter noted that rinsate from containers that held hazardous waste ''generally contains concentrations of hazardous constituents which are at least as high as the original waste'' and may contain significant quantities of solids. The quantities used to rinse containers of this type also may be significant depending upon the level of contamination in the container. In some cases it is not possible to clean a container to the point of being empty under the RCRA regulations and the container has to be disposed of as hazardous waste. The commenter believed that this issue must be clarified further before any exclusion could be considered. An industry association commenter also noted that the CMA proposal did not identify adequately the wastes for which the exclusion would operate. Since RCRA-empty container rinsate is already excluded, the commenter believed it should be specified that any exclusion need only address acute hazardous waste rinsate.

The rest of the commenters supported expanding the de minimis exclusion to all listed wastes. Several commenters believed that the exclusion could be extended beneficially to cover the very small losses from the normal handling of all listed wastes. The stringent regulation of hazardous waste handling at the site of generation means that few losses of this type would be expected to occur. The ability to manage de minimis losses of listed wastes as non-hazardous would ease RCRA compliance significantly without compromising the integrity of the NPDES wastewater treatment system or protection of human health and the environment.

The commenters noted that there was no reason to assume that a non-hazardous industrial wastewater treatment facility was any less capable of providing adequate treatment of the hazardous constituents found in listed wastes. EPA's stringent container and

tank management standards in 40 CFR parts 264 and 265 subparts I and J, and air emission standards in subpart CC, serve as powerful incentives to properly manage these wastes to minimize the occurrence of ''de minimis'' losses. The Federal commenter supported the expansion, noting that it would provide to military installations the same level of regulation as is currently applicable to manufacturing industries. One industry commenter recommended that facilities wishing to take advantage of this exclusion be required to develop and implement written Best Management Practices (BMP) for all loading, unloading and transfer operations which are designed to minimize spills and prevent abuse of the exclusion.

One commenter questioned why EPA never has set out a scientific rationale by which it reserves the discriminatory use of the de minimis rule to those engaged in the manufacturing process and denies it to all others, including stand-alone bulk liquid commercial chemical storage terminals. The commenter also suggested that de minimis losses include those from normal material handling operations (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers, leaks from well-maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing.

Another commenter believed that there would be significant benefits from allowing de minimis losses of commercial chemical products from laboratories to be covered by the current regulatory exclusion. The types of commercial chemical products being used and tested in the laboratory also could be expected to be amenable to effective treatment in an on-site wastewater treatment system. The commenter noted that significant time, effort and cost is involved in segregating and capturing these types of de minimis losses from on-site laboratories.

(2) EPA's Response to Comments on Expanding the Current De Minimis Exclusion

EPA is considering the possibility of expanding the current de minimis exclusion for wastes managed in a wastewater treatment system subject to the Clean Water Act. However, EPA is concerned about the possible negative incentives that might result from extending the de minimis exclusion to wastes listed in 40 CFR 261.31 and 261.32 (F and K wastes, respectively). As noted in the comments, there is a direct economic incentive to ensuring that raw materials/products are handled in a manner which would minimize losses, as these materials/products are valuable. This incentive does not exist for hazardous waste. The concept of ''de minimis'' is also variable, depending on the quantities of material handled and the relationship of those quantities with the flowrate of the facility's wastewater treatment plant. However, EPA realizes that separation of small leaks of certain hazardous wastes can sometimes be impractical.

One possible approach would be to base the concept of ''de minimis'' on some fixed quantity of the waste, such as a Reportable Quantity (RQ) in Superfund regulations (see 40 CFR 302.4 and Table 302.4). By statute, all hazardous wastes must be given an RQ. EPA may pursue the concept of de minimis related to RQs (or some fraction or multiple thereof) as we consider this issue further. In pursuing such a change, EPA would do so through a proposed rulemaking.

In conclusion, EPA is currently developing proposals related to two of the suggestions that we believe to be the most straightforward to address: expanding the current headworks exclusion and excluding certain combustion residues (see Sections X.A. and X.D. respectively). We will also consider developing additional proposals on the other suggestions as well as other targeted exemptions, but we believe more analysis would first be necessary to decide how to address specific issues raised in the public. EPA welcomes any information or data that would help us in developing these analyses.

State Authorization

XI. How Will Today's Regulatory Changes Be Administered and Enforced in the States?

Under section 3006 of RCRA, EPA may authorize qualified States to carry out the RCRA hazardous waste program within the State. Following authorization, we maintain independent enforcement authority under sections 3007, 3008, 3013, and 7003 of RCRA, although authorized States have enforcement responsibility. An authorized State could become authorized for today's regulatory changes by following the approval process described under 40 CFR 271.21. See 40 CFR part 271 for the overall standards and requirements for authorization.

We are finalizing the retention of the mixture and derived-from rules. Most states have already received authorization for the mixture and derived-from rules as they currently stand. The rules are already in effect in those authorized States. Those states that are already authorized for the mixture and derived-from rules do not need to obtain authorization for those rules again. We are also revising those rules under the authority of sections 3001(a), 3002(a), and 3004(a) of RCRA. These revisions will not go into effect in authorized States until they adopt the revisions and receive authorization from us for the revision to their regulations.

None of today's revisions are more stringent or broaden the scope of the existing Federal requirements. Authorized States are not required to modify their programs when we promulgate changes to Federal requirements that are less stringent than, or that narrow the scope of, existing Federal requirements. This flexibility stems from RCRA section 3009, which allows the States to impose (or retain) standards that are more stringent than those in the Federal program. (See also 40 CFR 271.1(i)). Therefore, States are not required to adopt the revisions to the mixture and derived-from rules in today's rule, although EPA will strongly encourage their adoption.

Administrative Requirements

XII. How Has EPA Fulfilled the Administrative Requirements for This Rulemaking?

Several statutes and executive orders apply to rulemaking. Below is an explanation of how we address the requirements in those provisions:

A. Executive Order 12866: Determination of Significance

Under Executive Order 12866 (58 FR 51,735 (Oct. 4, 1993)), EPA must determine whether a regulatory action is ''significant'' and, therefore, subject to OMB review and the other provisions of the Executive Order. The Order defines a ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or rights and obligations or recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in Executive Order 12866.

Pursuant to the fourth term of Executive Order 12866, we have determined that this rule is a ''significant regulatory action'' because there are novel policy issues arising out of legal mandates. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations are documented in the docket to today's rule.

Although today's final rule is not ''economically significant,'' the Agency prepared an economics background document in support of today's rule, titled *Economic Assessment of the U.S. EPA's 2001 Final Rule Revising the Mixture and Derived-From Rules.*

There are currently 29 hazardous waste codes within the RCRA program listed solely for ignitability (I), corrosivity (C), and/or reactivity (R) characteristics. Today's rule excludes these wastes from RCRA Subtitle C regulation, if such wastes are de-characterized and meet the associated LDR treatment standards.To estimate the potential economic impact of excluding these 29 characteristically-listed RCRA waste codes, we analyzed the type and quantity of industrial hazardous wastes contained in the two databases: the 1986 ''Generator Survey'', and the 1996 ''National Hazardous Waste Constituent Survey.'' These two databases are described in the Economic Assessment background document.

This exclusion is expected to benefit the relevant segment of the RCRA regulated community by reducing the cost of shipping and disposing these de-characterized wastes. This potential cost savings is modeled in this study as consisting of two components:

(1) The difference between the cost for disposal of treatment residuals from these 29 waste codes in hazardous landfills (i.e., current or ''baseline'' practice), compared to the cost for disposal in nonhazardous landfills under this exclusion.

(2) The reduction in burden hours and associated burden cost for no longer requiring preparation, transmitting and filing of truck shipment hazardous waste manifests (EPA Form 8700–22) for these potentially excluded wastes.

The database extractions, computations and findings of the impact analysis are presented in the Economic Assessment background document. The highlights of EPA's estimated economic impacts for this revision are as follows:

—236 applicable industrial hazardous waste streams, totaling 3.6 million tons in annual generation (before RCRA Subtitle C hazardous waste treatment) by an estimated 120 US facilities.

—As generated, these waste streams consist of 99% liquid (mainly organic liquids) and 1% non-liquid (sludge) waste forms.

—The 3.6 million annual tons of applicable waste (before RCRA Subtitle C hazardous waste treatment), represents 1.4% of the total RCRA hazardous waste universe (1993 BRS large generator total quantity = 258 million tons).

—Approximately 75% of the potentially excluded waste streams are identified by waste code F003 (spent non-halogenated solvents) plus a characteristic waste code (for example, D001), and 19% are identified by waste code F003 only.

—Applicable waste streams are located in 17 four-digit level SIC code industry sectors. 146 (62%) of the 236 applicable waste streams are generated by industries in SIC 28 (represented also by NAICS code 325).

—There are 51 different hazardous chemical constituents in the wastestreams *before treatment;* prevalent ones include: ethylbenzene, toluene, methyl ethyl ketone, methanol, ethyl acetate, xylenes, acetone, methylene chloride, and n-butyl alcohol.

—After RCRA Subtitle C treatment (mainly incineration), the 236 wastestreams result in the annual disposal of about 57,400 tons of treatment residuals, primarily in the form of incineration ash.

—Potential annual industry waste treatment residual disposal cost savings is estimated at $4.593 million, while annual reduction in truck shipment manifesting cost is estimated at $0.455 million. These two cost savings components represent a total annual cost savings estimate of $5.048 million. Applying –15% to +30% cost estimation uncertainty to this point-estimate (as explained in the background document), produces the associated cost savings estimation range of $4.29 to $6.56 million per year.

B. Regulatory Flexibility Act

Pursuant to the 1980 Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency publishes a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment, a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). However, a regulatory flexibility analysis is not required if the head of an agency certifies that the rule will not have a ''significant'' economic impact on a substantial number of small entities.

SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a ''significant'' economic impact on a substantial number of small entities. Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 *et. seq.*

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) A small business that meets the Small Business Administration size standards established for industries as described in the North American Industry Classification System (see http://www.sba.gov/size/NAICS-cover-page.html).; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant adverse economic impact on small entities, since the primary purpose of the regulatory flexibility analyses is to

identify and address regulatory alternatives ''which minimize any significant economic impact of the proposed rule on small entities.'' 5 U.S.C. 603 and 604. Thus, an agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on all of the small entities subject to the rule.

The following discussion presents the facts for EPA's determination. EPA has examined this rule's potential effects on small entities as required by the RFA/SBREFA, and has determined that this action will not have a significant economic impact on a substantial number of small entities. As discussed in Section XII.A of this preamble, we have prepared an economic analysis of the potential effects of this rule, and have determined that the rule is expected to have a net beneficial effect on eligible entities, in the form of reduced environmental regulatory compliance costs for industrial waste management. The final rule allows small (and other size) entities voluntarily to exempt certain solid wastes (i.e. mixtures and derivatives of solid wastes listed as RCRA hazardous solely for the ignitability, corrosivity, and/or reactivity characteristics, which no longer exhibit any such characteristic, and which comply with RCRA land disposal restrictions), from compliance with the RCRA Subtitle C hazardous waste regulatory system. The economic analysis evaluates the extent to which both small quantity and large quantity industrial waste generators might be potentially eligible for cost savings under this rule, as a result of seeking this exemption. This proposed rule is voluntary, and the overall economic effect of this regulation for both small and large entities which are eligible to participate, is expected to be a net average annual reduction in industry regulatory burden and compliance costs. Consequently, because the net economic impacts and effects of this rule are beneficial rather than adverse, we have concluded that today's final rule will relieve regulatory burden for all small entities.

C. Paperwork Reduction Act (Information Collection Request)

The information collection requirements in this rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 0801.12) and a copy may be obtained from Sandy Farmer by mail at OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 1200 Pennsylvania Avenue NW.; Washington, DC 20460, by E-mail at farmer.sandy@epamail.epa.gov, or by calling (202) 260–2740. A copy may also be downloaded off the Internet at http://www.epa.gov/icr.

Today's revisions of 40 CFR 261.3 do not include any new recordkeeping or reporting requirements. However, the revisions could reduce the burden estimate for existing RCRA information collection requirements, such as the Uniform Hazardous Waste Manifest (Form 8700–22A). As discussed in Section XII.A. of this preamble, today's rule could exclude approximately 54,700 tons of treated waste residuals (mainly incineration ash) per year. Assuming that these now-excluded wastes are shipped offsite for disposal, and assuming that an average truckload carries about 20 tons (of solids), today's rule could result in approximately 2,870 shipments per year that would no longer require Uniform Hazardous Waste Manifest. (This estimate is an upper bound, since many hazardous waste generators manage their waste on-site). The RCRA Hazardous Waste Manifest System ICR (No. 0801.12.) estimates an annual burden of 1.29 hours per shipment of hazardous waste. Therefore, today's rule could reduce the total burden associated with manifests by 3,702 hours per year. (The current burden associated with manifests is estimated to be 2,920,383 hours per year).

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose, or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, we generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year.

Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes, with the final rule, an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, we must have developed a small government agency plan under section 203 of the UMRA. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's revision to the mixture and derived-from rules is voluntary, and because these revisions are less stringent than the current regulations, State governments are not required to adopt the regulatory changes. The UMRA generally excludes from the definition of ''Federal intergovernmental mandate'' duties that arise from participation in a voluntary federal program. The UMRA also excludes from the definition of ''Federal private sector mandate'' duties that arise from participation in a voluntary federal program. Therefore we have determined that today's rule is not subject to the requirements of sections 202 and 205 of UMRA.

E. Executive Order 13132 (Federalism)

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. As explained in Section XI of this preamble, none of today's revisions are more stringent or broaden the scope of the existing Federal requirements. Therefore, States are not required to adopt the revisions to the mixture and derived-from rules in today's rules. Thus, Executive Order 13132 does not apply to this rule. Although section 6 of Executive Order 13132 does not apply to this rule, EPA did consult with representatives of state governments in developing this rule, and included representatives of state governments as participants in the rulemaking workgroup. For an overview of EPA's consultations with the States, please see *Summary of Consultations with State Representatives for the Hazardous Waste Identification Rule (HWIR).*

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, November 6, 2000), requires EPA to develop an accountable process to ensure ''meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.'' ''Policies that have tribal implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes.''

This final rule does not have tribal implications. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. Because today's revision to the mixture and derived-from rules is less stringent than the existing program, it would not create any mandate on Indian tribal governments. Thus, Executive Order 13175 does not apply to this rule.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

''Protection of Children from Environmental Health Risks and Safety Risks'' (62 *FR* 19885, April 23, 1997) applies to any rule that: (1) is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that we have reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, we must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by us. This rule is not subject to Executive Order 13045 because it is not an economically significant rule as defined by Executive Order 12866 and because the environmental health or safety risks addressed by this action do not present a disproportionate risk to children.

H. National Technology Transfer and Advancement Act of 1995

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, section 12(d) (15 U.S.C. 272 note) directs us to use voluntary consensus standards in our regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (for example, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when we decide not to use available and applicable voluntary consensus standards. Today's rule does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

I. Executive Order 12898: Environmental Justice

Under Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,'' as well as through EPA's April 1995, ''Environmental Justice Strategy, OSWER Environmental Justice Task Force Action Agenda Report,'' and National Environmental Justice Advisory Council, EPA has undertaken to incorporate environmental justice into its policies and programs. EPA is committed to addressing environmental justice concerns, and is assuming a leadership role in environmental justice initiatives to enhance environmental quality for all residents of the United States. The Agency's goals are to ensure that no segment of the population, regardless of race, color, national origin, or income, bears disproportionately high and adverse human health and environmental effects as a result of EPA's policies, programs, and activities. Today's rule is not expected to negatively impact any community, and therefore is not expected to cause any disproportionately high and adverse impacts to minority or low-income communities versus non-minority or affluent communities.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register.** A major rule cannot take effect until 60 days after it is published in the **Federal Register.** This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective August 14, 2001.

Technical Correction

XIII. What Technical Correction Is EPA Making in Today's Rulemaking?

In today's final rule, we also are correcting an error made in a previous notice. In the final rule published June 8, 2000, ''Organobromines Production Wastes; Petroleum Refining Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Final Rule and Correcting Amendments' (65

FR 36365), the entry for listed hazardous waste code U048 (o-Chlorophenol) in Table 1 of Appendix VII to 40 CFR part 268 (''Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the LDRs-Comprehensive List'') was inadvertently removed. Today we are amending Table 1 of Appendix VII to 40 CFR part 268 to reinsert the entry for hazardous waste code U048. The LDR effective date for this waste code (all waste categories) was August 8, 1990.

List of Subjects

40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Waste treatment and disposal.

40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

Dated: April 30, 2001.

Christine Todd Whitman,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

2. Section 261.3 is amended by removing and reserving paragraph (a)(2)(iii) and revising paragraph (a)(2)(iv) and the first sentence of paragraph (c)(2)(i); and by adding paragraphs (g) and (h) to read as follows:

§ 261.3 Definition of hazardous waste.

(a) * * *

(2) * * *

(iii) [Reserved]

(iv) It is a mixture of solid waste and one or more hazardous wastes listed in subpart D of this part and has not been excluded from paragraph (a)(2) of this section under 40 CFR 260.20 and 260.22, paragraph (g) of this section, or paragraph (h) of this section; however, the following mixtures of solid wastes and hazardous wastes listed in subpart D of this part are not hazardous wastes (except by application of paragraph (a)(2)(i) or (ii) of this section) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and;

* * * * *

(c) * * *

(2) (i) Except as otherwise provided in paragraph (c)(2)(ii), (g) or (h) of this section, any solid waste generated from the treatment, storage, or disposal of a hazardous waste, including any sludge, spill residue, ash emission control dust, or leachate (but not including precipitation run-off) is a hazardous waste. * * *

* * * * *

(g)(1) A hazardous waste that is listed in subpart D of this part solely because it exhibits one or more characteristics of ignitability as defined under § 261.21, corrosivity as defined under § 261.22, or reactivity as defined under § 261.23 is not a hazardous waste, if the waste no longer exhibits any characteristic of hazardous waste identified in subpart C of this part.

(2) The exclusion described in paragraph (g)(1) of this section also pertains to:

(i) Any mixture of a solid waste and a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (a)(2)(iv) of this section; and

(ii) Any solid waste generated from treating, storing, or disposing of a hazardous waste listed in subpart D of this part solely because it exhibits the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (c)(2)(i) of this section.

(3) Wastes excluded under this section are subject to part 268 of this chapter (as applicable), even if they no longer exhibit a characteristic at the point of land disposal.

(h)(1) Hazardous waste containing radioactive waste is no longer a hazardous waste when it meets the eligibility criteria and conditions of 40 CFR part 266, Subpart N (''eligible radioactive mixed waste'').

(2) The exemption described in paragraph (h)(1) of this section also pertains to:

(i) Any mixture of a solid waste and an eligible radioactive mixed waste; and

(ii) Any solid waste generated from treating, storing, or disposing of an eligible radioactive mixed waste.

(3) Waste exempted under this section must meet the eligibility criteria and specified conditions in 40 CFR 266.225 and 40 CFR 266.230 (for storage and treatment) and in 40 CFR 266.310 and 40 CFR 266.315 (for transportation and disposal). Waste that fails to satisfy these eligibility criteria and conditions is regulated as hazardous waste.

PART 268—LAND DISPOSAL RESTRICTIONS

3. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

Appendix VII to Part 268—[Amended]

4. Appendix VII to part 268 Table 1 is amended by adding the following wastestream in alphanumeric order (by the first column) to read as follows:

Waste code	Waste category	Effective date
* * * * * * *		
U048	All	Aug. 8, 1990.

[FR Doc. 01–11411 Filed 5–15–01; 8:45 am]

BILLING CODE 6560–50–P

§ 180.482 [Amended]

2. Section 180.482 is amended in the table to paragraph (b) by revising the ''Expiration/Revocation/Date'' for sweet potatoes to read ''12/31/02.''

[FR Doc. 01–24720 Filed 10–2–01; 8:45 am]
BILLING CODE 6560–50–S

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

[FRN–7066–2]

RIN 2050–AE07

Correction to the Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-From Rules; Direct Final Rule

AGENCY: Environmental Protection Agency (EPA).

ACTION: Direct final rule.

SUMMARY: EPA is taking direct final action on two clarifying revisions to the mixture rule. The first revision reinserts certain exemptions to the mixture rule which were inadvertently deleted. The second revision clarifies that mixtures consisting of certain excluded wastes (commonly referred to as Bevill wastes) and listed hazardous wastes that have been listed solely for the characteristic of ignitability, corrosivity, and/or reactivity, are exempt once the characteristic for which the hazardous waste was listed has been removed.

DATES: This rule is effective on December 3, 2001, without further notice, unless EPA receives adverse comment by November 2, 2001. If we receive such comment, we will publish a timely withdrawal in the **Federal Register** informing the public that this rule will not take effect.

ADDRESSES: Please send an original and two copies of your comments referencing Docket number F–2001–WH3P–FFFFF to (1) if using regular U.S. Postal Service mail: RCRA Docket Information Center, Office of Solid Waste (5305W), U.S. Environmental Protection Agency Headquarters (EPA, HQ),1200 Pennsylvania Avenue, NW, Washington, DC 20460–0002, or (2) if using special delivery, such as overnight express service: RCRA Docket Information Center (RIC), Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia 22202. To reduce paper use, we are asking you to send one paper copy, and one electronic copy by diskette or Internet email. In this case, send your comments to the RCRA Information Center on labeled personal computer diskettes in ASCII (TEXT) format or a word processing format we can convert to ASCII (TEXT). Please include on the disk label the name, version, and edition of your word processing software as well as your name and docket number F–2001–WH3P–FFFFF. Protect your diskette by putting it in a protective mailing envelope. To send a copy by Internet email, address it to: *rcra-docket@epamail.epa.gov*. Make sure this electronic copy is in an ASCII format that doesn't use special characters or encryption. Cite the docket Number F–2001–WH3P–FFFFF in your electronic file.

Supporting materials are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The Docket Identification Number is F–2001–WH3F–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, it is recommended that the public make an appointment by calling 703–603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. The index and some supporting materials are available electronically.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Call Center at 800–424–9346 or TDD 800–553–7672 (hearing impaired). In the Washington, DC, metropolitan area, call 703–412–9810 or TDD 703–412–3323.

For more detailed information on specific aspects of this rulemaking, contact Tracy Atagi, Office of Solid Waste 5304W, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460–0002, 703–308–8672, *atagi.tracy@epa.gov*.

SUPPLEMENTARY INFORMATION: On May 16, 2001, EPA published a final rule, Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-From Rules (66 FR 27266). In that rulemaking, EPA revised 40 CFR 261.3 by removing paragraph (a)(2)(iii), revising the introductory language to paragraph (a)(2)(iv) and adding new paragraphs (g) and (h). New paragraph (g) contains a revised version of the exemption formerly in (a)(2)(iii). In making theses change, EPA inadvertently deleted a reference in 40 CFR 261.3(a)(2)(iii) to the eligibility for this exemption of mixtures of wastes excluded from 40 CFR 261.4(b)(7) (commonly referred to as the Bevill exclusion), and also inadvertently deleted subparagraphs A–G of 40 CFR 261.3(a)(2)(iv), which refer to several other exemptions to the mixture rule.

In making these revisions to the mixture and derived-from rules, EPA did not intend to remove the ''Bevill mixtures'' or other mixtures referenced in the exemptions from eligibility for exemption under the revised mixture rule. To clarify this point, EPA is reinstating the deleted subparagraphs to 40 CFR 261.3(a)(2)(iv) and is revising 40 CFR 261.3(g), explicitly stating that the Bevill mixtures are eligible for the revised exemption if the waste no longer exhibits the characteristic for which the listed hazardous waste portion of the mixture was listed. The purpose of this revision is to prevent possible future regulatory confusion on the status of these ''Bevill mixtures'' and will not change their current regulatory status under the mixture rule.

EPA is publishing this rule without prior proposal because we view this as a noncontroversial amendment and anticipate no adverse comment. However, in the ''Proposed Rules'' section of today's **Federal Register** publication, we are publishing a separate document that will serve as the proposal to revise the mixture and derived-from rules if adverse comments are filed. This rule will be effective on December 3, 2001, without further notice unless we receive adverse comment by November 2, 2001. If EPA receives adverse comment, we will publish a timely withdrawal in the **Federal Register** informing the public that the rule will not take effect. We will address all public comments in a subsequent final rule based on the proposed rule. We will not institute a second comment period on this action. Any parties interested in commenting must do so at this time.

Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ''significant regulatory action'' and is therefore not subject to review by the Office of Management and Budget. Because the purpose of today's action is to make a clarification that will not change the current regulatory status quo, it has no economic impact and is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), or to sections 202 and 205 of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104–4). In addition, this action does not significantly or uniquely affect small governments or impose a significant intergovernmental mandate, as described in sections 203 and 204 of UMRA. This rule also does not have

tribal implications, as specified by Executive Order 13175 (65 FR 67249, November 6, 2000). This rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This rule also is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997), because it is not economically significant.

This action does not involve technical standards; thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. The rule also does not involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). In issuing this rule, EPA has taken the necessary steps to eliminate drafting errors and ambiguity, minimize potential litigation, and provide a clear legal standard for affected conduct, as required by section 3 of Executive Order 12988 (61 FR 4729, February 7, 1996). This rule does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule is not subject to Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355 (May 22, 2001)) because it is not a significant regulatory action under Executive Order 12866.

The Congressional Review Act (5 U.S.C. 801 *et seq.*), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule is effective on December 3, 2001, unless EPA receives adverse comment by November 2, 2001. If we receive such comment, we will publish a timely withdrawal in the **Federal Register** informing the public that this rule will not take effect.

List of Subjects in 40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Waste treatment and disposal.

Dated: September 20, 2001.

Christine Todd Whitman,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

2. Section 261.3 is amended by revising paragraph (a)(2)(iv) and adding paragraph (g)(4) to read as follows:

§ 261.3 Definition of hazardous waste.

(a) * * *

(2) * * *

(iv) It is a mixture of solid waste and one or more hazardous wastes listed in subpart D of this part and has not been excluded from paragraph (a)(2) of this section under §§ 260.20 and 260.22, paragraph (g) of this section, or paragraph (h) of this section; however, the following mixtures of solid wastes and hazardous wastes listed in subpart D of this part are not hazardous wastes (except by application of paragraph (a)(2)(i) or (ii) of this section) if the generator can demonstrate that the mixture consists of wastewater the discharge of which is subject to regulation under either section 402 or section 307(b) of the Clean Water Act (including wastewater at facilities which have eliminated the discharge of wastewater) and;

(A) One or more of the following solvents listed in § 261.31—carbon tetrachloride, tetrachloroethylene, trichloroethylene—*Provided*, That the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 1 part per million; or

(B) One or more of the following spent solvents listed in § 261.31—methylene chloride, 1,1,1-trichloroethane, chlorobenzene, o-dichlorobenzene, cresols, cresylic acid, nitrobenzene, toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, spent chlorofluorocarbon solvents—provided that the maximum total weekly usage of these solvents (other than the amounts that can be demonstrated not to be discharged to wastewater) divided by the average weekly flow of wastewater into the headworks of the facility's wastewater treatment or pretreatment system does not exceed 25 parts per million; or

(C) One of the following wastes listed in § 261.32, provided that the wastes are discharged to the refinery oil recovery sewer before primary oil/water/solids separation—heat exchanger bundle cleaning sludge from the petroleum refining industry (EPA Hazardous Waste No. K050), crude oil storage tank sediment from petroleum refining operations (EPA Hazardous Waste No. K169), clarified slurry oil tank sediment and/or in-line filter/separation solids from petroleum refining operations (EPA Hazardous Waste No. K170), spent hydrotreating catalyst(EPA Hazardous Waste No. K171), and spent hydrorefining catalyst (EPA Hazardous Waste No. K172); or

(D) A discarded commercial chemical product, or chemical intermediate listed in § 261.33, arising from *de minimis* losses of these materials from manufacturing operations in which these materials are used as raw materials or are produced in the manufacturing process. For purposes of this paragraph (a)(2)(iv)(D), ''de minimis'' losses include those from normal material handling operations (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well maintained pump packings and seals; sample purgings; relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; and rinsate from empty containers or from containers that are rendered empty by that rinsing; or

(E) Wastewater resulting from laboratory operations containing toxic (T) wastes listed in subpart D of this part, Provided, That the annualized average flow of laboratory wastewater does not exceed one percent of total wastewater flow into the headworks of the facility's wastewater treatment or pre-treatment system or provided the wastes, combined annualized average concentration does not exceed one part per million in the headworks of the facility's wastewater treatment or pre-treatment facility. Toxic (T) wastes used in laboratories that are demonstrated not to be discharged to wastewater are not to be included in this calculation; or

(F) One or more of the following wastes listed in § 261.32—wastewaters from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K157)—Provided that the maximum weekly usage of formaldehyde, methyl chloride, methylene chloride, and triethylamine (including all amounts that can not be demonstrated to be reacted in the process, destroyed through treatment, or is recovered, i.e., what is discharged or volatilized) divided by the average weekly flow of process wastewater prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 parts per million by weight; or

(G) Wastewaters derived from the treatment of one or more of the following wastes listed in § 261.32—organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes (EPA Hazardous Waste No. K156).—Provided, that the maximum concentration of formaldehyde, methyl chloride, methylene chloride, and triethylamine prior to any dilutions into the headworks of the facility's wastewater treatment system does not exceed a total of 5 milligrams per liter.

* * * * *

(g) * * *

(4) any mixture of a solid waste excluded from regulation under § 261.4(b)(7) and a hazardous waste listed in subpart D of this part solely because it exhibits one or more of the characteristics of ignitability, corrosivity, or reactivity as regulated under paragraph (a)(2)(iv) of this section is not a hazardous waste, if the mixture no longer exhibits any characteristic of hazardous waste identified in subpart C of this part for which the hazardous waste listed in subpart D of this part was listed.

* * * * *

[FR Doc. 01–24068 Filed 10–2–01; 8:45 am]

BILLING CODE 6560–50–U

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 403

[FRL–7073–3]

RIN 2090–AA16

Pretreatment Program Reinvention Pilot Projects Under Project XL

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This rule will change the National Pretreatment Program regulations to allow Publicly Owned Treatment Works (POTWs) that have completed the Project eXcellence and Leadership (Project XL) selection process, including Final Project Agreement (FPA) development, to modify their approved local Pretreatment Programs. These POTWs will be allowed to modify their programs, and implement the new local programs as described in their FPAs. In today's rule, EPA recognizes that many POTWs with approved Pretreatment Programs have mastered the administrative and procedural requirements of the National Pretreatment regulations. Several of these POTWs want the opportunity to implement local pretreatment programs with effectiveness measured against environmental results rather than strict adherence to programmatic and administrative measures. These POTWs have expressed an interest in Project XL to test new pilot ideas that focus resources on activities that they believe would provide greater environmental benefits than are achieved by complying with current regulatory requirements. This rule is intended to provide the regulatory flexibility that will enable these and other test programs to move forward. Currently, five POTWs are actively involved in this Project XL process. The flexibility provided by this rule revision is limited to fifteen POTWs that meet the Project XL criteria.

DATES: This final rule is effective October 3, 2001.

ADDRESSES: A docket containing the rule, Final Project Agreements, supporting materials, public comments and the official record is available for public inspection and copying at the EPA's Water Docket, EB–57 (East Tower Basement), 401 M Street, SW., Washington, DC 20460. The record for this rulemaking has been established under docket number W–00–30, and includes supporting documentation. The public may inspect the administrative record from 9 am to 4 pm Monday through Friday, excluding Federal holidays. The public is encouraged to phone in advance to review docket materials. Appointments can be scheduled by phoning the Docket Office at (202) 260–3027. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost 15 cents per page. Project materials are also available for review for today's action on the world wide web at *http://www.epa.gov/projectxl/.*

Supporting materials are also available for inspection and copying at U.S. EPA, Headquarters, 401 M Street, SW., Room 1027 West Tower, Washington, DC 20460 during normal business hours. Persons wishing to view the materials at the Washington, DC location are encouraged to contact Mr. Chad Carbone in advance by telephoning (202) 260–4296.

FOR FURTHER INFORMATION CONTACT: Mr. Brian Frazer, (202) 564–0599, U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., (MC 4203), Washington, DC 20460. Further information on today's action may also be viewed on the world wide web at *http://www.epa.gov/projectxl/.*

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action are governmental entities responsible for implementation of the National Pretreatment Program and POTWs subject to Pretreatment Standards and requirements that have completed the Project eXcellence and Leadership (Project XL) selection process, including Final Project Agreement (FPA) development, to modify their approved local pretreatment programs. Regulated categories and entities include:

Category	Examples of regulated entities
Local government	Publicly Owned Treatment Works.
State and Tribal government.	States and Tribes acting as Pretreatment Program Control Authorities or as Approval Authorities.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. If you have questions regarding the applicability of this action to a particular entity, consult the person in the preceding **FOR FURTHER INFORMATION CONTACT** section.

On October 6, 2000, the Environmental Protection Agency proposed a rule (65 FR 59791) that set forth the mechanism through which POTWs that complete the Project XL process can seek modification of their programs following the procedures in 40 CFR 403.18, and implement the new

''forward[ing] to the last known address of record.'' VA does not believe that it is prudent to unduly limit flexibility by foreclosing every means of communication other than mailing, as would result from adoption of the commenter's suggestion.

Presumptions are useful because they serve to establish critical facts when there is no contrary evidence. VA considers the proposed presumption ''rebuttable.'' If the information is furnished by mail and the date of the letter and the date of mailing do not actually match in a particular case, a party may easily rebut the presumption by submitting a copy of the postmarked envelope. The presumption may be rebutted in other cases by other appropriate evidence, depending on the means by which the information was furnished.

For the reasons stated in this document and in the preamble to the proposed rule, VA is adopting the rule as proposed, except for a nonsubstantive grammatical change.

Regulatory Flexibility Act

The Secretary hereby certifies that this final rule will not have a significant economic impact on a substantial number of small entities as they are defined in the Regulatory Flexibility Act, 5 U.S.C. 601–612. This rule may affect individual claimants for VA benefits and will not affect small businesses. Therefore, pursuant to 5 U.S.C. 605(b), this final rule is exempt from the initial and final regulatory flexibility analyses requirement of sections 603 and 604.

Paperwork Reduction Act

This document contains no provisions constituting a collection of information under the Paperwork Reduction Act (44 U.S.C. 3501–3520).

Unfunded Mandates

The Unfunded Mandates Reform Act requires, at 2 U.S.C. 1532, that agencies prepare an assessment of anticipated costs and benefits before developing any rule that may result in an expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of $100 million or more in any given year. This rule would have no consequential effect on State, local, or tribal governments.

List of Subjects in 38 CFR Part 20

Administrative practice and procedure, Claims, Lawyers, Legal services, Veterans.

Approved: November 26, 2001.

Anthony J. Principi,

Secretary of Veterans Affairs.

For the reasons set out in the preamble, amend 38 CFR part 20 as follows:

PART 20—BOARD OF VETERANS' APPEALS: RULES OF PRACTICE

1. The authority citation for part 20 continues to read as follows:

Authority: 38 U.S.C. 501(a) and as noted in specific sections.

2. Revise § 20.502 to read as follows:

§ 20.502 Rule 502. Time limit for response to appeal by another contesting party in a simultaneously contested claim.

A party to a simultaneously contested claim may file a brief or argument in answer to a Substantive Appeal filed by another contesting party. Any such brief or argument must be filed with the agency of original jurisdiction within 30 days from the date the content of the Substantive Appeal is furnished as provided in § 19.102 of this chapter. Such content will be presumed to have been furnished on the date of the letter that accompanies the content.

(Authority: 38 U.S.C. 7105A(b))

[FR Doc. 01–29844 Filed 11–30–01; 8:45 am]

BILLING CODE 8320–01–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

[FRN–7112–6]

RIN: 2050–AE07

Correction to the Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-from Rules: Delay of Effective Date; Reopening of Comment Period

ACTION: Delay of effective date and reopening of comment period.

SUMMARY: EPA issued a direct final rule in the **Federal Register** on October 3, 2001 at 66 FR 50332 entitled *Correction to the Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-from Rules; Direct Final Rule.* During and after the comment period for that direct final rule, U.S. mail delivery to EPA's dockets was delayed due to concerns about possible contamination. This document delays the effective date of that direct final rule and reopens the comment period for thirty days to assure that EPA receives any comments that were mailed during the comment period but were not received by EPA by the end of the comment period. EPA is requesting that anyone who submitted comments during the previous comment period resubmit those comments as described below.

DATES: This action is made on December 3, 2001. The effective date of the Correction to the Hazardous Waste Identification Rule, amending 40 CFR 261.3 published in the **Federal Register** on October 3, 2001 at 66 FR 50332, is delayed for 60 days, from December 3, 2001 to a new effective date of February 1, 2002. That direct final rule will be effective on February 1, 2002 unless EPA receives adverse comment by January 2, 2002.

ADDRESSES: Please send an original and two copies of your comments referencing Docket number F–2001–WH3P–FFFFF to (1) if using regular U.S. Postal Service mail: RCRA Docket Information Center, Office of Solid Waste (5305W), U.S. Environmental Protection Agency Headquarters (EPA, HQ), 1200 Pennsylvania Avenue, NW., Washington, DC 20460–0002, or (2) if delivering in person, or using special delivery, such as overnight express service: RCRA Docket Information Center (RIC), Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington, Virginia 22202. Because of possible mail delays in the Washington DC area, please send a separate copy of each public comment either (1) via Internet email to *rcra-docket@epamail.epa.gov,* or (2) to David M. Friedman, U.S. EPA Region 3, Mail Code 3WC11, 1650 Arch Street, Philadelphia, PA 19103–2029. If sending comments via email, please make sure this electronic copy is in an ASCII format that doesn't use special characters or encryption. Cite the docket Number F–2001–WH3P–FFFFF in your electronic file.

The RCRA Information Center is located at Crystal Gateway One, 1235 Jefferson Davis Highway, First Floor, Arlington Virginia. If you would like to look at and copy supporting information for RCRA rules, please make an appointment with the RCRA Information Center by calling (703) 603–9230. Docket hours are from 9:00 A.M. to 4:00 P.M. Monday through Friday, except for Federal holidays. You may copy up to 100 pages from any regulatory document at no cost. Additional copies cost $0.15 per page.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA Call Center at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, DC, metropolitan area,

call (703) 412–9810 or TDD (703) 412–3323.

For more detailed information on specific aspects of this rulemaking, contact Tracy Atagi, Office of Solid Waste 5304W, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460–0002, 703–308–8672, *atagi.tracy@epa.gov.*

SUPPLEMENTARY INFORMATION: On October 3, 2001, EPA published in the **Federal Register** at 66 FR 50332 a direct final rule taking final action on two clarifying revisions to the mixture rule. The first revision reinserts certain exemptions to the mixture rule which were inadvertently deleted. The second revision clarifies that mixtures consisting of certain excluded wastes (commonly referred to as Bevill wastes) and listed hazardous wastes that have been listed solely for the characteristic of ignitability, corrosivity, and/or reactivity, are exempt once the characteristic for which the hazardous waste was listed has been removed.

EPA also published a separate document at 66 FR50379 (October 3, 2001) to serve as the proposal to *Correction to the Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-from Rules* if adverse comments were filed. The rule was scheduled to become effective on December 3, 2001 unless EPA received adverse comment by November 2, 2001. However, during and after the comment period for that rule, U.S. mail delivery to all EPA Headquarters offices in Washington, DC and Northern Virginia, including EPA's dockets, was delayed due to concerns about possible contamination. Because of the unexpected and unprecedented nature of this U.S. mail delay and the resulting uncertainty about whether EPA may have received any comments that were sent by U.S. mail, EPA believes that it is in the public interest to temporarily delay the effective date of that direct final rule for sixty days. The purpose of delaying the effective date is to reopen the comment period for thirty days to assure that EPA receives any comments that were submitted by U.S. mail during the comment period but were delayed due to U.S. mail delays.

EPA expects that all delayed mail will be delivered by the end of this thirty-day period. However, to assure that EPA receives the comments, anyone who submitted comments during the comment period for *Correction to the Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-from Rules* should resubmit those comments in accordance with the directions in the **ADDRESSES** section of this notice. If EPA receives adverse comment on the direct final rule, EPA will publish a timely withdrawal in the **Federal Register** informing the public that the rule will not take effect. EPA will address all public comments in a subsequent final rule based on the proposed rule.

To the extent that this action is subject to 5 U.S.C. 553, EPA's implementation of this action without opportunity for public comment, effective immediately upon publication today in the **Federal Register,** is based on the good cause exceptions in 5 U.S.C. 553(b)(B) and 553(d)(3). Seeking public comment is impracticable and unnecessary in light of the imminent effective date and the extraordinary nature of the delays which affected all U.S. mail directed to EPA Headquarters offices. A brief extension of the effective date is in the public interest because it will assure that all comments are received and that interested parties are not disadvantaged by these unique circumstances.

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ''significant regulatory action'' and is therefore not subject to review by the Office of Management and Budget and is not subject to Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 18355, May 22, 2001). In addition, this action does not impose any enforceable duty, contain any unfunded mandate, or impose any significant or unique impact on small governments as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4). This action also does not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes, as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), nor will it have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999), because it does not alter the relationship or the distribution of power and responsibilities established by applicable statute. Because this action is not subject to notice-and-comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*). This action also is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Order has the potential to influence the regulation. This action is not subject to Executive Order 13045 because it does not establish an environmental standard intended to mitigate health or safety risks. Because this action does not involve technical standards, EPA did not consider the use of any voluntary consensus standards under the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note). This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

List of Subjects in 40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Waste treatment and disposal.

Dated: November 29, 2001.

Christine Todd Whitman,

Administrator.

[FR Doc. 01–29958 Filed 11–30–01; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Medicare & Medicaid Services

42 CFR Part 411

[CMS–1809–IFC]

RIN 0938–AL29

Medicare and Medicaid Programs; Physicians' Referrals to Health Care Entities With Which They Have Financial Relationships: Partial Delay of Effective Date

AGENCY: Centers for Medicare & Medicaid Services (CMS), DHHS.

ACTION: Interim final rule with comment period; partial delay in effective date.

SUMMARY: This interim final rule with comment period delays for 1 year the effective date of the last sentence of 42 CFR 411.354(d)(1). Section 411.354(d)(1) was promulgated in the final rule entitled ''Medicare and Medicaid Programs; Physicians' Referrals to Health Care Entities With Which They Have Financial Relationships,'' published in the **Federal Register** on January 4, 2001 (66

analogous category for a single tolerance that is not a crop group tolerance, i.e., paragraphs (a) through (f) of this section, without a charge for each commodity where that would otherwise apply.

(i) Objections under section 408(d)(5) of the Act shall be accompanied by a filing fee of $3,875.

(j)(1) In the event of a referral of a petition or proposal under this section to an advisory committee, the costs shall be borne by the person who requests the referral of the data to the advisory committee.

(2) Costs of the advisory committee shall include compensation for experts as provided in § 180.11(c) and the expenses of the secretariat, including the costs of duplicating petitions and other related material referred to the committee.

(3) An advance deposit shall be made in the amount of $38,750 to cover the costs of the advisory committee. Further advance deposits of $38,750 each shall be made upon request of the Administrator when necessary to prevent arrears in the payment of such costs. Any deposits in excess of actual expenses will be refunded to the depositor.

(k) The person who files a petition for judicial review of an order under section 408(d)(5) or (e) of the Act shall pay the costs of preparing the record on which the order is based unless the person has no financial interest in the petition for judicial review.

(l) No fee under this section will be imposed on the Interregional Research Project Number 4 (IR-4 Program).

(m) The Administrator may waive or refund part or all of any fee imposed by this section if the Administrator determines in his or her sole discretion that such a waiver or refund will promote the public interest or that payment of the fee would work an unreasonable hardship on the person on whom the fee is imposed. A request for waiver or refund of a fee shall be submitted in writing to the Environmental Protection Agency, Office of Pesticide Programs, Registration Division (7505C), 1200 Pennsylvania Avenue, NW., Washington, DC 20460. A fee of $1,950 shall accompany every request for a waiver or refund, except that the fee under this sentence shall not be imposed on any person who has no financial interest in any action requested by such person under paragraphs (a) through (k) of this section. The fee for requesting a waiver or refund shall be refunded if the request is granted.

(n) All deposits and fees required by the regulations in this part shall be paid by money order, bank draft, or certified check drawn to the order of the Environmental Protection Agency. All deposits and fees shall be forwarded to the Environmental Protection Agency, Headquarters Accounting Operations Branch, Office of Pesticide Programs (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. The payments should be specifically labeled ''Tolerance Petition Fees'' and should be accompanied only by a copy of the letter or petition requesting the tolerance. The actual letter or petition, along with supporting data, shall be forwarded within 30 days of payment to the Environmental Protection Agency, Office of Pesticide Programs, Registration Division (7505C), 1200 Pennsylvania Avenue, NW., Washington, DC 20460. A petition will not be accepted for processing until the required fees have been submitted. A petition for which a waiver of fees has been requested will not be accepted for processing until the fee has been waived or, if the waiver has been denied, the proper fee is submitted after notice of denial. A request for waiver or refund will not be accepted after scientific review has begun on a petition.

(o) This fee schedule will be changed annually by the same percentage as the percent change in the Federal General Schedule (GS) pay scale. In addition, processing costs and fees will periodically be reviewed and changes will be made to the schedule as necessary. When automatic adjustments are made based on the GS pay scale, the new fee schedule will be published in the **Federal Register** as a final rule to become effective 30 days or more after publication, as specified in the rule. When changes are made based on periodic reviews, the changes will be subject to public comment.

[FR Doc. 02–5868 Filed 3–12–02; 8:45 am]

BILLING CODE 6560–50–S

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 261

[SWH–FRL–7157–2]

RIN 2050–AE94

Hazardous Waste Management System; Definition of Solid Waste; Toxicity Characteristic

AGENCY: Environmental Protection Agency.

ACTION: Final Rule; Response to court order vacating regulatory provisions.

SUMMARY: This action responds to two court vacaturs of regulations under the Resource Conservation and Recovery Act (RCRA), first, by deleting regulatory language that classified mineral processing characteristic sludges and by-products being reclaimed as solid wastes under RCRA's hazardous waste management regulations, and secondly, by codifying the decision that the Toxicity Characteristic Leaching Procedure (TCLP) may not be used for determining whether manufactured gas plant (MGP) waste is hazardous under RCRA. The Environmental Protection Agency (EPA) initially took action on these matters as part of the Phase IV Land Disposal Restrictions (LDR) on May 26, 1998. Today's revisions carry out vacaturs ordered by the United States Court of Appeals for the District of Columbia Circuit in *Association of Battery Recyclers* v. *EPA (ABR).* In addition, we are announcing that we plan to propose a separate rule to revise the definition of solid waste.

EFFECTIVE DATE: This rule is effective on March 13, 2002.

ADDRESSES: Supporting materials to this final rule are available for viewing in the RCRA Information Center (RIC), located at Crystal Gateway I, First Floor, 1235 Jefferson Davis Highway, Arlington, VA. The Docket Identification Number is F–2001–TCVF–FFFFF. The RIC is open from 9 a.m. to 4 p.m., Monday through Friday, excluding federal holidays. To review docket materials, we recommend that the public make an appointment by calling (703) 603–9230. The public may copy a maximum of 100 pages from any regulatory docket at no charge. Additional copies cost $0.15/page. The docket index and some supporting materials are available electronically. See the beginning of the Supplementary Information section for information on accessing them.

FOR FURTHER INFORMATION CONTACT: For general information, contact the RCRA/Superfund Hotline at (800) 424–9346 or TDD (800) 553–7672 (hearing impaired). In the Washington, D.C., metropolitan area, call (703) 920–9810 or TDD (703) 412–3323. For information on definition of solid waste aspects of the rule, contact Ms. Ingrid Rosencrantz, Office of Solid Waste (5304W), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC, 20460. [e-mail address and telephone number: *rosencrantz.ingrid@epa.gov* (703–308–8285).] For information on the manufactured gas plant wastes and the TCLP, contact Mr. Greg Helms, Office of Solid Waste (5304W), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW.,

Washington, D.C., 20460. [E-mail address and telephone number: *helms.greg@epa.gov* (703–308–8845).]

SUPPLEMENTARY INFORMATION: Whenever the terms ''we'' or ''Agency'' are used throughout this document, they refer to the Environmental Protection Agency (EPA).

The docket index for the rule is available in electronic format on the Internet at: <*http://www.epa.gov/epaoswer/hazwaste/recycle/battery.htm*>.

We will keep the official record for this action in paper form. The official record is the paper record maintained at the RCRA Information Center, also referred to as the Docket, at the address provided in the **ADDRESSES** section at the beginning of this document.

I. Why Are We Taking This Action?

EPA is taking today's action in response to vacaturs ordered by the United States Court of Appeals for the District of Columbia Circuit in *Association of Battery Recyclers,* v. *EPA* 208 F.3d 1047 (2000). After EPA promulgated the final Phase IV LDR rule on May 26, 1998 (63 *FR* 28556), the Association of Battery Recyclers, the National Mining Association and other trade groups challenged this rule. On April 21, 2000, the D.C. Circuit issued a decision that vacated two parts of the Phase IV LDR rule. The court vacated the portion of the rule that asserted jurisdiction and imposed conditions over mineral processing characteristic by-products and sludges being stored prior to being recycled in beneficiation or primary mineral processing operations. The court also vacated the portion of the rule providing for use of the TCLP for determining whether MGP waste exhibits the characteristic of toxicity. *Association of Battery Recyclers* v. *EPA,* 208 F.3d 1047 (2000).

Regarding the mineral processing secondary materials, the Phase IV LDR rule revised a 1985 rule that defined the circumstances under which EPA classified secondary mineral processing materials undergoing reclamation as solid wastes under Subtitle C of RCRA. The 1998 Phase IV LDR rule amended the 1985 rule and relaxed jurisdiction over spent materials reclaimed within the mineral processing industry, provided certain conditions were met. The Phase IV LDR rule also asserted jurisdiction over some previously-unregulated secondary materials (characteristic by-products and sludges) reclaimed within the mineral processing industry. The rule classified these by-products and sludges as wastes if they were stored without meeting the same conditions. EPA codified the conditions under which the materials would be regulated as solid wastes at 40 CFR 261.4(a)(17) and inserted references to these conditions into the regulation asserting authority over reclamation in 40 CFR 261.2(c)(3). Today, in response to the D.C. Circuit Court's decision, EPA is codifying the vacatur by deleting a parenthetical statement in the second sentence of 40 CFR 261.2(c)(3) and making conforming changes to 40 CFR 261.4(a)(17). In § 261.4(a)(17), EPA is replacing the term ''secondary materials'' (which includes sludges and by-products, as well as spent materials) with the more narrow term ''spent materials.'' These changes inform the public that mineral processing characteristic sludges and by-products being reclaimed are not solid wastes, and mineral processing characteristic spent materials remain eligible for the conditional exclusion when being reclaimed.

To further the goal of encouraging legitimate recycling while protecting human health and the environment, EPA has decided to undertake a separate future rulemaking to propose additional revisions to its current recycling regulations. We believe that removing the specter of RCRA control where it is not necessary can spur increased reuse and recycling of hazardous waste, and will lead to better resource conservation and improved materials management overall. For materials undergoing reclamation, in the proposed rule we expect to request comment on how interested parties would distinguish materials that are discarded from materials that remain in use in a continuous industrial process and anticipate proposing a definition of ''continuous industrial process.'' In addition, EPA has been working with a group of stakeholders concerned with recycling in the metal finishing industry and we are committed to proposing, either as part of that action or as a separate rule, removal of regulatory barriers in order to increase recycling of sludges from metal finishing operations.

Although EPA has not established a formal comment period, we anticipate moving quickly to propose this rule; interested parties are welcome to submit suggestions now for this future proposal, directing them to Ms. Ingrid Rosencrantz at the address given in the **FOR FURTHER INFORMATION CONTACT** section.

The court's decision in *ABR* also addressed another provision of the Phase IV LDR Rule providing for use of the Toxicity Characteristic Leaching Procedure (TCLP) to determine whether mineral processing waste, and manufactured gas plant [1] (MGP) wastes, are RCRA hazardous wastes under 40 CFR 261.24 (63 *FR* 28597–98; May 26, 1998).

In its ruling in *ABR,* the court found that EPA produced sufficient evidence that the TCLP bears a ''rational relationship'' to plausible mineral processing waste management practices, and upheld the use of the TCLP to evaluate mineral processing wastes. Regarding MGP waste, the court found that EPA produced insufficient evidence that co-disposal of MGP waste from remediation sites with municipal solid waste (MSW) has happened or is likely to happen. The court concluded that ''* * * the EPA has not justified its application of the TCLP to MGP waste'' and consequently ''* * * vacate[d] the Phase IV rule insofar as it provides for the use of the TCLP to determine whether MGP waste exhibits the characteristic of toxicity.'' *ABR* v. *EPA,* 208 F.3d at 1064. EPA is taking final action today to codify this vacatur by promulgating language exempting MGP wastes from the Toxicity Characteristic regulation.

II. Why Do We Have Good Cause for Promulgating an Immediately Effective Final Rule Without Prior Notice and Opportunity for Public Comment?

Section 553 of the Administrative Procedure Act, 5 U.S.C. 553(b)(B), provides that, when an agency for good cause finds that notice and public comment procedure are impracticable, unnecessary or contrary to the public interest, the agency may issue a rule without providing notice and an opportunity for public comment. EPA has determined that there is good cause for removal of these provisions without prior proposal and opportunity for comment. As a matter of law, the order issued by the United States Court of Appeals for the District of Columbia Circuit on April 21, 2000, vacated the provisions of the final Phase IV LDR rules described above, making them non-binding and unenforceable. It is, therefore, unnecessary to provide notice and an opportunity for comment on this action, which merely carries out the

[1] Manufactured gas plants are facilities that produced gas from coal or oil for lighting, cooking, and heating during the 1800s until the mid 1900s. No active MGP facilities currently exist, although a range of gas production residues remain at the sites of former MGP facilities. Therefore, the only wastes generated at these sites will be from site remediation. MGP wastes are typically tars, sludges, lampblack, light oils, spent oxide wastes, and other hydrocarbons, and soils and debris contaminated with these materials. See 63 FR 28574, May 26, 1998, and EPA 542–R–00–005, *A Resource for MGP Site Characterization and Remediation* for more information on MGP sites and wastes.

court's order. For the same reasons, EPA finds that it has good cause to make the revisions immediately effective under 5 U.S.C. 553(d) and section 3010(b) of RCRA. 42 U.S.C. 6930(b). Further, the rule imposes no new requirements, so members of the regulated community do not need time to come into compliance.

III. To Whom Does the Final Rule Withdrawal of Provisions Apply?

This final rule applies to the owners and operators of facilities that generate or reclaim characteristically hazardous by-products or sludges within the mineral processing industry and to generators of manufactured gas plant wastes. We plan to further consider other revisions to the definition of solid waste (40 CFR 261.2) and will propose these revisions, as appropriate, in the future.

IV. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ''significant regulatory action'' and is therefore not subject to review by the Office of Management and Budget (OMB). Because the EPA has made a ''good cause'' finding that this action is not subject to notice and comment requirements under the Administrative Procedure Act or any other statute, it is not subject to the regulatory flexibility provisions of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), or to sections 202 and 205 of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104–4). In addition, this action does not significantly or uniquely affect small governments or impose a significant intergovernmental mandate, as described in sections 203 and 204 of the UMRA. This action also does not significantly or uniquely affect the communities of tribal governments, as specified by Executive Order 13175 (65 FR 67249, November 6, 2000). This action does not have substantial direct effects on the States, or on the relationship between the national government and the States, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This action also is not subject to Executive Order 13045 (62 FR 19885, April 23, 1997) because it is not economically significant.

This action does not involve the application of new technical standards; thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) of 1995 (15 U.S.C. 272) do not apply. This action also does not involve special consideration of environmental justice related issues as required by Executive Order 12898 (59 FR 7629, February 16, 1994). In issuing this action, EPA has taken the necessary steps to eliminate drafting errors and ambiguity, minimize potential litigation, and provide a clear legal standard for affected conduct, as required by section 3 of Executive Order 12988 (61 FR 4729, February 7, 1996). This rule is not subject to Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355 (May 22, 2001)) because it is not a significant regulatory action under Executive Order 12866. This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). The Congressional Review Act (5 U.S.C. 801 *et seq.*), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. Section 808 allows the issuing agency to make a rule effective sooner than otherwise provided by the Congressional Review Act if the agency makes a good cause finding that notice and public procedure is impracticable, unnecessary, or contrary to the public interest. This determination must be supported by a brief statement (5 U.S.C. 808(2)). As stated previously, the EPA has made such a good cause finding, including the reasons therefore, and established an effective date of March 13, 2002. The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 261

Environmental protection, Hazardous waste, Recycling, Reporting and recordkeeping requirements.

Dated: March 7, 2002.

Christine T. Whitman,

Administrator.

For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows.

PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, 6922, 6924(y), and 6938.

2. Section 261.2 is amended by revising paragraph (c)(3) to read as follows:

§ 261.2 Definition of solid waste.

* * * * *

(c) * * *

(3) *Reclaimed.* Materials noted with a ''*'' in column 3 of Table 1 are solid wastes when reclaimed (except as provided under § 261.4(a)(17)). Materials noted with a ''—''in column 3 of Table 1 are not solid wastes when reclaimed.

* * * * *

3. Section 261.4 is amended by revising paragraph (a)(17) to read as follows:

§ 261.4 Exclusions.

(a) * * *

(17) Spent materials (as defined in § 261.1) (other than hazardous wastes listed in subpart D of this part) generated within the primary mineral processing industry from which minerals, acids, cyanide, water, or other values are recovered by mineral processing or by beneficiation, provided that:

(i) The spent material is legitimately recycled to recover minerals, acids, cyanide, water or other values;

(ii) The spent material is not accumulated speculatively;

(iii) Except as provided in paragraph (a)(17)(iv) of this section, the spent material is stored in tanks, containers, or buildings meeting the following minimum integrity standards: a building must be an engineered structure with a floor, walls, and a roof all of which are made of non-earthen materials providing structural support (except smelter buildings may have partially earthen floors provided the secondary material is stored on the non-earthen portion), and have a roof suitable for diverting rainwater away from the foundation; a tank must be free standing, not be a surface impoundment (as defined in 40 CFR 260.10), and be manufactured of a material suitable for containment of its contents; a container must be free standing and be manufactured of a material suitable for containment of its contents. If tanks or containers contain any particulate which may be subject to wind dispersal, the owner/operator must operate these units in a manner which controls fugitive dust. Tanks, containers, and buildings must be designed, constructed and operated to prevent significant releases to the environment of these materials.

(iv) The Regional Administrator or State Director may make a site-specific determination, after public review and

comment, that only solid mineral processing spent material may be placed on pads rather than tanks containers, or buildings. Solid mineral processing spent materials do not contain any free liquid. The decision-maker must affirm that pads are designed, constructed and operated to prevent significant releases of the secondary material into the environment. Pads must provide the same degree of containment afforded by the non-RCRA tanks, containers and buildings eligible for exclusion.

(A) The decision-maker must also consider if storage on pads poses the potential for significant releases via groundwater, surface water, and air exposure pathways. Factors to be considered for assessing the groundwater, surface water, air exposure pathways are: The volume and physical and chemical properties of the secondary material, including its potential for migration off the pad; the potential for human or environmental exposure to hazardous constituents migrating from the pad via each exposure pathway, and the possibility and extent of harm to human and environmental receptors via each exposure pathway.

(B) Pads must meet the following minimum standards: Be designed of non-earthen material that is compatible with the chemical nature of the mineral processing spent material, capable of withstanding physical stresses associated with placement and removal, have run on/runoff controls, be operated in a manner which controls fugitive dust, and have integrity assurance through inspections and maintenance programs.

(C) Before making a determination under this paragraph, the Regional Administrator or State Director must provide notice and the opportunity for comment to all persons potentially interested in the determination. This can be accomplished by placing notice of this action in major local newspapers, or broadcasting notice over local radio stations.

(v) The owner or operator provides notice to the Regional Administrator or State Director providing the following information: The types of materials to be recycled; the type and location of the storage units and recycling processes; and the annual quantities expected to be placed in land-based units. This notification must be updated when there is a change in the type of materials recycled or the location of the recycling process.

(vi) For purposes of paragraph (a)(7) of this section, mineral processing spent materials must be the result of mineral processing and may not include any listed hazardous wastes. Listed hazardous wastes and characteristic hazardous wastes generated by non-mineral processing industries are not eligible for the conditional exclusion from the definition of solid waste.

* * * * *

4. Section 261.24 is amended by revising the first sentence of paragraph (a) to read as follows:

§ 261.24 Toxicity characteristic.

(a) A solid waste (except manufactured gas plant waste) exhibits the characteristic of toxicity if, using the Toxicity Characteristic Leaching Procedure, test Method 1311 in ''Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846, as incorporated by reference in § 260.11 of this chapter, the extract from a representative sample of the waste contains any of the contaminants listed in table 1 at the concentration equal to or greater than the respective value given in that table.

* * *

* * * * *

[FR Doc. 02–6063 Filed 3–12–02; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 54

[CC Docket Nos. 96–45, 98–77, 90–571, 92–237, 99–200, and 95–116; FCC 02–43]

Federal-State Joint Board on Universal Service

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Commission adopts certain modifications to the existing federal universal service contribution system. Based on examination of the record, the Commission concludes that these modifications are warranted because they will streamline and improve the current system without undue disruption while the Commission considers other, more substantial reforms.

DATES: Effective April 12, 2002.

FOR FURTHER INFORMATION CONTACT: Paul Garnett, Attorney, Common Carrier Bureau, Accounting Policy Division, (202) 418–7400.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order in CC Docket Nos. 96–45, 98–171, 90–571, 92–237, 99–200, and 95–116, FCC 02–43 released on February 26, 2002. The full text of this document is available for public inspection during regular business hours in the FCC Reference Center, Room CY–A257, 445 Twelfth Street, SW., Washington, DC 20554.

I. Introduction

1. In the Report and Order, we adopt certain modifications to the existing federal universal service contribution system. Based on examination of the record, we conclude that these modifications are warranted because they will streamline and improve the current system.

II. Report and Order

2. In the Notice of Proposed Rulemaking initiating this proceeding, *see* 66 FR 28718 (May 24, 2001), we recognized the need to reassess periodically the current contribution methodology to ensure that it remains consistent with the goals of the Act as the telecommunications marketplace evolves. Although we are seeking more focused comment on specific proposals to reform the Commission's universal service contribution methodology, we conclude that certain modifications to the current revenue-based contribution assessment methodology should be adopted now to ensure that the goals of the Act are maintained in the short term. Specifically, the measures we adopt in the Order will ensure that universal service funding remains specific and predictable while we consider whether to implement more substantial changes to the contribution methodology. In addition, these modifications will ensure that the recovery of universal service contributions is more understandable for consumers. These measures also will further reduce the regulatory costs of complying with universal service obligations and will ensure that the assessment of contributions remains equitable and nondiscriminatory.

3. First, we revise the Commission's rules to exclude universal service contributions from a contributor's assessable gross-billed interstate telecommunications revenues. This modification addresses ''circularity'' in the current methodology that may cause contributors to mark-up line items. Second, we amend the rules to permit contributors to submit revenue data on a consolidated basis on behalf of commonly-owned subsidiaries. Third, we increase from eight to 12 percent the amount of domestic interstate revenues a contributor may have and still qualify for the limited international revenues

Attachment 6—List of Federal Amendments

Following is a list of the EPA amendments that the MPCA is adopting, in whole or in part, in this rulemaking. These appear in order of their EPA-assigned amendment number (roughly chronologic), followed by the EPA's adopting *Federal Register* citation and title. The MPCA mostly focused on key amendments in this rulemaking, so the amendment numbers are not all sequential. The EPA published technical corrections to some of its amendments—indicated by extensions to the amendment numbers (e.g., 113, 113-1 and 113-2). The EPA also promulgated some amendments as a series (e.g., 192A and 192B). A dagger symbol following the amendment number (e.g., 95†) indicates that the amendment contains at least some optional provisions. This symbol '⋇' indicates that the EPA promulgated at least portions of the amendment under its HSWA authority (49 of 67 of listed amendments [73%] used HSWA or mixed HSWA authority Vs. strictly RCRA authority). Recall that HSWA amendments apply in Minnesota on their federal effective date. However, since Minnesota is not required to adopt federal regulations that reduce rule stringency, optional provisions, and RCRA amendments, only apply in Minnesota when adopted into rule:

EPA Amendment Number	***Federal Register* citation**	**Title of EPA amendments**
95† ⋇	56 FR 41,164 (8/19/91)	Land Disposal Restrictions for Electric Arc Furnace Dust (K061) (HSWA)
100 ⋇ mixed	57 FR 3,462 (1/29/92)	Liners and Leak Detection Systems for Hazardous Waste Land Disposal Units
108 ⋇	57 FR 30,657 (7/10/92)	Toxicity Characteristics Revision; Technical Corrections
109 ⋇	57 FR37,194 (8/18/92)	Land Disposal Restrictions for Newly Listed Wastes and Hazardous Debris—LDR
110† ⋇	57 FR 37,284 (8/18/92)	Coke By-Product Listings
113†	57 FR 42,832 (9/16/92)	Financial Responsibility for Third-Party Liability, Closure and Post-Closure
113-1	53 FR 33,938 (9/01/88)	Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities; Liability Coverage
113-2	56 FR 30,200 (7/01/91)	Liability Requirements; Technical Amendment (Non-HSWA)
115 ⋇	57 FR 47,376 (10/15/92)	Chlorinated Toluene Production Waste Listing
116 ⋇	57 FR 47,772 (10/20/92)	Hazardous Soil Case-By-Case Capacity Variance—LDR
117B ⋇	57 FR 23,062 (6/01/92)	Toxicity Characteristic Revision
118 ⋇	57 FR 54,452 (11/18/92)	Liquids in Landfills II
123 ⋇	58 FR 28,506 (5/14/93)	Land Disposal Restrictions; Renewal of the Hazardous Waste Debris Case-by-Case Capacity Variance—LDR
124 ⋇	58 FR 29,860 (5/24/93)	Land Disposal Restrictions for Ignitable and Corrosive Characteristic Wastes Whose Treatment Standards Were Vacated—LDR
126 ⋇ mixed	58 FR 46,040 (08/31/93)	Testing and Monitoring Activities
126-1 ⋇ mixed	59 FR 47,980 (09/19/94)	Hazardous Waste Management System; Testing and Monitoring Activities, Land Disposal Restrictions Correction

128	59 FR 458 (01/04/94)	Listing of HW; Wastes from Wood Surface Protection
131	59 FR 13,891 (03/24/94)	Recordkeeping Instructions
132	59 FR 28,484 (06/02/94)	Listing of HW; Wastes from Wood Surface Protection; correction
134	59 FR 31,551 (06/20/94)	Correction of Listing of P015—Beryllium Powder
136 ⌘	59 FR 43,496 (08/24/94)	Standards for the Management of Specific Hazardous Wastes; Amendment to Subpart C—Recyclable Materials Used in a Manner Constituting Disposal; Final Rule—LDR
137† ⌘ mixed	59 FR 47,982 (09/19/94)	Land Disposal Restrictions Phase II—Universal Treatment Standards, and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Waste
137-1	60 FR 242 (01/03/95)	Technical Amendment to the Universal Treatment Standards and Treatment Standards for Organic Toxicity Characteristic Wastes and Newly Listed Waste
138 ⌘ withdraw	59 FR 62896 (12/06/94)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers [NOTE: This checklist has been withdrawn. Its applicable provisions are included in Revision Checklist 154 which is a consolidation all of the rules associated with the organic air emission standards for tanks, surface impoundments, and container requirements (Subpart CC)]
151 ⌘	61 FR 15,566 (04/08/96)	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners
151-1 ⌘	61 FR 15,660 (04/08/96)	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners
151-2 ⌘	61 FR 19,117 (04/30/96)	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners
151-3 ⌘	61 FR 33,680 (06/28/96)	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners -Technical Correction
151-4 ⌘	61 FR 36,419 (07/10/96)	Land Disposal Restrictions Phase III—Decharacterized Wastewaters, Carbamate Wastes, and Spent Potliners
151-5 ⌘	61 FR 43,924 (08/26/96)	Emergency Revision of the Land Disposal Restrictions (LDR) Phase III Treatment Standards for Listed Hazardous Wastes From Carbamate Production
151-6 ⌘	62 FR 7,502 (02/19/97)	Land Disposal Restrictions: Correction of Tables; Treatment Standards for Hazardous Wastes and

		Universal Treatment Standards
154 ⌘	61 FR 59,931 (11/25/96)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
154-1 ⌘	59 FR 62,896 (12/06/94)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
154-2 ⌘	60 FR 26,828 (05/19/95)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
154-3 ⌘	60 FR 50,426 (09/29/95)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
154-4 ⌘	60 FR 56,952 (11/13/95)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
154-5 ⌘	61 FR 4,903 (02/09/96)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
154-6 ⌘	61 FR 28,508 (06/05/96)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers
155 ⌘	62 FR 1,992 (01/14/97)	Land Disposal Restrictions Phase III—Emergency Extension of the K088 Capacity Variance
157† ⌘	62 FR 25998 (05/12/97)	Land Disposal Restrictions Phase IV—Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions
159† ⌘	62 FR 32,974 (06/17/97)	Hazardous Waste Management System; Carbamate Production, Identification and Listing of Hazardous Waste; Land Disposal Restrictions
160 ⌘	62 FR 37,694 (07/14/97)	Land Disposal Restrictions Phase III — Emergency Extension of the K088 National Capacity Variance
161 ⌘	62 FR 45,568 (08/28/97)	Second Emergency Revision of the Land Disposal Restrictions(LDR) Treatment Standards for Listed Hazardous Wastes From Carbamate Production
162† ⌘	62 FR 64,504 (12/05/97)	Clarification of Standards for Hazardous Waste LDR Treatment Variances
163 ⌘	62 FR 64,636 (12/08/97)	Organic Air Emission Standards for Tanks, Surface Impoundments, and Containers; Clarification and Technical Amendment
167A† ⌘ mixed	63 FR 28,556 (05/26/98)	Land Disposal Restrictions Phase IV - Treatment Standards for Metal Wastes and Mineral Processing Wastes
167B†	63 FR 28,556 (05/26/98)	Land Disposal Restrictions Phase IV - Hazardous Soils Treatment Standards and Exclusions
167C	63 FR 28,556 (05/26/98)	Land Disposal Restrictions Phase IV - Corrections
167C-1	63 FR 31,266 (06/08/98)	Land Disposal Restrictions Phase IV - Corrections
167D†	63 FR 28,556 (05/26/98)	Mineral Processing Secondary Materials Exclusion—[NOTE: this provision vacated May 2001]
167E†	63 FR 28,556 (05/26/98)	Bevill Exclusion Revisions and Clarification
167F†	63 FR 28,556 (05/26/98)	Exclusion of Recycled Wood Preserving Wastewater
170† ⌘	63 FR 46,332 (08/31/98)	Land Disposal Restrictions - Phase IV

171 ⚒	63 FR 47,409 (09/04/98)	Emergency Revisions of LDR Treatment Standards
172† ⚒	63 FR 48,124 (09/09/98)	Characteristic slags generated from thermal recovery of lead by secondary lead smelters; land disposal restrictions; final rule; extension of compliance date
173 ⚒	63 FR 51,254 (09/24/98)	Land Disposal Restrictions Treatment Standards (Spent Potliners)
177 ⚒	64 FR 3,381 (01/21/99)	Organic Air Emission Standards
179† ⚒ mixed	64 FR 25,408 (05/11/99)	Land Disposal Restrictions Phase IV — Technical Corrections and Clarifications to Treatment Standard
183† ⚒ mixed	64 FR 56,469 (10/20/99)	Land Disposal Restrictions; Wood Preserving Wastes, Metal Wastes, Zinc Micronutrients Fertilizer, etc.
185† ⚒	65 FR 14,472 (03/17/00)	Organobromine Production Wastes
185-1	65 FR 36,365 (06/08/00)	Organobromine Production Wastes; Petroleum Refining Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Final Rule and Correcting Amendments
187† ⚒	65 FR 36,365 (06/08/00)	Organobromines Production Wastes; Petroleum Refining Wastes; Identification and Listing of Hazardous Waste; Land Disposal Restrictions; Final Rule and Correcting Amendments
189 ⚒	65 FR 67,068 (11/08/00)	Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Chlorinated Aliphatics Production Wastes; Land Disposal Restrictions for Newly Identified Wastes; and CERCLA Hazardous Substance Designation and Reportable Quantities
190† ⚒	65 FR 81,373 (12/26/00)	Deferral of Phase IV Standards for PCB's as a Constituent Subject to Treatment in Soil
192A† ⚒ mixed 192B	66 FR 27,266 (05/16/01)	Hazardous Waste Identification Rule (HWIR): Revisions to the Mixture and Derived-From Rules. A Mixture and Derived-From Rules Revisions B. Land Disposal Restrictions Correction
194† ⚒ mixed	66 FR 50332 (10/03/01)	Land Disposal Restrictions Phase IV--Treatment Standards for Wood Preserving Wastes, Paperwork Reduction and Streamlining, Exemptions From RCRA for Certain Processed Materials; and Miscellaneous Hazardous Waste Provisions
199†	67 FR 11,251 (03/13/02)	Hazardous Waste Management System; Definition of Solid Waste; Toxicity Characteristic; Vacatur of Mineral Processing Spent Materials Being Reclaimed as Solid Wastes and TCLP Use with MGP Waste [NOTE: most provisions are conditionally optional]